



OMAE

2018

Madrid

37th International Conference
on Ocean, Offshore and
Arctic Engineering

Madrid, Spain
June 17–22, 2018



Hosted
by:



UNIVERSITAT
ROVIRA I VIRGILI



POLITÉCNICA



Open day
November 10, 2018
09.30 - 17.00 hrs
opendagbijmarin.nl

Our future is at sea. We are facing the challenge of clean zero emission transport over water, autonomous shipping, and floating mega islands as a solution to rising sea levels and overpopulation. These challenges require maritime knowledge and innovation.

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PROGRAM AT A GLANCE

Saturday, June 16 (pg 26)

Short Courses

- **WEC Design Practices and Tools**
09:00 – 17:00
Dusseldorf
- **Dynamics and Vibrations in Offshore Structures**
09:00 – 17:30
Munich

Outreach

- **Team Building Exercise**
17:00 – 19:00
Dusseldorf
- **Welcome Dinner**
19:00 onwards
Off-site

Sunday, June 17 (pg 27)

Outreach

- **Welcome & Introductions**
Industry Presentations
08:30 – 17:00
Estrasburgo

Short Courses

- **Numerical and Experimental Dynamic Analysis of Offshore Wind Turbines**
09:00 – 17:00
Frankfurt

Welcome Reception

19:00 – 20:30
Venecia / Milán / Roma

Monday, June 18 (pg 28)

Opening Ceremony and Keynote Plenaries 08:30 – 10:00
Londres / Bristol / Oxford

Welcome and Opening Remarks

Dr. Antonio Souto-Iglesias, Conference Chair, OMAE 2018
Dr. Raúl Guanache García, Conference Chair, OMAE 2018
Dr. Francisco Huera-Huarte, Conference Chair, OMAE 2018
Dr. Solomon Yim, Technical Program Chair, OMAE 2018
Prof. Krish Thiagarajan Sharman, OMAE Division Chair
Julio Gómez-Pomar, Secretary of State for Public Works, Transport and Infrastructure

Keynote Plenary One

Reinventing Oil&Gas

Héctor Américo González Gómez, *Executive Director Technical Development & HSE, Repsol*

Awards

Refreshment Break 10:00 – 10:30 Venecia / Milán / Roma

Keynote Plenaries (Continued) 10:30 – 12:00

Londres / Bristol / Oxford

Keynote Plenary Two

Decommissioning in the Norwegian North Sea – Turning Liabilities into Opportunities

Vidar Nedrebø, *Managing Director, Repsol Norge AS*

Keynote Plenary Three

Mooring Systems, Current and Future Market Overview

Marcos Bergua Toledo, *Commercial Director VSSL & VCSA, VICINAY MARINE SLs*

OMAe 2019 Presentation

Prof. Atilla Incecik, *Conference Chair, OMAE 2019*

Opening Lunch 12:00 – 13:30

Buffet Madrid / France-Madrid Gallery / Lyon / Toulouse

Concurrent Sessions 13:30 – 15:00

- | | |
|-------------|--|
| OT 1-1-3 | Installation, Operation and Integrity Assessment |
| OT 1-4-1 | Design Optimization, Risk Analysis and Mitigation |
| SSR 2-12-4 | Structural Analysis and Optimization IV |
| SSR 2-13-1 | Risk Analysis and Management I |
| MAT 3-2-1 | Fatigue Performance I |
| PRS 4-1-1 | Flexible Pipes I |
| PRS 4-3-1 | Mechanics I |
| OE 6-3-1 | Modeling Techniques |
| OE 6-15-1 | Session I Development Methodologies and Novel Designs |
| CFD 8-8-1 | CFD and FSI Opening Session and Keynote on Digitalization and Machine Learning |
| ORE 9-2-1 | Verification and Validation |
| ORE 9-3-1 | Heaving and Pitching Wave Energy Converters |
| PT 11-5-1 | Petroleum Production Systems Design and Operation I |
| PT 11-6-1 | Well Drilling Fluids and Hydraulics I |
| HCGS 12-1-1 | Wave Spectral and Probabilistic Models |
| HCGS 12-5-1 | Ultimate Strength I |
| HBM 13-1-1 | Wave Body Interaction I |

Refreshment Break 15:00 – 15:30 Venecia / Milán / Roma

Concurrent Sessions 15:30 – 17:30

- | | |
|-------------|--|
| OT 1-1-4 | Spars, FPSOs and Multi-Column Floaters I |
| OT 1-4-2 | Simulation of Floaters and Moorings |
| SSR 2-7-1 | Reliability of Mooring and Riser Systems |
| SSR 2-12-3 | Structural Analysis and Optimization III |
| MAT 3-1-1 | Fracture Assessment - Analytical Methods |
| PRS 4-1-7 | Umbilicals and Cables I |
| PRS 4-3-5 | Thermo-Mechanical |
| OE 6-4-1 | Towed and Undersea Cables and Pipes, Mooring, and Buoy Technology |
| OE 6-15-2 | Sessions II-III: Embedded Architecture for Robotic Vehicles and Underwater Communication Systems. Sensors, Processing Algorithms, Distributed Platform and Software Architecture |
| CFD 8-8-2 | Optimization, Big Data and Machine Learning |
| ORE 9-1-4 | Floating Wind Turbines: Numerical Modelling II |
| ORE 9-3-2 | Oscillating Water Column |
| PT 11-6-2 | Well Drilling Fluids and Hydraulics II |
| PT 11-11-1 | Human Factor in Oil and Gas Operations |
| HCGS 12-1-3 | Wave Spectral and Probabilistic Models and Engineering Applications I |
| HCGS 12-8-1 | Maritime Safety and Human Factors I |
| HBM 13-1-2 | Wave Body Interaction II |

Afternoon Lecture Series 17:45 – 18:30 Londres

Prospects and Challenges in Arctic and Ice Technology
Dr. Walter Kuehnlein, *Managing Director, sea2ice Ltd & Co. KG*

Afternoon Drinks 18:30 – 19:30 Venecia / Milán / Roma

Tuesday, June 19 (pg 40)

Concurrent Sessions 08:30 – 10:00

- | | |
|-------------|--|
| OT 1-1-5 | Fixed Structures and Jack-up Rigs |
| SSR 2-8-1 | Reliability of Renewable Energy Systems |
| SSR 2-13-2 | Risk Analysis and Management II |
| MAT 3-3-1 | Fatigue and Fracture Assessment |
| PRS 4-1-2 | Flexible Pipes II |
| PRS 4-3-4 | VIV/Fatigue |
| OSU 5-1-1 | New Concepts for Ocean Space Utilization |
| OE 6-8-1 | Fluid-Structure, Multi-Body and Wave-Body Interaction I |
| OE 6-12-1 | Ocean Engineering Technology I |
| PAT 7-2-1 | Arctic Sea Transportation |
| CFD 8-1-1 | Maneuvering |
| ORE 9-1-1 | Floating Wind Turbines: Numerical Modelling I |
| ORE 9-4-2 | Case Studies and Field Tests |
| PT 11-10-1 | Drilling Geomechanics |
| HCGS 12-1-2 | Wave Spectral and Probabilistic Models and Engineering Applications II |
| HCGS 12-7-1 | Structural Reliability and Risk-Based Maintenance I |
| HBM 13-1-3 | Wave Body Interaction III |

Refreshment Break 10:00 – 10:30 Venecia / Milán / Roma

Concurrent Sessions 10:30 – 12:00

- | | |
|-------------|---|
| OT 1-2-1 | Model Testing |
| SSR 2-2-1 | Probabilistic and Spectral Wave Models |
| SSR 2-11-1 | Ultimate Strength I |
| MAT 3-4-1 | Fatigue and Fracture Performance in Sour Service |
| PRS 4-1-3 | Flexible Pipes III |
| PRS 4-3-7 | ECA and Inspection |
| OSU 5-2-1 | Aquaculture Structures in Waves and Current |
| OE 6-12-2 | Ocean Engineering Technology II |
| OE 6-15-3 | Session IV Dynamic and Kinematic Issues in Robotic Vehicles, Modelling, and Control |
| PAT 7-3-1 | Structures in Ice |
| CFD 8-1-2 | CFD, Waves |
| ORE 9-2-6 | Installation, O&M, and Case Studies |
| ORE 9-4-5 | Analytical, Numerical and Experimental Studies II |
| PT 11-6-3 | Well Drilling-Fluids and Hydraulics-III |
| HCGS 12-4-1 | Renewable Energy Offshore I |
| HCGS 12-7-2 | Structural Reliability and Risk-Based Maintenance II |
| HBM 13-3-1 | Second-order Loads and Response |

Lunch 12:00 – 13:30

Buffet Madrid / France-Madrid Gallery / Lyon / Toulouse

Concurrent Sessions 13:30 – 15:00

- | | |
|-------------|---|
| OT 1-2-2 | Mooring System Design and Analysis I |
| OT 1-3-4 | Fluid-Structure Interaction |
| SSR 2-1-2 | Abnormal or Rogue Waves II |
| SSR 2-11-2 | Ultimate Strength II |
| MAT 3-5-1 | Materials Performance in Harsh Conditions |
| PRS 4-1-4 | Flexible Pipes IV |
| OSU 5-2-2 | Aquaculture Technology I |
| OE 6-1-1 | Manoeuvring |
| OE 6-15-4 | Session IV (cont.) Dynamic and Kinematic Issues in Robotic Vehicles, Modelling, and Control |
| PAT 7-4-1 | Vessels in Ice including Maneuvring |
| CFD 8-3-1 | Risers and Pipelines I |
| ORE 9-1-2 | Floating Wind Turbine Experimental Testing and Validation II |
| ORE 9-5-1 | Turbine and Efficiency I |
| PT 11-6-4 | Well Fluids and Hydraulics IV |
| HCGS 12-4-2 | Renewable Energy Offshore II |
| HCGS 12-7-3 | Structural Reliability and Risk-Based Maintenance III |
| HBM 13-5-1 | Hydroelasticity |

Refreshment Break 15:00 – 15:30 Venecia / Milán / Roma

Concurrent Sessions 15:30 – 17:30

- | | |
|-------------|---|
| OT 1-1-6 | Spars, FPSOs and Multi-Column Floaters II |
| OT 1-4-4 | Structural Analysis and Simulation |
| SSR 2-1-1 | Abnormal or Rogue Waves I |
| SSR 2-11-3 | Ultimate Strength III |
| MAT 3-2-2 | Fatigue Performance II |
| PRS 4-3-3 | Installation |
| OSU 5-2-3 | Aquaculture Technology II |
| OE 6-2-2 | Nonlinear and Extreme Waves, Waves from Wind |
| PAT 7-5-1 | Full Scale Measurements and Ice Model Tests |
| CFD 8-3-2 | Risers and Pipelines II |
| ORE 9-1-6 | Floating Wind Turbine Experimental Testing and Validation I |
| ORE 9-5-3 | Design and Resources |
| PT 11-7-1 | Well Plugging and Abandonment |
| HCGS 12-4-3 | Renewable Energy Offshore III |
| HCGS 12-7-4 | Structural Reliability and Risk-Based Maintenance IV |
| HBM 13-4-1 | Floating Foundations for Wind Turbines |

Afternoon Lecture Series 17:45 – 18:30 Londres

New Insights on the Vortex-induced Vibrations of Long Flexible Cylinders

Dr. Kim Vandiver, *Professor of Mechanical and Ocean Engineering, Dean for Undergraduate Research, Director, Office of Experiential Learning, Massachusetts*

Afternoon Drinks 18:30 – 19:30 Venecia / Milán / Roma

Basque County Presentation
16:00 – 18:00
Marsella

Wednesday, June 20 (pg 58)

Concurrent Sessions 08:30 – 10:00

OT	1-2-3	Dynamic Positioning
OT	1-5-3	FLNG Technology
SSR	2-3-1	Probabilistic Response Models I
SSR	2-4-1	Fatigue and Fracture Reliability I
MAT	3-8-1	Life Extension and Integrity Assessment
PRS	4-1-5	Flexible Pipes V
OSU	5-3-1	Deepsea Mining and Underwater Technology
OE	6-8-2	Fluid-Structure, Multi-Body and Wave-Body Interaction II
OE	6-13-1	Metocean I : Measurement and Modelling of Currents and Solitons
PAT	7-6-1	Ice Management and Operations in Ice
CFD	8-1-3	Multi-hull
ORE	9-1-5	Offshore Wind Turbine Hydrodynamics
OG	10-1-1	Seabed Interaction, Processes and Properties
PT	11-1-2	Arctic Exploration and Drilling Challenges
HCGS	12-2-1	Floater Dynamics and Hydrodynamics I
HCGS	12-5-2	Ultimate Strength II
HBM	13-7-1	Gap and Moonpool Resonance I

Refreshment Break 10:00 – 10:30 Venecia / Milán / Roma

Concurrent Sessions 10:30 – 12:00

OT	1-2-4	Mooring System Design and Analysis II
OT	1-6-1	Wave-Induced Global Load and Response
SSR	2-3-2	Probabilistic Response Models II
SSR	2-4-2	Fatigue and Fracture Reliability II
MAT	3-9-1	Pipeline Engineering Critical Assessment
PRS	4-1-6	Flexible Pipes VI
OSU	5-5-1	Floating Offshore Wind Turbine
OE	6-8-3	Fluid-Structure, Multi-Body and Wave-Body Interaction III
OE	6-13-2	Metocean II : Joint Probability and Environmental Loads
PAT	7-8-1	Numerical Ice Modeling I
CFD	8-1-4	Radiation, Cavitation
ORE	9-2-3	Design/Siting Methods and Analysis I
OG	10-2-1	Anchors I
PT	11-6-5	Well Drilling Fluids and Hydraulics V
HCGS	12-2-2	Floater Dynamics and Hydrodynamics II
HCGS	12-5-5	Ultimate Strength III
HBM	13-7-2	Gap and Moonpool Resonance II

Wednesday Lunch 12:00 – 13:30

Buffet Madrid / France-Madrid Gallery / Lyon / Toulouse

Concurrent Sessions 13:30 – 15:00

OT	1-6-3	Industry Collaboration towards Confident CFD Applications on Offshore Engineering
OT	1-7-1	Wave Loading and Motions in Extreme Seas I
SSR	2-4-3	Fatigue and Fracture Reliability III
SSR	2-9-1	Extreme Loading and Responses I
MAT	3-10-1	Integrity Assessment of High Strength Steels
PRS	4-3-8	Mechanics III
OSU	5-5-2	Wave Energy Converter and Others
OE	6-2-1	Wave-structure Interactions I
OE	6-13-3	Metocean III : Impact of Cyclones Typhoons or Hurricanes
PAT	7-8-2	Numerical Ice Modeling II
CFD	8-1-5	Application
ORE	9-2-4	Design/Siting Methods and Analysis II
OG	10-5-1	Bucket Foundations and Suction Caissons
PT	11-6-6	Well Fluids and Hydraulics VI
HCGS	12-2-3	Floater Dynamics and Hydrodynamics III
HCGS	12-5-4	Structural Integrity and Monitoring
HBM	13-10-1	Seakeeping

Refreshment Break 15:00 – 15:30 Venecia / Milán / Roma

Concurrent Sessions 15:30 – 17:30

OT	1-3-1	Nonlinear Wave and Wave Effects
OT	1-7-2	Wave Loading and Motions in Extreme Seas II
SSR	2-9-2	Extreme Loading and Responses II
SSR	2-12-1	Structural Analysis and Optimization I
PRS	4-3-6	Pipe-Soil Interaction
OSU	5-6-1	Behaviours of Structure in Tsunami and Port Management
OE	6-2-3	Wave-structure Interactions II
OE	6-13-4	Metocean IV : Waves and Long Term Climate Trends
PAT	7-8-3	Numerical Ice Modeling III
CFD	8-2-1	Free Surface Loading and Structure Interaction
CFD	8-4-1	VIV Physics I
ORE	9-2-2	Numerical and Experimental Studies
OG	10-3-1	Pile Foundations I
PT	11-3-1	Inflow Control Technology in Reservoir Management
HCGS	12-2-4	Floater Dynamics and Hydrodynamics IV
HCGS	12-5-3	Fatigue Strength
HBM	13-9-1	Sloshing in Tanks

Afternoon Lecture Series 17:45 – 18:30 Londres

Some Recent Developments in 3-d Wave Diffraction

Methods: Applications and Numerical Aspects

Dr. Johannes Pinkster, Professor Emeritus of Ship Hydrodynamics, Delft University of Technology Consultant, Pinkster Marine Hydrodynamics (PMH bv)

Conference Banquet 19:30 – 24:00 Palacio del Negralejo

Transportation from Marriott: 19:30 – 20:00

Banquet: 20:00 – 24:00

Thursday, June 21 (pg 76)

Outreach Breakfast / Feedback Session 07:30 – 10:00 Paris

Concurrent Sessions 08:30 – 10:00

OT	1-3-2	Numerical Methods and Experiments
SSR	2-10-1	Collision and Crashworthiness I
SSR	2-12-2	Structural Analysis and Optimization II
PRS	4-2-1	Rigid Risers - Design
PRS	4-3-2	Mechanics II
OSU	5-7-1	Environmental Assessment for Marine Renewable Energy
OE	6-1-2	Powering
OE	6-8-4	Fluid-Structure, Multi-Body and Wave-Body Interaction IV
CFD	8-2-2	Free Surface Modeling
CFD	8-4-2	VIV Physics II
ORE	9-4-4	Site Selection, Hybrid Devices and Farms
OG	10-6-1	Spudcans and Shallow Foundations
PT	11-2-1	Drilling Mechanics I
PT	11-4-1	Integrity of Well Barriers - Part 1
HCGS	12-3-1	Ship Maneuvering and Control I
HCGS	12-9-1	Offshore Floating Structures

Refreshment Break 10:00 – 10:30 Venecia / Milán / Roma

Concurrent Sessions 10:30 – 12:00

OT	1-3-3	Platform/Ship Motions
SSR	2-10-2	Collision and Crashworthiness II
PRS	4-2-2	Rigid Risers - Analysis
PRS	4-5-1	Flow Assurance I
OSU	5-9-1	Coastal Zone Utilization and Management
OE	6-1-4	Seakeeping - Motions and Added Resistance in Waves
OE	6-8-5	Fluid-Structure, Multi-Body and Wave-Body Interaction V
PAT	7-9-1	SKT Project I
CFD	8-2-3	Particle-Based Free Surface Modeling
CFD	8-4-3	VIV Suppression I
ORE	9-3-3	Model Development, Verification and Validation
ORE	9-6-1	Thermal, Hybrid and Others: Analysis and Design
OG	10-7-1	Pipelines
PT	11-1-1	Multiphase Flow for Offshore Production
PT	11-4-2	Integrity of Well Barriers - Part 2
HCGS	12-3-2	Ship Maneuvering and Control II
HCGS	12-9-2	Strength of Offshore Structures and Equipment

Technical Session Organizers' Lunch 12:00 – 13:30

Buffet Madrid / France-Madrid Gallery / Lyon / Toulouse

Concurrent Sessions 13:30 – 15:00

SSR	2-6-1	Well Integrity and Reliability Assessment
PRS	4-2-3	Rigid Risers - VIV and Fatigue
PRS	4-5-2	Flow Assurance II
OE	6-1-5	Seakeeping - Parametric Roll and Error Statistics
OE	6-3-2	Wave Loads
OE	6-3-4	Ship Dynamics
OE	6-14-1	Coastal Engineering I
PAT	7-9-2	SKT Project II
CFD	8-6-1	Advanced Computations & Software Development
ORE	9-3-5	Control and New Design Concept
ORE	9-5-2	Turbine and Efficiency II
OG	10-8-1	Anchors II
PT	11-1-3	Drilling Technology Evaluation
PT	11-5-2	Petroleum Production Systems Design and Operation II
HCGS	12-3-3	Ship Maneuvering and Control III
HCGS	12-6-1	Collision and Crashworthiness I

Refreshment Break 15:00 – 15:30 Venecia / Milán / Roma

Concurrent Sessions 15:30 – 17:30

SSR	2-12-5	Structural Analysis and Optimization V
PRS	4-4-1	Subsea Structures and Equipment
PRS	4-6-1	Innovative Technologies for Deepwater Low-Cost Production
OE	6-6-1	Unsteady Hydrodynamics Vibrations, Acoustics, and Propulsion
OE	6-7-2	Hydrodynamics and Welded Joints
OE	6-9-1	Environment, Aquaculture and Very Large Structures
OE	6-14-2	Coastal Engineering II
PAT	7-9-3	SKT Project III
CFD	8-7-1	Verification, Validation and Best Practices
ORE	9-4-1	Analytical, Numerical and Experimental Studies I
ORE	9-6-2	Thermal, Hybrid and Others: Novel Concepts
OG	10-4-1	Pile Foundations II
PT	11-8-1	Innovations in Drilling, Production and Transportation
HCGS	12-3-4	Ship Maneuvering and Control IV
HCGS	12-6-2	Collision and Crashworthiness II

Farewell Reception 17:30 – 19:30 Venecia / Milán / Roma

Hosted by OMAE 2019

Friday, June 22 (pg 94)

Technical Tour

Technical Tour to the CEHIPAR ocean basin
See pg 94

Wi Fi Network

Network: Marriott Guest /
Marriott Conference
Password: Madrid



Registration Italy-Germany Gallery

Sunday, June 17	13:00 – 20:00
Monday, June 18	07:00 – 17:00
Tuesday, June 19	08:00 – 17:00
Wednesday, June 20	08:00 – 17:00
Thursday, June 21	08:00 – 17:00

Exhibition Venecia / Milán / Roma

Sunday, June 17	19:00 – 20:30
(Welcome Reception amongst Exhibits)	
Monday, June 18	10:00 – 19:30
Tuesday, June 19	10:00 – 19:30
Wednesday, June 20	08:30 – 17:00
Thursday, June 21	08:30 – 10:30

Daily Program Handout

An updated daily program handout will be available at the Registration Desk the mornings of Tuesday, Wednesday and Thursday. The handout will incorporate any last-minute program changes and show the time-synchronized order of presentations in each session for that day. You can use this handout as a general reference and to easily plan your personal attendance schedule for the day. The program changes will also be updated on the updated on the Conference App.

Concurrent Sessions Abbreviation Key

CFD	CFD and FSI
HBM	Honoring Symposium for Professor Bernard Molin on Marine and Offshore Hydrodynamics
HCGS	Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering
MAT	Materials Technology
OE	Ocean Engineering
OG	Off shore Geotechnics
ORE	Ocean Renewable Energy
OSU	Ocean Space Utilization
OT	Offshore Technology
PAT	Polar and Arctic Sciences and Technology
PRS	Pipelines, Risers, and Subsea Systems
PT	Petroleum Technology
SSR	Structures, Safety and Reliability

See the Technical Program (starting on pg 30) for individual session room assignments.

VENUE FLOOR PLAN

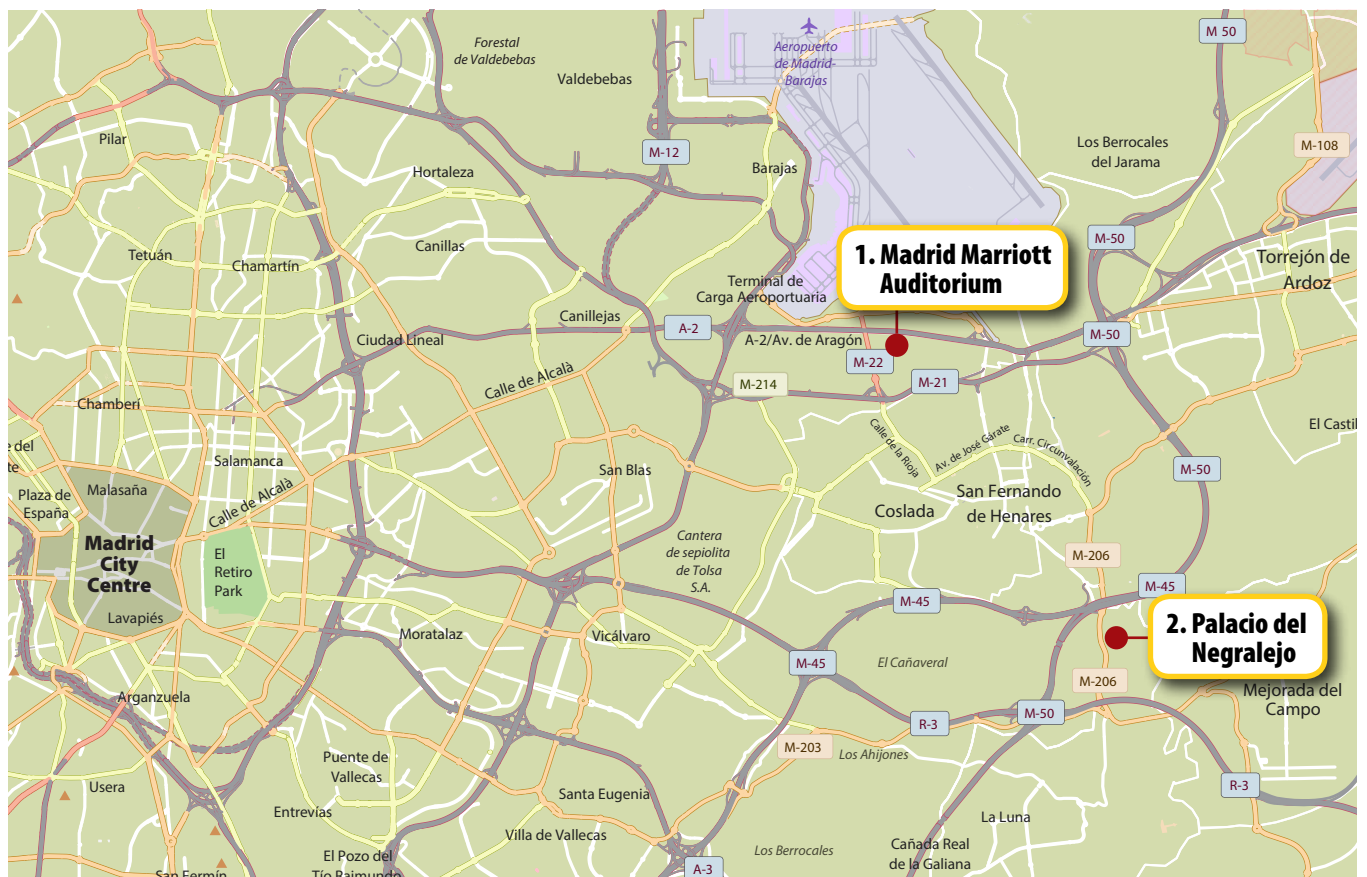
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- Opening Ceremony** (Londres, Bristol, Oxford)
- Exhibits, Refreshment Breaks, Opening & Farewell Receptions** (Roma, Milán & Venecia)
- Concurrent Sessions** (various rooms)
- Lunch** (Buffet Madrid, France-Madrid Gallery, Toulouse, Lyon)



Madrid



1 Madrid Marriott Auditorium Hotel & Conference Centre

Avenida de Aragón No 400

2 Palacio del Negralejo (Conference Banquet)

Carretera San Fernando
Mejorada, s/n
28840 Rivas-Vaciamadrid



Dr. Antonio Souto-Iglesias



Dr. Raúl Guanche García



Dr. Francisco Huera-Huarte

Welcome from the Conference Chairs

It is a great pleasure for us to welcome you to the 37th ASME International Conference on Ocean, Offshore and Arctic Engineering (OMAE) in Madrid, Spain, from June 17 to 22, 2018.

The OMAE Conference series has established itself as one of the leading events in the field and this year, for the first time, the Conference will be held in Spain. Madrid is a vibrant city with a population of more than three million people and is recognized as one of the top touristic destinations in Europe, not only because of its climate and amazing cuisine but also because of its history, culture and great museums.

With more than 900 papers submitted and organized around 13 symposia, OMAE 2018 will offer an array of oral presentations planned in parallel sessions. Moreover, continuing the trend started last year in Trondheim, this year we will have new and exciting Afternoon Lecture Series. The Short Courses and the Outreach for Engineers complete a program that has been carefully devised for you to get the most out of the Conference. We have planned the social events for your enjoyment, including the Conference Banquet in the 18th Century Negralejo Palace. The Technical Tour will give you the opportunity to visit the CEHIPAR ocean basin, followed by a half-day tour to the historic City of Segovia.

We recognize OMAE 2018 as the ideal forum for researchers, engineers, managers, technicians and students from the scientific and industrial communities around the world to gather for discussing and presenting the latest technological advances and trends. We strongly believe the Conference will be a unique opportunity to promote international cooperation in ocean, offshore and arctic engineering.

We are looking forward to welcoming you all to OMAE 2018 in Madrid!

—Dr. Antonio Souto-Iglesias
Conference Chair

Associate Professor, Head of CEHINAV, DMFPA, ETSIN,
Universidad Politécnica de Madrid

—Dr. Raúl Guanche García
Conference Chair

Head of Offshore Engineering and Ocean Energy Group,
Environmental Hydraulics Institute of Cantabria – IHCantabria,
Universidad de Cantabria

—Dr. Francisco Huera-Huarte
Conference Chair

Associate Professor, Department of Mechanical Engineering,
Universitat Rovira i Virgili



Dr. Solomon Yim

Welcome from the Technical Program Chair

Welcome to the 37th International Conference on Ocean, Offshore and Arctic Engineering (OMAE) in the historic city of Madrid, Spain. It is a great honor and a pleasure for me to work with outstanding researchers and practicing engineers in the OMAE community and to serve as Technical Program Chair of this great conference. I am sure you will appreciate the excellent facilities of the venue, and enjoy the friendly atmosphere, historical landmarks and amenities the beautiful city of Madrid has to offer.

The OMAE 2018 technical program contains over 930 peer reviewed papers covering the full range of ocean, offshore and arctic engineering. You will find a broad scope of stimulating technical presentations on recent advances in science, engineering and associated technologies. In addition, you will have the opportunity to meet and exchange ideas with research and engineering professionals, faculty members and students from all over the world.

As in previous years, there are eleven standing Technical Symposia, which provide the framework for organizing information in the conference. In addition, this year's conference will also include two special symposia: the Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering, and the Honoring Symposium for Professor Bernard Molin on Marine and Offshore Hydrodynamics. Professors Guedes Soares and Molin are outstanding researchers and leaders in their respective fields and have been for many years. I am sure you will enjoy the rich and diverse technical contents of the papers in their symposia. As part of our mission concerning the continuing education and support for students and young professionals, another

component of the conference consists of several short courses on current and emerging technologies and an Outreach for Engineering Forum. We hope they are helpful to our younger members.

Special thanks are due to the Local Conference Chairs, Professors Antonio Souto-Iglesias (Universidad Politécnica de Madrid), Raul Guanche Garcia (Universidad de Cantabria), and Francisco Huera-Huarte (Universitat Rovira i Virgili), as well as to the local organizers for their outstanding leadership and hard work in organizing OMAE 2018. Their efforts to bring the event to Madrid and make the conference a success is greatly appreciated. Many thanks are also due to the Symposium Coordinators, Topic and Session Organizers, Session Chairs and Reviewers who spent considerable time and effort to ensure the excellence and quality of their respective technical sessions. I would also like to recognize the dedication and support of the professional staff from ASME and Sea to Sky Meeting Management, whose behind-the-scenes work is vital to the success of the conference but is not always visible. In addition, we are most grateful for the financial support from all our sponsors.

Finally, I would like to thank all authors and attendees for their time and contribution to make the OMAE 2018 conference a truly exceptional event and to wish all of you a stimulating and productive conference and a memorable visit to the historic city of Madrid.

—Dr. Solomon C. Yim
OMAE 2018 Technical Program Chair
Professor of Civil Engineering, Oregon State University





Prof. Krish Thiagarajan
Sharman

Welcome from the OOAE Division

This year's OMAE Conference, taking place in the historical city of Madrid, is the first time OMAE has visited the country of Spain, which has a long history with ships and sailing the oceans. Over the past 36 years, we have seen OMAE grow from strength to strength, bringing in people together from industry, government and academia to discuss and share our achievements in understanding the ocean. As noted in my Chair's Message in the 2018 OOAE news brief (*Mechanical Engineering Magazine*, vol. 140 issue 3, March 2018), 70% of our earth's surface is covered with oceans, and our Division is the only one that is exclusively focused on this massive resource. We certainly have our hands full!

My sincere appreciation goes to the Local Organizing Committee for working hard behind the scenes to put together a spectacular conference. I invite all of you to visit the Conference Exhibition, attend the sessions, mingle with friends and colleagues at the lunches and social events, and when time permits, head out to catch the Madrid breeze and sights! The Technical Program is very rich this year, and is no exception to the quality we have all come to expect of an OMAE Conference. My kudos to the Technical Program Chair, the Symposia Coordinators, as well as Topic and Session Organizers for this accomplishment. Stitching the Technical Program and the Conference events together is seamless, thanks to the dedication of ASME and Sea to Sky staff.

I started attending the OMAE Conference regularly in 1996, when it took place in Florence. Initiated under the mentorship of our beloved Subrata Chakrabarti, this 22-year journey has shaped my career profoundly. This past year has been a great opportunity to serve the Division, with the support of a dedicated team of volunteers who make up the Division Executive Committee. We met in person and over the phone several times, to discuss and work on issues with the single goal of making the Division – and by extension the OMAE Conference – strong and vibrant. At the end of the Conference, I will pass the Chair responsibility over to my good friend and current Vice-Chair, Antonio Carlos Fernandes, and will serve the 2019 Conference as the Technical Program Chair.

We encourage all non-member attendees to join ASME and set the OOAE Division in your preferences. On behalf of the Executive Committee, have a great conference in Madrid and I hope to see you at future Conferences.

—Professor Krish Thiagarajan Sharman
OOAE Executive Division Chair
Endowed Chair in Renewable Energy and Professor,
Department of Mechanical and Industrial Engineering,
University of Massachusetts Amherst



Julio Gómez-Pomar

Welcome from the Government of Spain

On behalf of the Government of Spain, I warmly welcome you to the 37th Conference on Ocean, Offshore and Arctic Engineering (OMAE 2018) hosted in Madrid.

Spain is a maritime country par excellence, with nearly 8,000 kilometers of coastline and is situated in the axis of some of the world's most important maritime routes. Spain encompasses a few of the most significant ports in the world such as Algeciras and Barcelona, and plays a pivotal role for the offshore industry in several locations, such as Las Palmas de Gran Canaria, a very well-known service-provider port for the offshore industry in western Africa.

The maritime industry, and hence the knowledge and technology on which it relies, is of great importance for Spain and its dynamic and vibrant engineering sector, which involves

companies, universities and public institutions committed to promoting and sustaining R&D in the field of Offshore, Arctic and Ocean Engineering.

For all of these reasons, we are pleased to host OMAE 2018 and would like to share with all the participants our best wishes for a fruitful and successful Conference.

I would like to thank the organizers for having chosen Madrid and Spain to host OMAE 2018 and invite you all to enjoy our wonderful city of Madrid and its charming blend of culture, history, food and hospitality.

Once again, welcome to Spain.

—Julio Gómez-Pomar
Secretary of State for Public Works,
Transport and Infrastructure



Award Winners

The Subrata Chakrabarti Young Professional Award

Yuanchuan Liu, for his outstanding presentation and paper OMAE2017-61062 “A Coupled CFD / Multibody Dynamics Analysis Tool for Offshore Wind Turbines with Aeroelastic Blades”

OMAE 2017 Best Paper Awards

Offshore Technology Symposium, OMAE2017-61942, “Prediction of Offshore Platform Mooring Line Tensions Using Artificial Neural Network” by Djoni E. Sidarta, Johyun Kyoung, Jim O’Sullivan and Kostas F. Lambrakos

Structures, Safety and Reliability Symposium, OMAE2017-61969, “Safety of Pipelines Subjected to Deterioration Processes Modelled Through Dynamic Bayesian Networks” by O. G. Palencia, A. P. Teixeira and C. Guedes Soares

Pipelines, Risers and Subsea Systems Symposium, OMAE2017-61129, “Optimizing the Design of Unbonded Flexible Pipelines with More Realistic Predictions of PH and H₂S Content in the Annulus” by Li Ke, Carol Taravel-Condât, Jean Kittel, Rémy Mingant, Claude Duret-Thual and Virginie Querez

Ocean Engineering Symposium, OMAE2017-62056, “Effective Power and Speed Loss of Underwater Vehicles in Close Proximity to Regular Waves” by Stefan Daum, Martin Greve and Renato Skejic

Polar and Arctic Sciences and Technology Symposium, OMAE2017-62509, “Identification of Potentially Unmanageable Ice Features” by Svetlana Shafrova, Dmitri Matskevitch, Curtis Holub and Ted Kokkinis

Prof. Carl Martin Larsen and Dr. Owen Oakley Honoring Symposia on CFD and VIV, OMAE 2017-61485, “Determining Thruster-Hull Interaction for a Drill-Ship Using CFD” by Arjen Koop, Hans Cozijn, Patrick Schrijvers and Guilherme Vaz

Ocean Renewable Energy Symposium, OMAE2017-61676, “Experimental and Numerical Statistics of Storm Wave Forces on a Monopile Turbine in Uni- and Multidirectional Seas” by Signe Schløer, Henrik Bredmose and Amin Ghadirian

Petroleum Technology Symposium, OMAE2017-62071, “Study of the Influence of Shale Anisotropy Orientation on Directional Drilling Performance in Shale” by Abdelsalam N. Abugharara, Charles A. Hurich, John Molgaard and Stephen D. Butt

Torgeir Moan Honoring Symposium, OMAE2017-62680, “Hydroelastic Responses of VLFS Deployed Near Islands and Reefs” by Yousheng Wu, Jun Ding, Zhiwei Li, Xinyun Ni, Xiaofeng Wu and Chao Tian



Attendee Information

Registration

The Registration Desk is located on the Italy-Germany Gallery, and is open during the following hours:

Sunday, June 17:	13:00 – 20:00
Monday, June 18:	07:00 – 17:00
Tuesday, June 19:	08:00 – 17:00
Wednesday, June 20:	08:00 – 17:00
Thursday, June 21:	08:00 – 17:00

Name Badges

In addition to being a means of identification to colleagues, you are required to wear your name badge for admission to conference sessions and events. Room monitors will check name badges before allowing anyone into the session or event. Replacement badges are available at the Registration Desk at a cost of €25 per badge. Attendees who have paid the author/member, non-member or student registration fee are entitled to admission to all conference sessions, daily refreshment breaks, the Welcome Reception, the Exhibition, the four Lunches, the Conference Banquet and the Farewell Reception. These attendees will also receive a conference bag and a program.

Daily Registration: Attendees who have paid the one-day registration fee qualify for the badge representing the day they have selected to attend. Attendees wearing this badge are entitled to the following on their specified day: admission to conference sessions, refreshment breaks, the Exhibition

and food and beverage service. The Conference Banquet is excluded from the daily pass. Daily attendees will also receive a conference bag and a program.

Accompanying Person: Guests who have registered as an accompanying person qualify for this badge and are entitled to admission to the Welcome Reception, the Conference Banquet and a special sightseeing tour on Monday.

Exhibitors: Exhibit staff has access to the Exhibition and may participate in the Welcome Reception, the four Lunches, the Conference Banquet, and the Farewell Reception. One representative from each exhibiting company is permitted to attend conference sessions.

Technical Tours and Social Events: Pre-purchased tickets for technical tours and social events are provided with your name badge.

Crowd Compass App

Engage with sessions, speakers, and organizations, watch social networking in action, including posting on the in-app feed or sharing outside it. Download the Crowd Compass App from your app store. After installation, search for OMAE and download. Once OMAE is downloaded, you can set up a login. You will then receive a verification email with a code you need to enter in the app. Once you have entered the code in the app, this will grant you access to the event.

Continued...



ATTENDEE INFORMATION

Author Presentations

If you are a Presenter, please be in the session room 30 minutes prior to the start of the first presentation of your session in order to upload your presentation. You may also upload your presentation any time prior to your talk on the computer in your session room.

Conference Evaluation

Our aim is to deliver a conference that is an enjoyable and educational experience. We rely on your full and honest feedback to improve future conferences. An online survey will be emailed to you following the conference and we appreciate your time and assistance in completing the survey and providing your feedback.

Dietary Requirements

Menu items will be labelled for common dietary requirements. If you are unsure, or if the label does not specify your dietary requirement, please contact one of the Hotel catering staff who will be happy to provide details on the ingredients. Please advise the Conference Secretariat of any dietary requirements during the registration process. If you have not advised the Conference Secretariat of your special dietary needs, advise the staff at the Registration Desk before 18:00 on Sunday, June 17.

First Aid

For medical first aid assistance, please see the Hotel's Main Reception. The nearest hospital is San Fernando de Henares, a ten-minute drive from the Conference venue.

Internet

Free Wi Fi internet is available. The network name is "Marriott Guest / Marriott Conference" and the password is "Madrid".

Lost & Found

Should you lose or misplace an item, please go to the Registration Desk for assistance or inquire at the Hotel's Main Reception.

Meeting Room Protocol

Every effort will be made to ensure that all sessions start and end on time. Presenters and attendees are asked to work together to achieve this. This may mean having to cut short a valuable discussion; however, Conference organizers request your cooperation for the benefit of all attendees. Please turn your cell phone and other noise making devices off or set to vibrate.

Smoking

Smoking is not permitted within the Hotel. Smoking is permitted outside.





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Social Events

Welcome Reception

Sunday, June 17, 19:00 – 20:30

Location: Venecia / Milán / Roma

They say the best way to experience Madrid is through enjoying its traditional food and drink. Join us at the Welcome Reception for local beer, wine and appetizers – also known as “tapas” here in Madrid and experience the best of Spanish hospitality along with music from the Madrid-based Cuban band *Chicas de la Habana*.

Welcome Reception sponsored by Repsol



Conference Banquet

Wednesday, June 20

Transportation from Marriott to the Palacio del Negralejo: 19:30 – 20:00
Banquet: 20:00 – 24:00

Location: Palacio del Negralejo, Carretera San Fernando, Mejorada, s/n, 28840 Rivas-Vaciamadrid (Madrid)
Tel: +34 916 69 11 25

Conference Banquet sponsored by Repsol



Refreshment Breaks

Monday, June 18 to Thursday, June 21

Morning: 10:00 – 10:30 /

Afternoon: 15:00 – 15:30

Location: Venecia / Milán / Roma

Refreshment breaks will take place amongst the exhibits.

Monday morning's Refreshment Break sponsored by Tubacex Group



Lunches

Monday, June 18 to Thursday, June 21

Location: Buffet Madrid / France-Madrid Gallery / Lyon / Toulouse

Monday: Opening Lunch (12:00 – 13:30)

Tuesday: Lunch (12:00 – 13:30)

Wednesday: Lunch (12:00 – 13:30)

Thursday: Technical Session Organizers Lunch (12:00 – 13:30)

Lunch is open to all attendees when lunch is included in their fee.

Afternoon Drinks

Monday, June 18 and

Tuesday, June 19, 18:30 – 19:30

Location: Venecia / Milán / Roma

Monday – featuring entertainment by the *Flamenco Jazz Company*

Tuesday – featuring music by Spanish-American singer *Marem Ladson*.

All attendees are invited.

Tuesday's Afternoon Drinks sponsored by Oil&Gas Basque Industry



Madrid Marriott Auditorium Hotel & Conference Centre

Transportation to and from: Coach service is provided to and from the Marriott to the Palacio del Negralejo. Coaches depart from Marriott between 19:30 and 20:00. A shuttle service will operate to return guests to the Marriott from 21:30 until midnight.

The OMAE Local Organizing Committee has chosen a very special and unique venue for this year's conference banquet. Upon the ruins of castle “de Negrals”, a noble Spanish family built the beautiful Palacio del Negralejo in 1790. Full of history, Palacio del Negralejo now serves as a special event venue and is known for its outstanding cuisine. Upon arrival at Palacio, guests will enjoy a red-carpet welcome with drinks and be entertained by a horse show and dancers. Dinner will follow, featuring themed food stations with local cuisine and wines. After dinner, there will be two hours of an open bar with music by local latin-fusion band *Tongo* and our DJ *Toño Cabanelas*. For all soccer fans, we will also live-stream the Spain versus Iran FIFA World cup soccer match.



Palacio del Negralejo

Farewell Reception

Thursday, June 21, 17:30 – 19:30

Location: Venecia / Milán / Roma

Hosted by the OMAE 2019 committee, celebrate the end of another amazing conference and find out more about next year's conference in Glasgow, Scotland, a beautiful city known for its culture, architecture and the friendliness of its people.

*Hosted by
OMAЕ 2019*

Accompanying Persons Program

Monday Tour, June 18

Departure Point: Conference Registration Desk
(Italy-Germany Foyer)

Departure: 08:45

The Accompanying Persons Program includes admission to the Welcome Reception, the Conference Banquet and panoramic bus and walking tours of Madrid. Guests will visit several sites including the Cuatro Torres, the Plaza de Castilla and the Palacio Real. On foot, guests will explore the main center, from the Oriente Square (the Royal Palace) to the Main Square. A tapas break is included.

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Plaza de Castilla

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www.ihcantabria.com



IHCantabria is a research center specialized in basic and applied research, with more than 140 engineers and scientists focused on coastal and offshore engineering tasks. A market oriented research strategy combined with a unique set of experimental facilities lead to cutting edge engineering solutions for the most demanding engineering challenges in the marine environment. The accumulated know-how after 30 years of activity at a national and international level in the ocean engineering field, makes IHCantabria a leading international research center and a reliable, independent and innovative service provider for the most demanding marine activities.

Universidad Politécnica de Madrid
www.upm.es



POLITÉCNICA

Universidad Politécnica de Madrid (UPM) is the largest Spanish technical university. Its Marine Engineering School (ETSIN), with over 500 students, is amongst the largest in Europe. Prof. Souto-Iglesias, one of the Chairs of OMAE 2018, belongs to the Fluid Mechanics and Aerospace Propulsion Department (DMFPA) and is Head of CEHINAV Research Group. CEHINAV manages the Towing Tank Laboratory at ETSIN. Its activities comprise experimental campaigns and numerical simulations to investigate the hydrodynamics of ships and offshore artifacts. CEHINAV has participated since 1988 in more than 250 projects commissioned by public and private companies at national and international levels. CEHINAV is an ITTC member.

Universitat Rovira i Virgili
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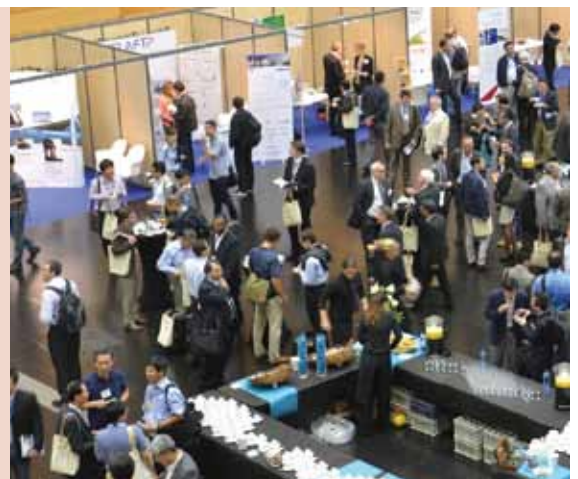
Universitat Rovira i Virgili (URV) is a young and dynamic institution located on the Mediterranean coast of Southern Catalonia. It is the centre of a strategic union of different structures involved in teaching, research and knowledge transfer, all combining at the Campus of International Excellence of Southern Catalonia (CEICS). In just 26 years, URV has managed to enter the international rankings among the best young universities in the world and it is now referenced in the fields of chemistry and energy, amongst others. Professor Huera-Huarte is the Head of the Laboratory for Fluid-Structure Interaction, Department of Mechanical Engineering, a small but highly active and multidisciplinary team working on fluid mechanics and fluid-structure interaction problems with applications to offshore and wind engineering.

Exhibition

Visit the exhibits to discover new products and services from some of the industry's leading organizations. Coffee and tea will be served amongst the exhibits during Refreshment Breaks.

Location: Venecia / Milán / Roma
Dates & Times:

Sunday, June 17	19:00 – 20:30
Monday, June 18	10:00 – 19:30
Tuesday, June 19	10:00 – 19:30
Wednesday, June 20	08:30 – 17:00
Thursday, June 21	08:30 – 10:30



SUPER PLATINUM

Repsol
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Repsol is one of the world's leading publicly-traded oil and gas companies. The company operates in the areas with the most energy potential around the world, and has one of the most efficient refining systems in Europe.

Repsol is present in 37 countries employing over 24,000 people. The company has business activity across the entire value chain, including hydrocarbon exploration and production, refining, transport, chemicals, service stations and the development of new energy solutions.

The company produces approximately 700,000 barrels of oil equivalent per day and its excellent refining assets can process 998,000 barrels of crude oil per day. Repsol also distributes and sells fuels and lubricants through its more than 4,700 service stations. The majority are in Spain, where the company is a market leader.

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SILVER

Oil&Gas Basque Industry
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Oil&Gas Basque Industry brings together leading Basque companies that are industrial and technological international references in the Oil&Gas sector. With over 50 organizations and R&D agents in a radius of less than 60 kilometers, the Basque Country is one of the regions in the world with a larger concentration of companies in the Oil&Gas supply chain.

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SYMP 9: Ocean Renewable Energy Symposium
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SYMP 12: Professor Carlos Guedes Soares Honoring Symposium
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SYMP 13: Professor Bernard Molin Honoring Symposium
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Exhibitors

ARCWIND.EU

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ARCWIND: Adaptation and implementation of floating wind energy conversion technology for the Atlantic region is a European project with the main purpose of studying the implementation of farms of floating wind energy platforms. ARCWIND is led by the Centre for Marine Technology and Ocean Engineering of Instituto Superior Técnico and has a consortium of 15 partners from the 5 Atlantic Area countries. ARCWIND (EAPA_344/2016) is co-financed by the European Regional Development Fund through the Interreg Atlantic Area Programme.

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DSA is an ocean engineering consultancy and software company. We provide solutions that enable marine service providers, project developers, ocean engineers, naval architects, oceanographers – or anybody with business in the water – to assess the effect of currents, winds and waves on their vessels, technologies, and projects.

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IHCantabria is a research center specialized in basic and applied research, with more than 140 engineers and scientists focused on coastal and offshore engineering tasks. A market oriented research strategy combined with a unique set of experimental facilities lead to cutting edge engineering solutions for the most demanding engineering challenges in the marine environment. The accumulated know-how after 30 years of activity at a national and international level in the ocean engineering field, makes IHCantabria a leading international research center and a reliable, independent and innovative service provider for the most demanding marine activities.

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NUMECA International is the world's largest independent flow simulation and optimization software provider and unique in encompassing Lattice Boltzmann and Navier-Stokes technology in one environment. NUMECA offers an extended suite of software covering a broad range of applications for both internal and external flows. Based on the most recent technology, NUMECA software systems are largely recognized for their application-driven features and interface, optimal solutions, multi-physics models, high accuracy, speed and general user friendliness.

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Oil&Gas Basque Industry brings together leading Basque companies that are industrial and technological international references in the Oil&Gas sector. With over 50 organizations and R&D agents in a radius of less than 60 kilometers, the Basque Country is one of the regions in the world with a larger concentration of companies in the Oil&Gas supply chain.

Exhibitors (Continued)

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Simulaciones y Proyectos, SLU is the Iberian leading provider of complete solutions in numerical simulation in the Ocean, Offshore and Arctic engineering field. We provide CFD software solutions to simulate floating and under-water systems behavior such as: hulls, offshore platforms, windmill analysis, ocean energy devices, buildings, etc. We can analyze the behavior of these structures subjected to ocean interaction (waves, currents, wind, etc) to optimize the design of those. Simulaciones y Proyectos, SLU carries the best CFD software in their specific class offering the most affordable solutions in the market for small to big companies in the market. We can face any project all over the world. We like to complement our Clients with high technical solutions.

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+D (pronounced *maasde*) meaning "more development," is an engineering company that focuses on the design, fabrication and commissioning of special machines and test systems for civil engineering, renewable and off-shore applications. WEC subsystems, drill-rig fatigue test benches, wave generation systems, controls and wave generation software, towing tanks and underwater data loggers are amongst our products.

Technical Program





Prof. Carlos Guedes Soares

Professor Carlos Guedes Soares Honoring Symposium on Marine Technology and Ocean Engineering

O MAE 2018 Conference is proud to dedicate a Special Symposium in honor of Professor Carlos Guedes Soares of Instituto Superior Técnico, University of Lisbon, Portugal. He has been contributing in an exceptional way for many years to the scientific development of different topics in the field of Naval Architecture and Ocean Engineering and had a leading role in several areas of research at national and international levels.

Prof. Guedes Soares graduated from the Portuguese Naval Academy in 1971 and completed his master studies in Naval Architecture and Marine Engineering and in Civil Engineering at the Massachusetts Institute of Technology. He later graduated with an Ocean Engineer degree from that same institution in 1976. He received his Ph.D. from the Norwegian Institute of Technology, University of Trondheim, Norway in 1984 and his Doctor of Science from the Technical University of Lisbon in 1991.

Prof. Guedes Soares joined the Technical University of Lisbon as Lecturer in 1980 and, since 2000, he is Professor and Coordinator of the Naval Architecture and Marine Engineering area at Instituto Superior Técnico, University of Lisbon. He is also Coordinator of the postgraduate, Master and Doctoral Degrees in Naval Architecture and Marine Engineering. Since 1994, he is the Scientific Coordinator of the Center for Marine Technology and Ocean Engineering (CENTEC) of Instituto Superior Técnico, University of Lisbon.

Prof. Guedes Soares has performed a wide and diversified set of international functions including: President of the International Maritime Association of the Mediterranean

(IMAM) during the period 2005 to 2011; Founding Member, Secretary, Vice-President and President of the European Safety and Reliability Association (ESRA) during the period 1987 to 2004; and Chairman of the International Ship and Offshore Structures Congress during the period 2012 to 2015. Prof. Guedes Soares has supervised 35 postdoctoral researchers, 45 PhD students and 74 Masters students and is currently supervising 11 postdoctoral researchers and 12 PhD students.

Prof. Guedes Soares has coordinated a large number of national and international research projects focused on the marine environment (16 projects), ship dynamics and hydrodynamics (19 projects), marine structures (18 projects) and safety, reliability and maintenance (6 projects). He has also participated in several other national and international projects dealing with the marine environment (10 projects), ship dynamics and hydrodynamics (20 projects), marine structures (27 projects), maritime transportation (19 projects) and safety, reliability and maintenance (25 projects). Prof. Guedes Soares has co-authored about 700 journal papers and 1200 book chapters and conference papers, in addition to being Co-editor of about 30 books.

Sponsored by CoreMarine





Prof. Bernard Molin

Professor Bernard Molin Honoring Symposium on Marine and Offshore Hydrodynamics

OMAE 2018 is proud to dedicate an Honoring Symposium on Marine and Offshore Hydrodynamics to Professor Bernard Molin from the École Centrale Marseille/IRPHE.

Prof. Molin graduated from the École Polytechnique of Paris in 1974, obtained his Master of Science in Naval Architecture from University of California – Berkeley in 1975, and his Doctor of Engineering from ENSM Nantes in 1981. He was awarded the ‘Habilitation à Diriger les Recherches’ by Aix-Marseille University in 1996. Prof. Molin was a research engineer at Institut Français du Pétrole (IFP) from 1975 to 1994. He has been a professor at the École Centrale Marseille/IRPHE since 1994.

Prof. Molin’s research activities have been mainly concerned with nonlinear hydrodynamics (drift forces, slow drift motion, high frequency loads and response), and development of computer models for the French offshore industry. Recent

involvement has included hydrodynamics of perforated structures, Vortex Induced Vibrations, slamming, moon-pool resonances, hydroelastic responses, sloshing in tanks and motion coupling, third-order run-up effects and slow-drift excitation. Prof. Molin was the 22nd Georg Weinblum Memorial Lecturer (1999–2000).

Prof. Molin has authored over 150 journal and conference papers. He is the author of one book entitled ‘Hydrodynamique des Structures Offshore’, published in French and in Chinese.

Sponsored by Bureau Veritas



Afternoon Lecture Series



Monday, June 18
17:45 – 18:30
Location: Londres

Prospects and Challenges in Arctic and Ice Technology

Dr. Walter Kuehnlein,
 Managing Director, sea2ice Ltd & Co. KG

Dr. Walter Kuehnlein

To have success in realizing new projects in Arctic or ice-covered areas, not only the operational and technical aspects of a project, but also the social, physiological and political sides need to be considered. This means that, prior to such a project being defined, all aspects need be heard, collected and included in its development.

Ambitious and challenging offshore installations in harsh environments have to be designed and completely optimized from an operational point of view, taking into consideration the full range of determining factors, such as environmental sensitivity, operational aspects and costs, technical possibilities, investment requirements and lifecycle. Each project has to be approached with a tailor-made solution, as it is not possible to copy a project from one location to another, even if the defining parameters are quite similar. That being said, an existing project might be a good start for developing a new solution specific to that project.

Concerning the technical aspects of the project, at minimum the following aspects must be evaluated:

- Environmental protection and cleanup premises
- Year-round operations
- Year-round evacuation
- Long periods without supplies
- Extreme ice loads
- Ice management
- Dynamic positioning
- Disconnectable solution versus non-disconnectable solution (this is quite different compared to open waters)

Dr. Walter L. Kuehnlein is Managing Director and founder of the consultancy company sea2ice, focused on operational and design related aspects of offshore structures and systems in harsh environments, especially in ice.

Since 1997, he has been involved in the first drilling project in the North Caspian Sea, where he worked as Engineering and Project Manager in the US, Russia and Kazakhstan and today as adviser. From 2001 until 2009, he was the Director at the Hamburg Ship Model Basin (HSVA) and was responsible for Ice & Offshore.

Dr. Kuehnlein is Chairman of the Board of Directors of the German Association for Marine Technology (GMT), Symposium Coordinator for Arctic Technology of the OMAE Conferences and was chairman of several Arctic conferences including ATC 2016.

Furthermore, he is a member of the German Offshore Committee of DNV-GL, “advisor offshore” for the magazine Ship&Offshore and lecturing on “Ice Engineering” at the Hamburg University of Technology.

Dr. Kuehnlein graduated in Civil & Ocean Engineering and received his Ph.D. in Ocean Engineering at the Berlin University of Technology, Germany.



Prof. Kim Vandiver

Tuesday, June 19
17:45 – 18:30
Location: Londres

New Insights on the Vortex-induced Vibrations of Long Flexible Cylinders

Dr. Kim Vandiver, *Professor of Mechanical and Ocean Engineering, Dean for Undergraduate Research, Director, Office of Experiential Learning, Massachusetts Institute of Technology*

At present, there are no dimensionless damping parameters that are able to quantify the global VIV (vortex-induced vibration) response of flexible cylinders on a spectrum of lightly to heavily damped systems. This presentation addresses how structural, hydrodynamic and radiation damping regulate the VIV of the entire structure. Global behavior may vary from full-length standing waves to traveling waves on an infinite cylinder. Structural damping rules the standing wave case, while radiation damping regulates VIV response on very long cylinders. A single scalar equation is used to express the balance of power flowing through the structure. Under steady state conditions net power flow must be zero, which directly leads to two new dimensionless damping parameters. The first reveals when radiation damping controls the response and the second reveals how the global VIV behavior may be represented on a spectrum of lightly to strongly damped systems. An important contribution is the definition of a single metric of response amplitude, which may be used to quantify the global VIV response of all slender structures excited by VIV. Data from experiments and numerical simulations are presented to support the conclusions.

Professor J. Kim Vandiver is MIT’s Dean for Undergraduate Research and Director of the Edgerton Center, which he founded 26 years ago to provide students with resources for pursuing their own designs and inventions. The Center supports numerous student teams in competitions for building rockets, robots and solar cars. He has been honored as an MIT MacVicar Fellow for excellence in teaching. Prof. Vandiver joined the Faculty of the Department of Ocean Engineering in 1975 and is now Professor of Mechanical and Ocean Engineering. His research focuses on

the dynamics of offshore structures and flow-induced vibration. SHEAR7, a program written by Prof. Vandiver and his students, is an industry standard, which is used for the prediction of the fatigue life of drilling and production risers, exposed to vortex-induced vibration. He teaches dynamics and mechanical vibration at the graduate and undergraduate level. In 2005, he was awarded the Offshore Technology Conference Distinguished Achievement Award for Individuals.

Prof. Vandiver received his Bachelor's degree in Engineering in 1968 from Harvey Mudd College of Science and Engineering, his Master's degree in Ocean Engineering from MIT in 1969 and a Ph.D. in Oceanographic Engineering from the MIT and Woods Hole Oceanographic Institution Joint Program in 1975. For fun, he volunteers as a certified flight instructor for gliders.



Prof. Johannes Pinkster

Wednesday, June 20
17:45 – 18:30
Location: Londres

Some Recent Developments in 3-d Wave Diffraction Methods: Applications and Numerical Aspects

Dr. Johannes Pinkster, Professor Emeritus of Ship Hydromechanics, Delft University of Technology Consultant, Pinkster Marine Hydrodynamics (PMH bv)

3-d wave diffraction methods are applied to complex, multi-body, multi-domain problems involving large numbers of panels that describe hull forms and demand ever increasing computing

power. In such cases, larger engineering firms apply clusters of computers or some form of mainframe. For more modest means such as desktop units, comparatively long waiting times may occur when carrying out such computations. In recent years, high-performance computing has been carried out using Graphical Processing Units (GPU), which can have several thousand computing cores.

In order to investigate the strengths and weaknesses of these massively parallel units for solving 3-d diffraction problems, the application of a GPU processor in the form of a plug-in card for a desktop computer is being discussed. Results achieved to date point to a significant speed-up of such computations. Results will be shown on computation times using the same code run on a CPU and on a GPU.

Examples will include results of multi-body and multi-domain computation, which demonstrate the types of problems that can benefit from such options in 3-d diffraction computations. Where appropriate, results of computations and model tests are compared.

Professor Johannes Pinkster attended Higher Technical College and Delft University of Technology, where he received his BSc and MSc in Naval Architecture. In 1980, he obtained his PhD in Ocean Engineering from the Delft University of Technology. Prof. Pinkster was the Project Manager for the Marin Wageningen offshore project from 1970 to 1990. Afterwards, he became a professor of Ship Hydromechanics at Delft University of Technology until 2006. He began working as a consultant for Pinkster Marine Hydrodynamics in 2004 and is still there today. Prof. Pinkster is currently interested in the development of a CPU/GPU-based frequency-domain 3-d diffraction code with multi-domain and multi-body capability. He also is involved in engineering support in the field of passing ship problems.



Saturday, June 16

Time	Title	Location
09:00 – 17:00	Short Course WEC Design Practices and Tools	Dusseldorf
09:00 – 17:30	Short Course Dynamics and Vibrations in Offshore Structures	Munich
17:00 – 19:00	Outreach Team Building Exercise	Dusseldorf
19:00 onwards	Outreach Welcome Dinner	Off-site



Dr. Ryan Coe

Short Course
WEC Design Practices and Tools
09:00 – 17:00
Location: Dusseldorf

Instructors:
Dr. Ryan Coe, *Senior Research Engineer, Sandia National Laboratories*
Dr. Yi-Hsiang Yu, *Senior Research Scientist, National Renewable Energy Laboratory*
Kelley Ruehl, *Senior Research Engineer, Sandia National Laboratories*



Dr. Yi-Hsiang Yu



Kelley Ruehl

While similar in many ways to other ocean systems, wave energy converters (WECs) pose a number of novel design challenges. This course reviews several considerations related to design and operation of wave energy converters and demonstrates a series of design tools and methods. Fundamentals of hydrodynamics, power take-off (PTO) systems, and implementation of controls for WECs are presented and the complete WEC system will be modeled from wave to wire. Best practices for designing experiments and performing system identification to obtain numerical models for WECs will also be discussed. The course also covers background and practical considerations for WEC design optimization as well as design load analysis for WEC system and components.



Dr. Junbo Jia

Short Course
Dynamics and Vibrations in Offshore Structures
09:00 – 17:30
Location: Munich

Instructors:
Dr. Junbo Jia, *Engineering Expert, Aker Solutions*



Prof. Bernt Johan Leira

Dr. Bernt Johan Leira, *Professor, Department of Marine Technology, Norwegian University of Science and Technology*

An understanding of the principles of structural dynamics and vibrations is important for assuring system integrity and operational functionality in different engineering areas.

However, practical problems regarding dynamics are, in many cases, handled without success, despite large expenditures of investment. It is essential in approaching dynamic analysis and design that one develops an “intuition” to solve the relevant problems at hand; both academic knowhow and professional experience play equally important roles in developing such intuition.

To meet the objectives above, this course aims to address a wide range of topics in the field of offshore structures, starting from fundamentals and moving on to relevant and practical engineering challenges and solutions. Topics covered will include: (i) engineering failures due to inappropriate accounting of dynamics; (ii) Newtonian dynamics and stochastic dynamics; (iii) nonlinear dynamics; (iv) characterizing environmental loadings and responses; (v) dynamics in assessing different limit states (extreme, fatigue, etc.); and (vi) vibration mitigation measures. Special emphasis is placed on engineering applications that utilize state-of-the-art knowledge, the finite element method, relevant codes, probabilistic methods, and recommended practices.

Sunday, June 17

Time	Title	Location
08:30 – 17:00	Outreach Welcome & Introductions plus Industry Presentations	Estrasburgo
09:00 – 17:00	Short Course Numerical and Experimental Dynamic Analysis of Offshore Wind Turbines	Frankfurt
19:00 – 20:30	Exhibition	Venecia/Milán/ Roma
19:00 – 20:30	Welcome Reception	Venecia/Milán/ Roma

order radiation-diffraction and Morison-type models) load calculation are presented. The course addresses theoretical background and important practical considerations for structural response analysis combining these load components and wind turbine control for ULS and FLS design check. A review of the state-of-the-art and challenges in experimental campaigns related to wind, wave and ice loading for fixed and floating offshore wind turbines is also provided.



Dr. Erin Bachynski

Short Course

Numerical and Experimental Dynamic Analysis of Offshore Wind Turbines

09:00 – 17:00

Location: Frankfurt

Instructor: *Dr. Erin Bachynski, Associate Professor, Norwegian University of Science and Technology*

This course reviews several considerations related to design and operation of offshore wind turbines. Fundamental concepts in aerodynamic (with focus on blade element/momentum theory) and hydrodynamic (with focus on first and second



Welcome Reception

19:00 – 20:30

Location: Venecia / Milán / Roma

Welcome Reception sponsored by Repsol



See Social Events, pg. 14 for more details.



Monday, June 18

MONDAY

Time	Title	Location
08:30 – 10:00	Opening Ceremony and Keynote Plenary One and Awards Presentations	Londres/Bristol/Oxford
10:00 – 19:30	Exhibition open	Venecia/Milán/Roma
10:00 – 10:30	Refreshment Break	Venecia/Milán/Roma
10:30 – 12:00	Keynote Plenaries Two and Three and OMAE 2019 Presentation	Londres/Bristol/Oxford
12:00 – 13:30	Opening Lunch	Buffet Madrid/ France-Madrid Gallery/ Lyon/Toulouse
13:30 – 15:00	Concurrent Sessions	See pages 30–34 for session titles, authors and locations
15:00 – 15:30	Refreshment Break	Venecia/Milán/Roma
15:30 – 17:30	Concurrent Sessions	See pages 34–39 for session titles, authors and locations
17:45 – 18:30	Afternoon Lecture Series	Londres
18:30 – 19:30	Afternoon Drinks	Venecia/Milán/Roma

OPENING CEREMONY AND KEYNOTE PLENARIES

08:30 – 10:00

Location: Londres / Bristol / Oxford

Opening Ceremony

Dr. Antonio Souto-Iglesias, *Conference Chair, OMAE 2018*

Dr. Raúl Guanche García, *Conference Chair, OMAE 2018*

Dr. Francisco Huera-Huarte, *Conference Chair, OMAE 2018*

Dr. Solomon Yim, *Technical Program Chair, OMAE 2018*

Prof. Krish Thiagarajan Sharman, *OOAE Division Chair*

Julio Gómez-Pomar, *Secretary of State for Public Works, Transport and Infrastructure*



Dr. Antonio Souto-Iglesias



Dr. Raúl Guanche García



Dr. Francisco Huera-Huarte



Dr. Solomon Yim



Prof. Krish Thiagarajan Sharman



Julio Gomez-Pomar



Héctor Américo González Gómez

Keynote Plenary One

Reinventing Oil&Gas

Héctor Américo González Gómez, *Executive Director Technical Development & HSE, Repsol*

The Oil&Gas sector has faced another period of low commodity prices since 2014 after a sustained period of high prices that promoted growth and led to huge cost escalation. Companies have

responded vigorously with capital reductions and operational savings. Recent price rebound is making analysts and investors start questioning the right strategies to balance financial discipline, production sustainability and growth.

None of this is new to our sector. Historically, price volatility has been common place for Oil&Gas markets. But for companies, being able to adapt to such volatility is as important as taking a look at the long-term fundamentals of our business and shaping their strategy accordingly.

Supply-demand pattern and technology evolution suggest that a great deal of conventional and unconventional oil can be economically produced at \$50 to \$70 per barrel, which is significantly lower than just few years ago. Producing countries may need oil prices to be on the high side of that range to sustain their budgets. In the longer term, oil can be partially displaced at least in developed countries by other sources of energy, while natural gas is bound to play a key role as a low carbon source. However, whether and when there will be a peak oil demand is difficult to anticipate.

In this energy context, Repsol is positioning itself as an integrated, gas-biased Oil&Gas company with the right upstream / downstream balance, an upstream portfolio with lean and flexible capex, a top-tier downstream and a company that is open to explore and enter new energy businesses.

Héctor Américo González Gómez is an experienced professional with 30 years in the Oil&Gas business. He is an electrical engineer and has completed Postgraduate studies in Geophysics and an MBA. He is currently the Executive Director Technical Development & HSE for the Repsol E&P business. Formerly, he was CEO of Repsol Sinopec Brasil.

During his career, Mr. Gómez has worked as Regional Director and Business Unit Director managing operated assets. Also, he was appointed General Manager of Compañía Mega S.A., a midstream company that separated ethane, propane, butane and gasoline from natural gas to supply the petrochemical industry. In addition, he has experience in corporate areas such as Planning and Control and Shareholder Relations.

Awards

The Subrata Chakrabarti Young Professional Award recipient and the OMAE 2017 Best Paper Awards recipients will be recognized. See page 10 for more details.

REFRESHMENT BREAK

10:00 – 10:30

Location: Venecia / Milán / Roma

Refreshment Break sponsored by Tubacex Group



OPENING CEREMONIES AND KEYNOTE PLENARIES (Continued)

10:30 – 12:00

Location: Londres / Bristol / Oxford

Keynote Plenary Two

Decommissioning in the Norwegian North Sea – Turning Liabilities into Opportunities



Vidar Nedrebø

Vidar Nedrebø, *Managing Director, Repsol Norge AS*

As a relatively mature oil and gas basin, the North Sea has already seen a number of offshore facilities, pipelines and structures being decommissioned. Normally, this requires plugging and abandonment of wells, removal of pipelines and infrastructure for scrapping, leaving only a clean seabed behind.

While the main drivers for the infrastructure owners in the decommissioning phase previously have been cost and risk reduction, changes to the market situation and the development of new technology have led Repsol to think differently when it comes to decommissioning projects within its North Sea portfolio.

The single-lift removal of the Yme production facility and the re-use of the Maersk Inspirer following the decommissioning of the Volve field were key enablers for turning the Yme field from a decommissioning asset to a re-development project.

The high-grade steel and well maintained Gyda platform to be decommissioned in the period 2021 to 2023 offers an alternative, cost-efficient development model for multiple discoveries in North West Europe, either as a single lift or through a modular removal, refurbishment and re-installation of topsides and jacket. Life extension could be 10 to 20 years.

Repsol believes that re-use of existing infrastructure through decommissioning, refurbishment and re-commissioning may provide a realistic development alternative for marginal discoveries which would otherwise be left stranded.

Vidar Nedrebø graduated as a lawyer from the University of Tromsø, Norway, in 1992 and also holds a degree in Business Administration from the Texas A&M University in College Station, Texas, USA. He has been working in a number of legal, commercial and business development managerial positions with Amoco, BP, Paladin and Talisman since his graduation, and has held the position as Managing Director of Repsol Norge AS since 2015.



Marcos Bergua

Keynote Plenary Three

Mooring Systems, Current and Future Market Overview

Marcos Bergua Toledo, *Commercial Director VSSL & VCSA, VICINAY MARINE SLs*

‘Mooring systems’ and ‘VICINAY MARINE’ – these words have been used interchangeably for more than 25 years. It is impossible to follow the improvements in mooring technology, design and market research without permanent references to VICINAY MARINE’s chief milestones. Mr. Bergua will briefly discuss some of these milestones in order to focus on the current market situation after the two year slow-down. He will highlight how a company like VICINAY MARINE dealt with the slow-down and how it is facing a market recovery in Oil&Gas by looking at the promising new market in moorings for renewable energies.

Born in Santander, Spain, Mr. Bergua is a Master Engineer in Telecommunications, obtaining his degree at the University of Vigo, and holds a MBA from the ESEUNE Business School in Bilbao. He started his professional activity in the telecommunication industry working for several companies such as LANDATA INGENIERÍA and AMPER as Key Account Manager. In 2007, he was appointed to the position of General Director of Industry in the Cantabria Autonomous Government. In the following four years, he was in charge of the regulation and development of Spain’s regional industry, mining and energy sectors. He has had the opportunity to deal with wind power energy development together with the first initiatives of the tight oil research in Spain. In 2011, Mr. Bergua joined VICINAY MARINE SL as the Commercial Director for Vicinay Sestao and Vicinay Cadenas which are the two factories owned by Vicinay Marine in Spain.



Prof. Atilla Incecik

OMAE 2019 Presentation

Professor Atilla Incecik, *Conference Chair, OMAE 2019*

Opening Lunch

12:00 – 13:30

Location: Buffet Madrid / France-Madrid Gallery / Lyon / Toulouse

MONDAY

CONCURRENT SESSIONS

13:30 – 15:00

Offshore Technology

1-1-3 Installation, Operation and Integrity Assessment

Monday June 18 Room: **Bonn** | 13:30 – 15:00

Session Chair: Marc Cahay, TechnipFMC, France

Optimal Online Configuration and Load-Sharing in a Highly Redundant Electric Power System of an Offshore Vessel OMAE2018-77955

Laxminarayan Thorat, Roger Skjetne
NTNU, Trondheim, Norway

Comparison of Fuel Consumption on a Hybrid Marine Power Plant with Low-Power Versus High-power Engines OMAE2018-77959

Zhenying Wu, Laxminarayan Thorat, Roger Skjetne
NTNU, Trondheim, Norway

Integrity Assessment and Control of Offshore Topside Piping: an Expert System based Approach OMAE2018-78267

R.M. Chandima Ratnayake
University of Stavanger, Stavanger, Norway

Variance of Fatigue Damage during Transportation OMAE2018-77968

Limin Yang, Tormod Bøe, Erik Falkenberg, Florus Korbijn
DNV GL, Høvik, Norway

Offshore Technology

1-4-1 Design Optimization, Risk Analysis and Mitigation

Monday June 18 Room: **Colonia** | 13:30 – 15:00

Session Chair: M A Hannan, Newcastle University, UK (Singapore Unit), Singapore

Session Co-Chair: Marcelo Ramos Martins, University of Sao Paulo, Brazil

Drilling Riser Disconnection Challenges in Ultra-Deep Water OMAE2018-77115

Alexandre Diezel, Germain Venero, Victor Gomes, Leandro Muniz, Rafael Fachini, Hugues Corrigan
Wood Group, Rio de Janeiro, RJ, Brazil

A Comparison of Response-based Analysis and Environmental Contour Methods for FPSO Green Water Assessment OMAE2018-77841

Shuo Wang¹ Xin Wang¹ Wai Lok Woo²
1. Newcastle University, Newcastle upon Tyne, United Kingdom; 2. Newcastle upon Tyne, Newcastle, United Kingdom

Lifting Wind Turbine Components from a Floating Vessel: a Review on Current Solutions and Open Problems OMAE2018-78659

Andreas Haselsteiner¹ Jan-Hendrik Ohlendorf¹ Stephan Oelker¹ Lena Ströer¹ Klaus-Dieter Thoben¹ Katharina Wiedemann² Emmanuel De Ridder³ Sven Lehmann⁴
1. University of Bremen, Bremen, Germany; 2. Amasus Offshore BV, GD Delfzijl, Netherlands; 3. Jan de Nul NV, Hofstade-Aalst, Belgium; 4. Servnion GmbH, Hamburg, Germany

A Cost-Driven, High-Level Optimization of OSV Operations in the Flemish Pass OMAE2018-77640

Philippe Gauthier, David Molyneux
Memorial University of Newfoundland, St. John's, NL, Canada

Structures, Safety and Reliability

2-12-4 Structural Analysis and Optimization IV

Monday June 18 Room: **Munich** | 13:30 – 15:00

Session Chair: Jonas W. Ringsberg, Chalmers University of Technology, Gothenburg, Sweden

Session Co-Chair: Beatriz Alonso Castro, Repsol NORWAY AS (RNAS), Stavanger, Norway

Numerical Optimization of Hybrid Panel Joints by Mixed Adhesive/Welded Method on Shipbuilding OMAE2018-77028

Mario de Vicente
Polytechnic University of Madrid, Madrid, Spain

Topology Optimization of Primary Support Members in Cargo Tank Region for Oil Tankers OMAE2018-77746

Xiaoxi Shen, Guoqing Feng, Huilong Ren, Huiifen Xu, Qi Chang
Harbin Engineering University, Harbin, China

Research on the Velocity Attenuation Characteristics of the Fragments during High-speed Water Entry OMAE2018-78665

Ya Zhang, Xiaobin Li, Siyu Li
Wuhan University of Technology, Wuhan, China

A Unified Approach for Estimating of the Drag Coefficient in Offshore Structures in Presence of Bio-colonization OMAE2018-78757

Arash Bakhtiari¹ Hamed Ameryoun² Franck Schoefs¹
1. University of Nantes, Nantes, France; 2. CAPACITES, Nantes, France

Structures, Safety and Reliability

2-13-1 Risk Analysis and Management I

Monday June 18 Room: **Dusseldorf** | 13:30 – 15:00

Session Chair: Ângelo Teixeira, Centre for Marine Technology and Ocean Engineering (CENTEC), Instituto Superior Técnico, Portugal

Session Co-Chair: YeongAe Heo, Case Western Reserve University, Cleveland, OH, United States

Development of Reliable Condition Monitoring Technology for Maritime using FMECA and Bayesian Network Modeling OMAE2018-77009

Shan Guan¹ Knut Erik Knutsen² Øystein Åsheim Alnes²
1. DNV GL, Dublin, OH, USA; 2. DNV GL, Oslo, Norway

Reliability Simulation for Offshore Structures based on Fault Tree Analysis OMAE2018-77010

Yongjin Guo, Hongdong Wang, Hong Yi
Shanghai Jiao Tong University, Shanghai, China

Risk Analysis for FPSO Vapor Cloud Explosion Considering Domino Effect OMAE2018-78616

Mian Wang, Liping Sun, Mingxin Li
Harbin Engineering University, Harbin, China

A Casualty Prediction Model for Ship Cabin Fire with Bayesian Network OMAE2018-78641

Likang Zong, Bing Wu, Yang Wang
Wuhan University of Technology, Wuhan, China

Dynamic Risk Assessment of Decommissioning Offshore Jacket Structures OMAE2018-78635

Ahmed Babaleye¹ Rafet E. Kurt¹ Mahdi Khorasanchi²
1. University of Strathclyde, Glasgow, United Kingdom; 2. Sharif University of Technology, Tehran, Iran

Materials Technology

3-2-1 Fatigue Performance I

Monday June 18 Room: **Stuttgart** | 13:30 – 15:00

Session Chair: Carol Johnston, TWI Ltd, United Kingdom

Session Co-Chair: Koji Gotoh, Kyushu University, Japan

Development of a Welding Sequence Optimized for the Fatigue Resistance of Tubular Joints with an Original Representative Welded Sample OMAE2018-78024

Philippe Thibaux, Eric Van Pottelberg
OCAS NV, Gent, Belgium

Fatigue Strength of Heavy Wall Line Pipe Girth Weld for J-lay Installation OMAE2018-78056

Israel Marines-Garcia¹ Philippe Darcis² Mauricio Pelcastre³ Enrique Garcia⁴
Guangqiang Yang⁴ Desmond Bourgeois⁴ Tyler Visco⁴
1. Tenaris TTSA, Veracruz, VER, Mexico; 2. Dalmine S.p.A., Dalmine, Italy;
3. TenarisTamsa, Veracruz, VER, Mexico; 4. Exxon Mobil Company, Spring, TX, USA

The Rationale for Update of s-n Curves for Single Sided Girth Welds for Risers and Pipelines in DNV GL RP C-203 based on Fatigue Performance of more than 1700 Full Scale Fatigue Test Results OMAE2018-78408

Agnes Marie Horn¹ Inge Lotsberg² Oddvin Orjaseater³
1. DNV GL, Oslo, Norway; 2. DNV GL, Høvik, Norway; 3. NTNU, Trondheim, Norway

High Cycle Fatigue Damage Evaluation of Steel Pipelines based on Microhardness Changes during Cyclic Loads – Part II OMAE2018-78752

Geovana Drumond¹ Bianca Pinheiro¹ Ilson Pasqualino¹ Francine Roudet² Didier Chicot²
1. COPPE/UF RJ, Rio de Janeiro, RJ, Brazil; 2. Université Lille 1, Villeneuve d'Ascq, France

Pipelines, Risers, and Subsea Systems

4-1-1 Flexible Pipes I

Monday June 18 Room: **Frankfurt** | 13:30 – 15:00

Session Chair: Svein Saevik, NTNU, Norway

Session Co-Chair: Zhimin Tan, BHGE, Wellstream, USA

Multi-objective Optimization Design of Flexible Risers based on Bi-Scale Response Surface Models OMAE2018-77947

Zhixun Yang¹ Jun Yan¹ Svein Saevik² Luqing Zhen¹ Naiquan Ye³ Jinlong Chen¹ Qianjin Yue¹
1. Dalian University of Technology, Dalian, China;
2. NTNU, Trondheim, Norway; 3. SINTEF Ocean, Trondheim, Norway

Alternative Methodologies for Subsea Flexible Strength Analysis OMAE2018-77162

Anskey Miranda¹ Fred Turner¹ Nigel Barltrop²
1. TechnipFMC, St. John's, NL, Canada; 2. University of Strathclyde, Glasgow, United Kingdom

Study on the Failure Mechanism of Flexible Pipes under Large Torsion Considering the Layer Interaction OMAE2018-77710

Shanghua Wu, Zhixun Yang, Jinlong Chen, Qingzhen Lu, Qianjin Yue, Jun Yan, Bo Gao
Dalian University of Technology, Dalian, China

Qualification of Sealing System for Flexible Pipes using a Self-energized Gasket OMAE2018-77183

Jesper Ries, Martin Halsteen, Christian Wang
NOV Flexibles, Brøndby, Denmark

Pipelines, Risers, and Subsea Systems

4-3-1 Mechanics I

Monday June 18 Room: **Berlin** | 13:30 – 15:00

Session Chair: Ilson Pasqualino, COPPE/UF RJ, Brazil

Session Co-Chair: Yong Bai, Zhejiang University, China

Collapse of Tubes under Combined Bending and Axial Compression Loads OMAE2018-77458

Shan Jin¹ Shuai Yuan² Yong Bai³
1. Zhejiang University, College of Civil Eng.&Arch., Hangzhou, China; 2. Zhejiang University, Hangzhou, China; 3. Zhejiang University, Zhejiang, China

Numerical Evaluation of Mechanical Property Change and Collapse Strength of ERW Pipes Considering Manufacturing Process OMAE2018-77729

Seong-Wook Han¹ Soo-Chang Kang² Jiwoon Yi³ Ho-Kyung Kim¹
1. Seoul National University, Seoul, Korea; 2. POSCO, Incheon, Korea;
3. Korean Institute of Bridge and Structural Engineers, Seoul, Korea

Probabilistic Wall Thickness Verification for the TurkStream Pipeline OMAE2018-78262

Duane DeGeer¹ Ping Liu² Arjen Meijer² Erich Jurdik³ Jay Chaudhuri³ Shirley Zhou²
1. INTECSEA, Houston, TX, USA; 2. INTECSEA, Delft, Netherlands; 3. South Stream Transport BV, Amsterdam, Netherlands

TurkStream Collapse Test Program OMAE2018-78454

Chris Timms¹ Doug Swanek¹ Duane DeGeer² Arjen Meijer³
Ping Liu³ Erich Jurdik⁴ Jay Chaudhuri⁴
1. C-FER Technologies, Edmonton, AB, Canada; 2. INTECSEA, Houston, TX, USA;
3. INTECSEA, Delft, Netherlands; 4. South Stream Transport BV, Amsterdam, Netherlands

Ocean Engineering

6-3-1 Modeling Techniques

Monday June 18 Room: **Burdeos** | 13:30 – 15:00

Session Chair: P Krishnankutty, Indian Institute of Technology Madras, India

Session Co-Chair: David Molyneux, Memorial University of Newfoundland, Canada

Development of Water Tank Test Devise for Deep-Water Mooring OMAE2018-77090

Go Oishi¹ Hiroshi Yamaguchi¹ Kiyoshi Shimada¹ Kouichi Kayajima²
1. Akishima Laboratories (Mitsui Zosen) Inc., Akishima, Tokyo, Japan; 2. Mitsui Engineering & Shipbuilding Co., Ltd., Chuo-ku, Tokyo, Japan

Empirical Truncation Design of Deepwater Mooring System using Supervised Learning Method OMAE2018-77718

Handi Wei¹ Longfei Xiao² Xin Li² Yufeng Kou²
1. State Key Laboratory of Ocean Engineering, Shanghai Jiao Tong University, Shanghai, China; 2. Shanghai Jiao Tong University, Shanghai, China

A Segmented Ship Model Experimental Research on Hydroelastic Effect of a Large Ship in Wave OMAE2018-77879

Ying Tang, Huilong Ren, Shili Sun, Kai Jin, Zheng Yang
Harbin Engineering University, Harbin, China

Ocean Engineering

6-15-1 Session I Development Methodologies and Novel Designs

Monday June 18

Room: **Marsella** | 13:30 – 15:00

Session Chair: José-Fernán Martínez-Ortega, Universidad Politécnica de Madrid, Spain

Mastering High Product Variety of an Underwater Vehicle Class in the Concept Design Stage OMAE2018-78020

Willem Hendrik Wehner¹ Nicolas Richter¹ Pia-Maria Haselberger¹

Marc Schiemann¹ Sebastian Ritz² Matthias Golz² Florin Boeck²

1. thyssenkrupp Marine Systems GmbH, Kiel, Germany; 2. Berlin Institute of Technology, Berlin, Germany

Canvas as a Design Tool of an Autonomous Operation for the Detection of a Waste Water Plume OMAE2018-78773

Marialena Vagia

SINTEF Digital, Trondheim, Norway

User Interface Design Guidelines for Marine Autonomous Operations Involving a Large Number of Actors, Devices and Sensors OMAE2018-78774

Hanna Poranen¹ Giancarlo Marafioti² Gorm Johansen² Eivind Sæter¹

1. Inventas Trondheim AS, Trondheim, Norway; 2. SINTEF Digital, Mathematics and Cybernetics, Trondheim, Norway

CFD and FSI

8-8-1 CFD and FSI Opening Session and Keynote on Digitalization and Machine Learning

Monday June 18

Room: **Dresden** | 13:30 – 15:00

Session Chair: Yiannis Constantinides, Chevron, USA

Session Co-Chair: Owen H. Oakley, Jr, Retired, USA

Digital Twin Marine Riser (DigitMaR) OMAE2018-78781

Michael Triantafyllou, Massachusetts Institute of Technology, Cambridge, MA, USA

Integration of CFD with Data Science for Offshore Engineering Applications OMAE2018-78782

Rajeev Kumar Jaiman, National University of Singapore, Singapore, Singapore

Ocean Renewable Energy

9-2-1 Verification and Validation

Monday June 18

Room: **Estrasburgo** | 13:30 – 15:00

Session Chair: Amy Robertson, NREL, USA

Session Co-Chair: Paul Schünemann, University of Rostock, Germany

Experimental Measurements of Windfloat 1 Prototype Responses and Comparison with Numerical Model OMAE2018-77057

Christian Cermelli¹ Charlotte Leroux¹ Sandra Díaz Domínguez¹ Antoine Peiffer²

1. Principle Power, Aix-en-Provence, France; 2. Principle Power, Emeryville, CA, USA

Verification of Numerical Offshore Wind Turbine Models based on Full Scale Alpha Ventus Data within OCS Phase III OMAE2018-77589

Wojciech Popko¹ Matthias L. Huhn¹ Amy Robertson² Jason Jonkman² Fabian Wendt³

Kolja Müller⁴ Matthias Kretschmer⁵ Fabian Vorpahl⁶ Torbjørn Ruud Hagen⁷

Christos Galinos⁸ Jean-Baptiste Le Dreff⁹ Philippe Gilbert¹⁰ Bertrand Auriaud¹¹

Francisco Navarro Villora¹² Paul Schünemann¹³ Ilmas Bayati¹⁴ Marco Belloli¹⁵ Sho Oh¹⁶

Yoshitaka Totsuka¹⁷ Jacob Qvist¹⁸ Erin Bachynski¹⁹ Stian H. Sørum¹⁹ Paul E. Thomassen²⁰

Hyun Kyoung Shin²¹ Felipe Vittori²² Josean Galvan²³ Climent Molins²⁴ Paul Bonnet²⁵ Tjeerd van der Zee²⁶ Roger Bergua²⁷ Kai Wang²⁷ Pengcheng Fu²⁸ Jifeng Cai²⁸

1. Fraunhofer Institute for Wind Energy Systems IWES, Bremerhaven, Germany; 2. National Renewable Energy Laboratory, Golden, CO, USA; 3. National Renewable Energy Laboratory, Boulder, CO, USA; 4. University of Stuttgart, Stuttgart, Germany; 5. University of Stuttgart - Stuttgart Wind Energy (SWE), Stuttgart, Germany; 6. Senvion GmbH, Osnabrück, Germany; 7. OWEC Tower AS, Oslo, Norway; 8. Technical University of Denmark - Department of Wind Energy, Roskilde, Denmark; 9. Electricité de France, Recherche et Développement, Palaiseau, France; 10. IFP Energies Nouvelles, Solaize, France; 11. Principia, La Ciotat, France; 12. Siemens Gamesa Renewable Energy, Hamburg, Germany; 13. University of Rostock, Rostock, Germany; 14. Politecnico di Milano Department of Mechanical Engineering, Milano, Italy; 15. Politecnico di Milano, Milano, Italy; 16. ClassNK, Chiyodaku, Japan; 17. Wind Energy Institute of Tokyo Inc., Tokyo, Japan; 18. 4Subsea, Nesbru, Norway; 19. Norwegian University of Science and Technology, Trondheim, Norway; 20. Simis AS, Malm, Norway; 21. University of Ulsan, Ulsan, Korea; 22. CENER, Navarra, Spain; 23. Tecnalia Research & Innovation, Derio, Spain; 24. Universitat Politècnica de Catalunya, Barcelona, Spain; 25. Siemens Industry Software, Cornellà de Llobregat, Spain; 26. Knowledge Centre WMC, AA Wieringerwerf, Netherlands; 27. Envision Energy Limited, Shanghai, China; 28. China General Certification Center, Beijing, China

Comparison Between Experiments and a Multibody Weakly Nonlinear Potential Flow Approach for Modeling of Marine Operations

OMAE2018-77694

Pierre-Yves Guillaume^{1,2} Aurélien Babarit¹ Francois Rongère³

Adrien Combourieu² Mattias Lynch² Pierre Ferrant¹

1. LHEEA Ecole Centrale de Nantes, Nantes, France; 2. INNOSEA, Nantes, France; 3. Ecole centrale de Nantes, Nantes, France

Code Comparison of a NREL-FAST Model of the Levenmouth Wind Turbine with the GH Bladed Commissioning Results OMAE2018-77495

Jordi Serret¹ Carlos Rodriguez² Tahsin Tezdogan³ Tim Stratford⁴ Philipp Thies⁵

1. University of Edinburgh - IDCORE, Edinburgh, Scotland, United Kingdom; 2. ORE Catapult, Blyth, United Kingdom; 3. University of Strathclyde, Glasgow, United Kingdom; 4. University of Edinburgh, Edinburgh, Scotland, United Kingdom; 5. University of Exeter, Exeter, United Kingdom

Ocean Renewable Energy

9-3-1 Heaving and Pitching Wave Energy Converters

Monday June 18

Room: **Paris** | 13:30 – 15:00

Session Chair: Jennifer van Rij, National Renewable Energy Laboratory (NREL), USA

Session Co-Chair: Lance Manuel, University of Texas at Austin, USA

Analytical Formulation of Nonlinear Froude-Krylov Forces for Pitching Point Absorbers OMAE2018-77072

Giuseppe Giorgi¹ John V. Ringwood²

1. Centre for Ocean Energy Research, Maynooth University, Maynooth, Ireland; 2. Maynooth University, Maynooth, Ireland

Energy Extraction of Pontoon-Type Wave Energy Converter

OMAE2018-77089

Zhi Yung Tay¹ Yanji Wei² Antonis I. Vakis²

1. Singapore Institute of Technology, Singapore, SC, Singapore; 2. University of Groningen, Groningen, Netherlands

Influence of a Taut Cable on the Performance of a Point-absorber Wave Energy Converter OMAE2018-77490

Ruoqi Wang, Yanji Wei, Marijn van Rooij, Bayu Jayawardhana, Antonis I. Vakis University of Groningen, Groningen, Netherlands

Numerical Study on the Geometric and Inertial Parameters for Oscillating Wave Surge Converters OMAE2018-77938

Chen-Chou Lin, Yi-Chih Chow, Shai-Yih Tzang, Ching-Yen Chiou, Yu-Yu Huang National Taiwan Ocean University, Keelung, Taiwan

Petroleum Technology

11-5-1 Petroleum Production Systems Design and Operation I

Monday June 18 Room: **Baden Baden** | 13:30 – 15:00

Session Chair: Celso K. Morooka, University of Campinas/
Faculty of Mechanical Engineering/Center for Petroleum Studies, Brazil

Session Co-Chair: Sergio Bordalo, Unicamp - University of Campinas, Brazil

Biosurfactant Versus Commercial Surfactant: Study on Effectiveness for Application in EOR OMAE2018-77017

Livia V. A. de Castilho¹ Ilson Pasqualino² Alan M. Duarte¹ Vinicius de A. Waldow³
Maira P. de Sousa³ Lucy Seldin¹ Denise M. G. Freire¹

1. Federal University of Rio de Janeiro, Rio de Janeiro, RJ, Brazil; 2. COPPE/UFRJ, Rio de Janeiro, RJ, Brazil; 3. CENPES/PDISO/BIO, Rio de Janeiro, RJ, Brazil

Technical and Economical Evaluations of Microemulsion Injection in EOR Tests OMAE2018-78403

Tereza Dantas, Afonso Dantas Neto, Tamyris Costa de Souza, Alef França, Marcos Rodrigues
Federal University of Rio Grande do Norte, Natal, RN, Brazil

Workflow for Oil Recovery Design by Polymer Flooding OMAE2018-78359

Vitor Hugo de Sousa Ferreira, Rosangela B. Z. L. Moreno
University of Campinas, Campinas, SP, Brazil

Use of Integrated Production Modeling to Estimate the Influence of Subsea Manifolds in Reservoir Production Management OMAE2018-78384

Marcelo S. Castro^{1,2} Igor Victorino² João C.V. Hohendorff Filho² Denis J. Schiozer³
1. University of Campinas (Faculty of Mechanical Engineering - Energy Department)
Campinas, SP, Brazil; 2. CEPETRO/University of Campinas, Campinas, SP, Brazil; 3. Faculty of Mechanical Engineering of the State University of Campinas - FEM / UNICAMP, Campinas, SP, Brazil

Petroleum Technology

11-6-1 Well Drilling Fluids and Hydraulics I

Monday June 18 Room: **Potsdam** | 13:30 – 15:00

Session Chair: Arild Saasen, University of Stavanger, Norway

Session Co-Chair: Ergun Kuru, University of Alberta, Canada

The Application of Fuzzy-Ball Drilling Fluid to Deepwater Drilling to Deal with Highly Mineralized Formation Brines and Low Temperature Environment OMAE2018-78518

Panfeng Wei¹ Lihui Zheng¹ Mingzheng Yang² Yuanhang Chen²

1. China University of Petroleum (Beijing), Beijing, China; 2. Louisiana State University, Baton Rouge, LA, USA

Eco-Friendly Drilling Fluid Deflocculant for Drilling High Temperature Well: A Review OMAE2018-78149

Nurul Aimi Ghazali¹ Shigemi Naganawa² Yoshihiro Masuda³

Wan Asma Ibrahim⁴ Noor Fitrah Abu Bakar⁵

1. The University of Tokyo, Tokyo, Japan; 2. Akita University, Akita, Japan; 3. The University of Tokyo, Chiba, Japan; 4. Forest Research Institute Malaysia, Selangor, Malaysia; 5. Universiti Teknologi MARA, Selangor, Malaysia

Dynamic Particle Transport in Horizontal Pipes based on Three-Layer Modeling: Simulation and Experimental Study OMAE2018-77656

Johnny Petersen¹ Milad Khatibi² Rune Wiggo Time² Hardy Siahhaan¹

1. IRIS, Bergen, Norway; 2. University of Stavanger, Stavanger, Norway

Cuttings Bed Removal in Deviated Wells OMAE2018-77832

Jan David Ytrehus¹ Bjornar Lund¹ Ali Taghipour¹ Birgitte Ruud

Kosberg² Knud Richard Gyland³ Luca Carazza⁴ Arild Saasen⁵

1. SINTEF, Trondheim, Norway; 2. SINTEF/NTNU, Trondheim, Norway; 3. MI-SWACO, Sandnes, Norway; 4. AkerBP, Stavanger, Norway; 5. University of Stavanger, Stavanger, Norway

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-1-1 Wave Spectral and Probabilistic Models

Monday June 18 Room: **Bristol** | 13:30 – 15:00

Session Chair: Sonia Ponce de Leon, Universidade de Lisboa, Instituto Superior Técnico, Centre for Marine Technology and Ocean Engineering (CENTEC), Portugal

Session Co-Chair: Gerbrant Van Vledder, Van Vledder Consulting, Netherlands

Open Access Atlas of Global Spectral Wave Conditions based on Partitioning OMAE2018-77230

Jesus Portilla Yandun

Escuela Politecnica Nacional, Quito, Ecuador

A Simple and Robust Method for Calculating Return Periods of Ocean Waves OMAE2018-78729

Ed Mackay, Lars Johanning

University of Exeter, Penryn, United Kingdom

On the Sequence of Large Waves from Field Data OMAE2018-78725

Anita Santoro¹ Felice Arena¹ Carlos Guedes Soares²

1. University "Mediterranea" of Reggio Calabria, Reggio Calabria, Italy; 2. Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

Performance of WAVEWATCH-III and SWAN models in the North Sea OMAE2018-77291

Sonia Ponce de Leon¹ Joao Bettencourt² Gerbrant Van Vledder³ Patrick Doohan⁴

Christopher Higgins⁵ Frederic Dias⁵ Carlos Guedes Soares⁶

1. Universidade de Lisboa, Instituto Superior Técnico, Centre for Marine Technology and Ocean Engineering (CENTEC), Lisboa, Portugal; 2. CNRS, Toulouse, France; 3. Van Vledder Consulting, Overijssel, Netherlands; 4. Imperial College London, London, United Kingdom; 5. University College Dublin, Dublin, Ireland; 6. Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-5-1 Ultimate Strength I

Monday June 18 Room: **Oxford** | 13:30 – 15:00

Session Chair: Jose Gordo, University of Lisbon, Portugal

Session Co-Chair: Jani Romanoff, Aalto University, Finland

Pure Bending Test on a Box Girder with Low Panel's Slenderness OMAE2018-77034

Jose M. Gordo¹ Carlos Guedes Soares²

1. CENTEC/IST, Lisboa, Portugal; 2. Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

Ultimate Strength of Typical Stiffened Panels in Container Ships under Random Non-uniform Corrosion OMAE2018-78286

Jinju Cui, Deyu Wang

Shanghai Jiao Tong University, Shanghai, China

Limit State Analyses in Design Thin-walled Marine Structures – Some Aspects on Length Scales OMAE2018-78304

Jani Romanoff¹ Heikki Remes¹ Petri Varsta² Bruno Reinaldo Goncalves¹
Ingrit Lillemäe-Avi³ Mihkel Korgesaar⁴ Jasmin Jelovica⁵ Sami Liinalampi¹
1. Aalto University, Espoo, Finland; 2. Aalto University, School of Engineering, Espoo, Finland; 3. Meyer Turku Shipyard, Turku, Finland; 4. Aalto University, Helsinki, Finland; 5. University of British Columbia, Vancouver, BC, Canada

Influence of FE Modelling on Ultimate Strength of Y-Shape Stiffened Panels under Axial Compression OMAE2018-78626

Ming Cai Xu¹ Xiaobin Li² Jin Pan² Meng Jia Ren³ Bo Wen Zhang³
1. Huanzong University, Wuhan, China; 2. Wuhan University of Technology, Wuhan, China; 3. Huazhong University of Science and Technology, Wuhan, China

Honoring Symposium for Professor Bernard Molin on Marine and Offshore Hydrodynamics

13-1-1 Wave Body Interaction I

Monday June 18 Room: **Londres** | 13:30 – 15:00

Session Chair: Frederic Dias, University College Dublin, Ireland

Progress in Coupling Potential Wave Models and Two-phase Solvers with the SWENSE Methodology OMAE2018-77466

Zhaobin Li¹ Benjamin Bouscasse¹ Lionel Gentaz² Guillaume Ducrozet² Pierre Ferrant²
1. Ecole Centrale de Nantes, Nantes, France; 2. Ecole Centrale de Nantes, LHEEA Lab. (ECN/CNRS), Nantes, France

Artificial Intelligence Machine Learning in Marine Hydrodynamics OMAE2018-77599

Paul Sclavounos, Yu Ma
Massachusetts Institute of Technology, Cambridge, MA, USA

Nonlinear Wave-body Interaction using a Mixed-Eulerian-Lagrangian Spectral Element Model OMAE2018-77692

Carlos Monteserin¹ Allan P. Engsig-Karup² Claes Gunnar Eskilsson³
1. DTU Compute, Technical University of Denmark, Lyngby, Denmark; 2. Technical University of Denmark, Kgs Lyngby, Denmark; 3. Aalborg University, Aalborg, Denmark

Performance of a Wave-Energy-Converter Array Operating under Model-Predictive Control based on a Convex Formulation OMAE2018-78739

Qian Zhong, Ronald W. Yeung
University of California at Berkeley, Berkeley, CA, USA

REFRESHMENT BREAK

15:00 – 15:30

Location: Venecia / Milán / Roma

CONCURRENT SESSIONS

15:30 – 17:30

Offshore Technology

1-1-4 Spars, FPSOs and Multi-Column Floaters I

Monday June 18 Room: **Bonn** | 15:30 – 17:30

Session Chair: Anil Sablok, TechnipFMC, USA

Research on Hydrostatic Stability Calculation Method for Mobile Offshore Units OMAE2018-77468

Yong Ding, Shunli Cao, Linxin Lan, Mo Chen, Liming Pan
Harbin Engineering University, Harbin, China

Adaptability of the Next Generation Hull-platform “Noah-FPSO Hull” OMAE2018-77453

Shigeru Tanaka, Kotaro Takano, Yasuhiro Sogawa, Ken Nakamura, Tadashi Inoue, Masaharu Mori, Mikito Otonari
Mitsui Engineering & Shipbuilding Co., Ltd., Tokyo, Japan

Out-of-plane Bending Moment-Induced Hotspot Stress Evaluation using Advanced Numerical Technique OMAE2018-78679

Jae-bin Lee, Weoncheol Koo, Joonmo Choung
Inha University, Incheon, Korea

Integrated Decommissioning of a Pentagon Shaped Production Semisubmersible in the UK: A Unique Challenge OMAE2018-77831

Luis F. Batalla Toro¹ Alfredo Salcines Tudela¹ Simon Reid² Duncan Graham²
1. Repsol, Aberdeen, United Kingdom; 2. Repsol Sinopec Resources UK, Aberdeen, United Kingdom

Direct Time Domain Life Cycle Loading Analysis on a Floating Platform OMAE2018-78142

Ho-Joon Lim¹ Manoj Jegannathan¹ Bonjun Koo² Johyun Kyoung¹ Eleni Beyko¹
1. TechnipFMC, Houston, TX, USA; 2. TechnipFMC, Katy, TX, USA

Offshore Technology

1-4-2 Simulation of Floaters and Moorings

Monday June 18 Room: **Colonia** | 15:30 – 17:30

Session Chair: Yanlin Shao, Technical University of Denmark, Denmark

Session Co-Chair: Limin Yang, DNV GL, Norway

The Application of Caisson-type Solutions to the Current Offshore Wind Energy Market OMAE2018-77508

Javier Abanades¹ Javier Ivars¹ Rafael Molina² Carlos García¹
1. TYPSA, Valencia, Spain; 2. HRL-UPM, Madrid, Spain

Investigation on the Shooting Method Ability to Solve Different Mooring Lines Boundary Condition Types OMAE2018-77563

Florian Surmont, Damien Coache
Bureau Veritas, Saint Herblain, France

Model Tests and Numerical Analysis for a Floating

Mega Island OMAE2018-78589
Olaf Waals, Tim Bunnik, William Otto
MARIN, Wageningen, Netherlands

Design of a Flexible-base Hinged Connector for Very Large Floating Structures OMAE2018-78478

Qijia Shi, Daolin Xu, Haicheng Zhang
Hunan University, Changsha, China

Structures, Safety and Reliability

2-7-1 Reliability of Mooring and Riser Systems

Monday June 18 Room: **Dusseldorf** | 15:30 – 17:30

Session Chair: Ying Min Low, National University of Singapore, Singapore, Singapore

Session Co-Chair: Luis V. S. Sagrilo, Coppe/Federal University of Rio De Janeiro, Rio De Janeiro, RJ, Brazil

Long-Term Extreme Response Prediction of Mooring Lines using

Subset Simulation OMAE2018-77064

Darrell Leong¹ Ying Min Low¹ Youngkook Kim²

1. National University of Singapore, Singapore, Singapore;
2. Lloyd's Register Global Technology Centre Pte Ltd, Singapore, Singapore

Simulation of Behavior of an Energy Storage Device during

Installation Process in Lake Ontario OMAE2018-78508

M Hasanat Zaman¹ Ayhan Akinturk¹ Andrew McGillis²

1. National Research Council Canada, St. John's, NL, Canada;
2. Hydrostor Inc, Canada, Toronto, ON, Canada

Multi-Objective Design Optimization of Drilling Riser Operability

Envelope for Ultra-deep Water OMAE2018-78559

Hezhen Yang¹ Chan Ghee Koh² Ying Min Low² Peter Francis Bernad Adaikalaraj³

1. University of Glasgow, Glasgow, United Kingdom;
2. National University of Singapore, Singapore, Singapore;
3. Keppel Offshore and Marine Technology (KOMtech), Singapore, Singapore

Probabilistic Fatigue Model Applicable to Long-term Stochastic

Analysis of Offshore Risers OMAE2018-78761

Hany Elosta¹ Atilla Incecik²

1. TechnipFMC, Lysaker, Norway;
2. University of Strathclyde, Glasgow, United Kingdom

Microbiologically Influenced Corrosion on Seabed Chain in the

North Sea OMAE2018-77460

Øystein Gabrielsen¹ Turid Liengen² Solfrid Molid²

1. Statoil, Trondheim, Norway;
2. Statoil, Porsgrunn, Norway

Structures, Safety and Reliability

2-12-3 Structural Analysis and Optimization III

Monday June 18 Room: **Munich** | 15:30 – 17:30

Session Chair: Paulo Videiro, UFRJ, Rio de Janeiro, RJ, Brazil

Session Co-Chair: Francisco Javier Becerro, Repsol Norway, Stavanger, Rogaland, Norway

Analysis of a New Structure for Offshore Waste Landfill – Contaminant

Transport Characteristics Affected by Tidal Fluctuations OMAE2018-77012

Kwangseok Chae¹ Jongsub Lee² Hyunsik Jin³ Myounghak Oh⁴

1. GS Engineering & Construction Co., Seoul, Korea;
2. Korea University, Seoul, Korea;
3. HNG Consultant Co., Gwangmyeong-si, Korea;
4. Korea Institute of Ocean Science & Technology, Busan, Korea

Nonlinear Truss-based Quasi-Static Structural Model for Force

Distribtuion Predictions on Debris Containment Grids OMAE2018-78136

Jose Rodolfo Chreim¹ Alessandro Alberto de Lima² Joao Lucas Dozzi Dantas³

1. Universidade de Sao Paulo, Sao Paulo, SP, Brazil;
2. Universidade Paulista, Sao Paulo, SP, Brazil;
3. Institute for Technological Research, Sao Paulo, SP, Brazil

Removal of Topside Units in a Single Lift: the REPSOL YME Field Case

Study OMAE2018-77825

Beatriz Alonso Castro¹ Terje Birkenes¹ Huib Oosterveld²

1. Repsol Norway AS, Stavanger, Norway;
2. Allseas Engineering BV, Delft, Netherlands

Development of Cylinder Type Concrete FPSO with Tangerine-Shaped

Cross-section OMAE2018-77627

Jae-Young Cho¹ Jong-Heon Park² Jung J. Kim³

1. GE E&C, Seoul, Korea;
2. GS E&C, Seoul, Korea;
3. Kyungnam University, Chanwon-si, Korea

Materials Technology

3-1-1 Fracture Assessment – Analytical Methods

Monday June 18 Room: **Stuttgart** | 15:30 – 17:30

Session Chair: Xin Wang, Carleton University, Canada

Session Co-Chair: Xiaozhi Wang, American Bureau of Shipping, USA

Dominant Factors Influencing Ductile Fracture on Cutting Surface

during Cold Forming OMAE2018-77177

Kazunari Takahashi¹ Shuichi Yamatoki¹ Tetsuya Namegawa²

Masahiko Kinoshita³ Masaaki Fujioka²

1. Namura Shipbuilding Co., Ltd., Imari, Japan;
2. Nippon Steel & Sumitomo Metal Corporation, Futtsu, Japan;
3. Nippon Steel & Sumitomo Metal Corporation, Oita, Japan

Effect of Welding Residual Stress on Stress Intensity Factors for Semi-

elliptical Surface Cracks in a Butt-Welded Steel Plate OMAE2018-77188

Bin Qiang, Xin Wang

Carleton University, Ottawa, ON, Canada

Stress Intensity Factors in Fitness-for-Service Assessment of Cracks in

Mooring Chains OMAE2018-77496

Alberto Arredondo, Alexander Mena, Jorge Altuzarra, Jonathan Fernandez

Vicinay Marine Innovación, Leioa, Spain

Validation of Adaptive Gaussian Process Regression Model Used for

SIF Prediction OMAE2018-78608

Arvind Keprate¹ R.M. Chandima Ratnayake¹ Shankar Sankararaman²

1. University of Stavanger, Stavanger, Norway;
2. SGT Inc., Moffett Field, CA, USA

Background and New Revision of DNVGL-RP-F108 OMAE2018-78652

Asle Venås¹ Steinar Lindberg Bjerke¹ Steven Chong² Jens Petter Tronskar²

1. DNV GL, Hovik, Norway;
2. DNV GL, Singapore, Singapore

Pipelines, Risers, and Subsea Systems

4-1-7 Umbilicals and Cables I

Monday June 18 Room: **Frankfurt** | 15:30 – 17:30

Session Chair: Alan Dobson, TechnipFMC, United Kingdom

Session Co-Chair: Lin Zhao, Ocean University of China, China

Validated Methodology for Calculating Fatigue Capacity of

Deepwater Umbilicals OMAE2018-77099

Adrian Connaire¹ Ruairi Nestor¹ Krassimir Doynov² Venkat Krishnan³

1. Wood Group, Galway, Ireland;
2. ExxonMobil Production Company, Spring, TX, USA;
3. Exxonmobil, Spring, TX, USA

Mechanical Behaviors of Steel Strip Reinforced Flexible Pipes

under Bending OMAE2018-77450

Shan Jin¹ Shuai Yuan² Ting Liu² Peihua Han² Yong Bai³

1. Zhejiang University, College of Civil Eng.&Arch., Hangzhou, China;
2. Zhejiang University, Hangzhou, China;
3. Zhejiang University, Zhejiang, China

Finite Element Analysis of Umbilical Cables Anchoring Systems including Frictional Contact OMAE2018-78093

Fernando Geremias Toni¹ Eduardo Ribeiro Malta¹
 Clovis Martins¹ Rafael Morini² Andre Freitas³
 1. University of Sao Paulo, Sao Paulo, SP, Brazil; 2. Prysmian Surfex, Cariacica, ES, Brazil; 3. Prysmian Group, Vila Velha, ES, Brazil

A Novel Sensor Technology for Identifying Subsea Power Cables' and Umbilicals' Axial Stiffness OMAE2018-77537

Lars Jordal, Roger Slora, Per Ivar Karlsen, Bjørn Konradsen
 Nexans Norway AS, Halden, Norway

Corrosion Assessment of Aluminium Conductor for Medium Voltage Power Cables for Subsea Umbilical System OMAE2018-77483

Mariana Socariceanu¹ Xiaoxue An¹ Alan Deighton¹ Alan Friday²
 1. TechnipFMC, Newcastle upon Tyne, United Kingdom; 2. RINA Consulting Ltd, Surrey, United Kingdom

Pipelines, Risers, and Subsea Systems

4-3-5 Thermo-Mechanical

Monday June 18 Room: **Berlin** | 15:30 – 17:30

Session Chair: Daniel Carneiro, Wood, Brazil
 Session Co-Chair: Celso K. Morooka, University of Campinas/Faculty of Mechanical Engineering/Center for Petroleum Studies, Brazil

Effect of Lateral PSI on Controlled Lateral Buckling using Pre-deformed Pipeline OMAE2018-77154

Jayden Chee, Alastair Walker, David White
 The University of Western Australia, Crawley, WA, Australia

Walking of Long Pipelines with Multiple Buckles: Can a Trend be Trusted? OMAE2018-77422

Daniel Carneiro¹ Andrew Rathbone²
 1. Wood, Rio de Janeiro, RJ, Brazil; 2. Wood Group, Perth, WA, Australia

UHB and OOS Design for Subsea Pipeline with Variable Pressure and Temperature Distributions OMAE2018-77408

M Liu¹ C Cross² J McGrail²
 1. Aker Solutions, Windsor, United Kingdom; 2. Aker Solutions, London, United Kingdom

UHB Model Uncertainty for Structural Reliability Analysis of Pipeline OOS Design OMAE2018-77413

M Liu¹ C Cross²
 1. Aker Solutions, Windsor, United Kingdom; 2. Aker Solutions, London, United Kingdom

Influence of Wave-induced Uplift Forces on Upheaval Buckling of Pipelines Buried in Sandy Seabeds OMAE2018-77114

Duggivalasa Suresh Kumar, Dasharatha Achani,
 Mohammed Rabius Sunny, Trilochan Sahoo
 Indian Institute of Technology Kharagpur, Kharagpur, WB, India

Ocean Engineering

6-4-1 Towed and Undersea Cables and Pipes, Mooring, and Buoy Technology

Monday June 18 Room: **Burdeos** | 15:30 – 17:30

Session Chair: Jon Mikkelsen, University of British Columbia, Canada
 Session Co-Chair: Ryan Nicoll, Dynamic Systems Analysis Ltd., Canada

Motion Simulation Analysis of the Cable-Body of the Deep Underwater Towed System OMAE2018-77128

Dapeng Zhang¹ Yong Bai¹ Biao Jing² Keqiang Zhu³ Guowei Sun¹
 1. Zhejiang University, Hangzhou, China; 2. Ningbo Orient Wire&Cables Co., Ltd, Ningbo, China; 3. Ningbo University, Ningbo, China

Validation of Seismic Streamer Simulator and Sea Current Estimator using Full Scale Data OMAE2018-77163

Jan Vidar Grindheim¹ Inge Revhaug² Ken Welker¹ Peder Solheim¹ Egil Pedersen³
 1. Geograf AS, Sandnes, Norway; 2. Faculty of Science and Technology (IMT), Norwegian University of Life Sciences (NMBU), Aas, Norway; 3. Department of Engineering Science and Safety, UiT - The Arctic University of Norway, Tromsø, Norway

Numerical and Experimental Modelling of Mooring Systems: Effects of Wave Groupiness on Extreme Loads OMAE2018-77661

Carlos Barrera Sánchez, Raul Guancho, Inigo Losada,
 José A. Armesto, Daniel de los Dolores
 Environmental Hydraulics Institute of Cantabria - Universidad de Cantabria, Santander, Spain

Research on Influence of Horizontal Offsets of Underwater Equipment based on Pendulous Installation Method OMAE2018-77734

Jingqian Wang, Liping Sun, Zhongchao Deng, Gang Ma, Zhicheng Hou, Xiaomeng Zhu
 Harbin Engineering University, Harbin, China

Time Domain Coupled Dynamic Analysis of Mooring Systems in Extreme Sea Condition OMAE2018-78525

Xuliang Han, Shisheng Wang, Bin Xie, Wenhui Xie, Weiwei Zhou
 CNOOC Research Institute Ltd., Beijing, China

Ocean Engineering

6-15-2 Session II: Embedded Architecture for Robotic Vehicles and Underwater Communication Systems

Session III: Sensors, Processing Algorithms, Distributed Platform and Software Architecture

Monday June 18 Room: **Marsella** | 15:30 – 17:30

Session Chair: Mohammed Al-Rawi, Universidade de Aveiro, Portugal
 Session Co-Chair: Tamara Martin-Wanton, HI Iberia Ingeniería y Proyectos SL, Spain

A Novel Algorithm for Quasi Real-time Matching of Bathymetric Data OMAE2018-78768

Mohammed Al-Rawi¹ Tavvry Sebastien² Adrian Galdran³ Alberto Isasi³
 Joaquim Bastos⁴ Jonathan Rodriguez⁵ Fredrik Elmgren⁶ Marc Pinto²
 1. Universidade de Aveiro, Aveiro, Portugal; 2. ECA Robotics, La Garde, France;
 3. Tecnalia Research & Innovation, Bilbao, Spain; 4. Instituto de Telecomunicações - Pólo de Aveiro, Aveiro, Portugal; 5. Departamento de Eletrónica, Telecomunicações e Informática (DETI), Aveiro, Portugal; 6. Deep Vision, Linköping, Sweden

A Generic and Modular Architecture for Maritime Autonomous Vehicles OMAE2018-78769

Magali Barbier¹ Eric Bensana¹ Xavier Pucel¹ Francesco Pacini² Johann Dreo³ Sonia Bilbao⁴
 1. French Aerospace Lab - ONERA, Toulouse, France; 2. Leonardo S.p.A, Livorno, Italy;
 3. Thales, Palaiseau, France; 4. Tecnalia Research & Innovation, Derio, Spain

Performance Evaluation of Random Linear Network Coding for Broadcasting in Underwater Wireless Communications OMAE2018-78770

Victor Sucasas¹ Joaquim Bastos² Celestino Monteiro³ Oleksiy Kebkal⁴
 Ning Li⁵ Henry Dol⁶ Mohammed Al-Rawi¹
 1. Universidade de Aveiro, Aveiro, Portugal; 2. IT-Aveiro, Aveiro, Portugal; 3. GS LDA, Aveiro, Portugal; 4. EvoLogics GmbH, Berlin, Germany; 5. UPM, Madrid, Spain; 6. TNO, The Hague, Netherlands

SWARMS DDS-based Semantic Middleware for Cooperation of Underwater Vehicles OMAE2018-78771

Belén Martínez¹ Sonia Bilbao² Jesús Rodríguez-Molina³ Mirgita Frasher⁴ Baran Curuklu⁴
 1. Tecnalia Research & Innovation, Zamudio, Spain; 2. Tecnalia Research & Innovation, Derio, Spain; 3. CITSEM-Centro de Investigación en Tecnologías de Software y Stmas. Multimedia para la Sostenibilidad, Madrid, Spain; 4. Mälardalen University, Västerås, Sweden

The SWARMS Approach to Integration of Underwater and Overwater Communication Sub-Networks and Integration of Heterogeneous Underwater Communication Systems OMAE2018-78772

Francesco Pacini¹ Giacomo Paoli² Ivan Cayon³ Tamara Rivera³ Beatriz Sarmiento³
 Konstantin Kebkal⁴ Oleksiy Kebkal⁴ Veronika Kebkal⁴ Joost Geelhoed⁵
 Bart Schipperijn⁵ Henry Dol⁶ Torstein Skogseth⁷
 1. Leonardo S.p.A, Livorno, Italy; 2. Leonardo SDI, Livorno, Italy; 3. TTI, Santander, Spain;
 4. EvoLogics GmbH, Berlin, Germany; 5. S[&]T, Delft, Netherlands; 6. TNO, The Hague, Netherlands; 7. Water Linked AS, Trondheim, Norway

The SWARMS Ontology: Semantic Interoperability and Reasoning Capabilities OMAE2018-78775

Tamara Martin-Wanton¹ Sonia Bilbao² Joaquim Bastos³ Raul Mario del Toro Matamoros⁴
 1. HI Iberia Ingeniería y Proyectos SL, Madrid, Spain; 2. Tecnalia Research & Innovation, Derio, Spain; 3. Instituto de Telecomunicações - Pólo de Aveiro, Aveiro, Portugal;
 4. Universidad Politécnica de Madrid, Madrid, Spain

CFD and FSI

8-8-2 Optimization, Big Data and Machine Learning

Monday June 18 Room: **Dresden** | 15:30 – 17:30
 Session Chair: Rajeev Kumar Jaiman, National University of Singapore, Singapore
 Session Co-Chair: Jie Wu, SINTEF Ocean, Norway

Prediction of Extreme Wave Slamming Loads on a Fixed Platform OMAE2018-78179

Grzegorz Filip, Wenzhe Xu, Kevin Maki
 University of Michigan, Ann Arbor, MI, USA

A Data-Driven Approach for the Stability Analysis of Vortex-induced Vibration OMAE2018-78415

Sandeep Bukka Reddy, Allan Ross Magee, Rajeev Kumar Jaiman
 National University of Singapore, Singapore, Singapore

Deep Learning for Two-phase Flows: Application to Wave-structure Interaction OMAE2018-78425

Xiaoyu Mao, Vaibhav Joshi, Tharindu Pradeeptha Miyanawala, Rajeev Kumar Jaiman
 National University of Singapore, Singapore, Singapore

Application of GPGPU To Accelerate CFD Simulation OMAE2018-77649

Shaful Mintu, David Molyneux
 Memorial University of Newfoundland, St. John's, NL, Canada

A Novel Deep Learning Method for the Predictions of Current Forces on Bluff Bodies OMAE2018-78338

Tharindu Pradeeptha Miyanawala, Rajeev Kumar Jaiman
 National University of Singapore, Singapore, Singapore

Ocean Renewable Energy

9-1-4 Floating Wind Turbines: Numerical Modelling II

Monday June 18 Room: **Estrasburgo** | 15:30 – 17:30

Session Chair: Climent Molins, Universitat Politècnica de Catalunya, Spain

Session Co-Chair: Erwan Auburtin, Technip, France

Effects of Hull Flexibility on the Structural Dynamics of a TLP Floating Wind Turbine OMAE2018-77310

Carlos Eduardo Silva de Souza, Erin Bachynski
 Norwegian University of Science and Technology, Trondheim, Norway

Dynamic Response Analysis on the Interaction between Flexible Bodies of Large-sized Wind Turbine under Random Wind Loads OMAE2018-77444

Yilun Li¹ Shuangxi Guo² Min Li¹ Weimin Chen³ Yue Kong⁴
 1. Beijing University of Aeronautics and Astronautics, Beijing, China; 2. Key Laboratory of Mechanics in Fluid Solid Coupling System, Institute of Mechanics, CAS, Beijing, China;
 3. Institute of Mechanics, Chinese Academy of Sciences, Beijing, China; 4. Beihang University, Beijing, China

TELWIND: Numerical Analysis of a Floating Wind Turbine Supported by a Two Bodies Platform OMAE2018-77587

Jose Armento¹ Alfonso Jurado¹ Raul Guanache¹ Bernardino Couñago²
 Joaquin Urbano² José Serna²
 1. Environmental Hydraulics Institut of Cantabria - Universidad de Cantabria, Santander, Spain; 2. Esteyco SAP, Madrid, Spain

Methodology for Calculating Floating Offshore Wind Foundation Internal Loads using Bladed and a Finite Element Analysis Software OMAE2018-78035

Armando Alexandre, Ricard Buils Urbano, John Roadnight, Robert Harries
 DNV GL Energy Advisory, Bristol, United Kingdom

An Analytical Model of Floating Offshore Wind Turbine Blades Considering Bending-torsion Coupling Effect OMAE2018-78571

Xiaoqi Qu¹ Yougang Tang¹ Zhen Gao² Yan Li¹ Liqin Liu¹
 1. Tianjin University, Tianjin, China; 2. Norwegian University of Science and Technology, Trondheim, Norway

Ocean Renewable Energy

9-3-2 Oscillating Water Column

Monday June 18 Room: **Paris** | 15:30 – 17:30

Session Chair: Yi-Hsiang Yu, National Renewable Energy Laboratory (NREL), USA

Session Co-Chair: Guillaume Toutin, Technip, France

Performance of a Floating Oscillating Water Column Wave Energy Converter in the Presence of a Sloping Bed OMAE2018-77104

Piyush Mohapatra, Anirban Bhattacharyya, Trilochan Sahoo
 Indian Institute of Technology Kharagpur, Kharagpur, WB, India

Experimental Tests of a 1:16th-Scale Model of the Spar-Buoy OWC in a Large Scale Wave Flume in Regular Waves OMAE2018-78233

Rui P. F. Gomes¹ Joao C C Henriques² Luis M. C. Gato³ António F. O. Falcão³
 1. IDMEC, Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal; 2. Instituto Superior Tecnico, Lisbon, Portugal; 3. LAETA, IDMEC, Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

Influence of the Maximum Wave Power Extraction on the Structural Response of OWC Wave Energy Converters OMAE2018-78536

María L. Jalón, Fergal Brennan
Cranfield University, Bedfordshire, United Kingdom

Performance Analysis of Wells Turbine with Radiused

Blade Tip OMAE2018-78668
P. Madhan Kumar, Paresh Halder, Abdus Samad
Indian Institute of Technology Madras, Chennai, TN, India

Petroleum Technology

11-6-2 Well Drilling Fluids and Hydraulics II

Monday June 18 Room: **Potsdam** | 15:30 – 17:30

Session Chair: Ergun Kuru, University of Alberta, Canada

Session Co-Chair: Vassilios Kelessidis, Khalifa University of Science and Technology, United Arab Emirates

Can TiO₂ and CuO Commercial Nanoparticles be used for HP/HP Applications? A Comparison with the Very Well Performing

Fe₃O₄ NP OMAE2018-77056
Zisis Vryzas¹ Vassilios Kelessidis² Lori Nalbandian³ Vassilios Zaspalis¹
1. Aristotle University of Thessaloniki, Thessaloniki, Greece; 2. Khalifa University of Science and Technology, Abu Dhabi, United Arab Emirates; 3. CERTH, Thessaloniki, Greece

Effect of MWCNT and MWCNT Functionalized –OH and –COOH Nanoparticles in Laboratory Water Based Drilling Fluid OMAE2018-78702

Muhammad A.A. Alvi, Mesfin Belayneh, Arild Saasen, Kjell Kåre Fjelde, Bernt Aadnøy
University of Stavanger, Stavanger, Norway

Modelling of Drilling Fluid Thixotropy OMAE2018-77203

Eric Cayeux, Amare Leulseged
International Research Institute of Stavanger, Stavanger, Norway

Rheological Properties of Barite Sediments in Water-based Drilling Fluids OMAE2018-78695

Torbjorn Vralstad¹ Ragnhild Skorpa¹ Arild Saasen²
1. SINTEF, Trondheim, Norway; 2. University of Stavanger, Stavanger, Norway

Petroleum Technology

11-11-1 Human Factor in Oil and Gas Operations

Monday June 18 Room: **Baden Baden** | 15:30 – 17:30

Session Chair: Catalin Teodoriu, Mewbourne School of Petroleum and Geological Engineering, USA

Session Co-Chair: Saeed Salehi, Mewbourne School of Petroleum and Geological Engineering, USA

Consideration of the Human Element in Well Integrity Standards OMAE2018-78275

Chad Shenold¹ Catalin Teodoriu² Saeed Salehi²
1. The University of Oklahoma, Norman, OK, USA;
2. Mewbourne School of Petroleum and Geological Engineering, Norman, OK, USA

Implementing Human Factors in Oil and Gas Drilling and Completion Operations: Enhancing Culture of Process Safety OMAE2018-78431

Raj Kiran¹ Saeed Salehi² Catalin Teodoriu²
1. University of Oklahoma, Norman, OK, USA;
2. Mewbourne School of Petroleum and Geological Engineering, Norman, OK, USA

Analytical Models to Estimate Temperature Profiles during Drilling, Circulation, and Shut-in in Deep-water Environment OMAE2018-78557

Abu Hasan¹ Boyue Xu¹ Dave Fyfe²
1. Texas A&M University, College Station, TX, USA;
2. Metrol, Aberdeen, Scotland, United Kingdom

Effect of Human Factor on OCTG Collapse Testing OMAE2018-78732

Mihail Minescu¹ Catalin Teodoriu² Mihaela Caltaru¹ Marius Badicioiu¹
1. UPG Ploiesti, Ploiesti, Romania; 2. Mewbourne School of Petroleum and Geological Engineering, Norman, OK, USA

Internationals Standards Used Locally Worldwide: Adopting ISO Standards for the (Offshore) Oil and Gas Industry as National Standard by 34 European Countries in a Single Process OMAE2018-78776

Jarno Dakhorst
NEN | Netherlands Standardization Institute, Delft, Netherlands

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-1-3 Wave Spectral and Probabilistic Models and Engineering Applications I

Monday June 18 Room: **Bristol** | 15:30 – 17:30

Session Chair: Elzbieta M. Bitner-Gregersen, DNV GL A/S, Norway

Session Co-Chair: Felice Arena, University Mediterranea, Italy

Exploring Distributional Properties of the Maximum Wave Height in a Sea State OMAE2018-78778

Germán Rodríguez¹ Carlos Guedes Soares² Jose Carlos Nieto Borge³
1. Universidad de Las Palmas de Gran Canaria, Las Palmas G.C, Spain;
2. Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal;
3. University of Alcalá, Alcalá de Henares, Spain

Equivalent Storm Model for Long-term Statistics of Sea Storms off Norway OMAE2018-78747

Valentina Laface¹ Anne Karin Magnusson² Elzbieta M. Bitner-Gregersen³ Magnar Reistad⁴ Alessandra Romolo¹ Felice Arena¹
1. Mediterranea University, Reggio Calabria, Italy; 2. Norwegian Meteorological Institute, Bergen, Norway; 3. DNV GL AS, Høvik, Norway

A Case Study for an Offshore Structure for Aquaculture: Comparison of Analysis with Model Testing OMAE2018-78542

Are Johan Berstad¹ Jan Vidar Aarsnes²
1. Aquastructures, Oslo, Norway; 2. CeFront, Arendal, Norway

Floating Moored Oscillating Water Column with Meshless SPH Method OMAE2018-77313

Alejandro J.C. Crespo¹ Matthew Hall² José Domínguez³ Corrado Altomare³ Minghao Wu³ Tim Verbrugge³ Vasiliki Stratigaki³ Peter Troch³ Moncho Gómez-Gesteira¹
1. Environmental Physics Laboratory, Universidade de Vigo, Ourense, Spain; 2. School of Sustainable Design Engineering, University of Prince Edward Island, Charlottetown, PE, Canada; 3. Department of Civil Engineering, Ghent University, Ghent, Belgium

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-8-1 Maritime Safety and Human Factors I

Monday June 18

Room: **Oxford** | 15:30 – 17:30

Session Chair: Ângelo Teixeira, Centre for Marine Technology and Ocean Engineering (CENTEC)/Instituto Superior Técnico, Portugal
Session Co-Chair: Jakub Montewka, Gdynia Maritime University, Poland

Risk of Maritime Traffic in Coastal Waters OMAE2018-77312

Ângelo Teixeira¹ Carlos Guedes Soares²

1. Centre for Marine Technology and Ocean Engineering (CENTEC)/Instituto Superior Técnico, Lisbon, Portugal; 2. Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

Initial Risk Assessment of Autonomous Maritime Systems (Technical Presentation) OMAE2018-78452

Osiris A. Valdez Banda¹ Pentti Kujala¹ Pieter vanGelder²

1. Aalto University, Espoo, Finland; 2. Faculty of Technology, Policy and Management, Delft, Netherlands

Towards a Method Evaluating Control Actions in STPA-based Model of Ship-Ship Collision Avoidance Process OMAE2018-77790

Krzysztof Wróbel, Mateusz Gil, Jakub Montewka
 Gdynia Maritime University, Gdynia, Poland

Technique for Early Consideration of Human Reliability (TECHR): Applying a Generic Model in an Oil Tanker Operation to Study Scenarios of Collision OMAE2018-78678

Marcos C. Maturana¹ Marcelo Ramos Martins²

1. Centro Tecnológico da Marinha em São Paulo, São Paulo, SP, Brazil; 2. University of Sao Paulo, Cotia, SP, Brazil

Using Simulator Data to Facilitate Human Reliability Analysis in Offshore Emergency Situations OMAE2018-78420

Mashrura Musharraf, Allison Moyle, Faisal Khan, Brian J. Veitch
 Memorial University of Newfoundland, St. John's, NL, Canada

Honoring Symposium for Professor Bernard Molin on Marine and Offshore Hydrodynamics

13-1-2 Wave Body Interaction II

Monday June 18

Room: **Londres** | 15:30 – 17:30

Session Chair: TBA

Using the Floating Body Symmetries to Speed Up the Numerical Computation of Hydrodynamics Coefficients with Nemoh OMAE2018-77924

Matthieu Ancellin, Frederic Dias
 University College Dublin, Dublin, Ireland

Green Water Assessment for Marine and Offshore Floating Units. Structural Response of the ULCS Breakwater OMAE2018-78432

Sime Malenica¹ Byunghyuk Lee² Nikola Vladimir³ Inno Gatin³

Charles Monroy¹ Jerome De Lauzon¹
 1. Bureau Veritas, Paris, France; 2. Hyundai Heavy Industries, Ulsan, Korea; 3. University of Zagreb, Zagreb, Croatia

Effect of Surface Curvature on the Hydrodynamics of Water Entry at High Horizontal Velocity OMAE2018-78438

Alessandro Iafrati
 CNR-INSEAN (Marine Technology Research Institute), Roma, Italy

Solving 2-D Slamming Problems by the MPS Method with the Source Term Correction OMAE2018-78441

Ruosi Zha, Heather Peng, Wei Qiu
 Memorial University of Newfoundland, St. John's, NL, Canada

AFTERNOON LECTURE SERIES

17:45 – 18:30

Location: **Londres**



Dr. Walter Kuehnlein

Prospects and Challenges in Arctic and Ice Technology

Dr. Walter Kuehnlein, Managing Director, sea2ice Ltd & Co. KG

See Afternoon Lecture Series, page 24 for more details.

Afternoon Drinks

18:30 – 19:30

Location: **Venecia / Milán / Roma**

See Social Events, page 14 for more details.

Tuesday, June 19

Time	Title	Location
08:30 – 10:00	Concurrent Sessions	See pages 40–44 for session titles, authors and locations
10:00 – 19:30	Exhibition open	Venecia/Milán/Roma
10:00 – 10:30	Refreshment Break	Venecia/Milán/Roma
10:30 – 12:00	Concurrent Sessions	See pages 44–49 for session titles, authors and locations
12:00 – 13:30	Lunch	Buffet Madrid/France-Madrid Gallery/Lyon/Toulouse
13:30 – 15:00	Concurrent Sessions	See pages 49–53 for session titles, authors and locations
15:00 – 15:30	Refreshment Break	Venecia/Milán/Roma
15:30 – 17:30	Concurrent Sessions	See pages 53–57 for session titles, authors and locations
16:00 – 18:00	Oil&Gas Basque Industry: Technology for an Offshore Future	Marsela
17:45 – 18:30	Afternoon Lecture Series	Londres
18:30 – 19:30	Afternoon Drinks	Venecia/Milán/Roma

CONCURRENT SESSIONS

08:30 – 10:00

Offshore Technology

1-1-5 Fixed Structures and Jack-up Rigs

Tuesday June 19 Room: **Bonn** | 08:30 – 10:00

Session Chair: Partha Chakrabarti, Zentech Inc, USA

Session Co-Chair: Rami Gasmi, TechnipFMC, France

Research in Ballast Water Exchange for a Jackup Drilling Unit

OMAE2018-77342

Li Chunhui, Zhang Xuehui, Xiao Jianwei, Zhou Bo, Cheng Lei, O Zhao
Shanghai Waigaoqiao Shipbuilding Co, Ltd., Shanghai, China

Research on the Punch-through Analysis of Self-Elevating Unit based on the Energy Conservation Law

OMAE2018-78499

Hongtao Li, Jianbing Qu, Chang Gao
Offshore Engineering Technology Center of CCS, Tianjin, China

Performance-based Analysis of Wind-Survivability for Large Offshore Jacket Platforms Subject to Hurricane

OMAE2018-77979

Liu Hongbing¹ Liping Sun¹ Huang Ao² Zhao Yipei² Chen Guoming²
1. Harbin Engineering University, Harbin, China;
2. China University of Petroleum, Qingdao, China

Safe Operation of Jacket Platforms in a Major Oil Field in the North Sea

OMAE2018-77526

Ingar Scherf, Trine Hansen, Gudfinnur Sigurdsson

DNV GL, Høvik, Norway

Structures, Safety and Reliability

2-8-1 Reliability of Renewable Energy Systems

Tuesday June 19

Room: **Dusseldorf** | 08:30 – 10:00

Session Chair: Zhen Gao, Norwegian University of Science and Technology, Trondheim, Norway

Session Co-Chair: John Sorensen, Aalborg University, Aalborg, Denmark

Comparative Study of the Hydrodynamic Responses of Two Combined Wind Turbine and Wave Energy Converter Systems under Typical Operational Sea Cases

OMAE2018-77248

Nianxin Ren, Ying Zhu, Zhe Ma, Hongbo Wu

Dalian University of Technology, Dalian, China

Model Test of Integrated Floating Transport Technology of Offshore Wind Turbines with Composite Bucket Foundation

OMAE2018-77376

Hongyan Ding, Lingqian Meng, Puyang Zhang, Conghuan Le

Tianjin University, Tianjin, China

Preliminary Design and Hydrodynamic Analysis on the Offshore Integrated Anemometer Mast during Wet-Towing

OMAE2018-77382

Puyang Zhang, Ruiqi Hu, Hongyan Ding, Conghuan Le

Tianjin University, Tianjin, China

Should Residual Stresses be Taken into Account in Structural Integrity Assessment of Offshore Monopiles?

OMAE2018-78519

Anais Jacob¹ Jeferson Araujo de Oliveira² Ali Mehmanparast¹

Foroogh Hosseinzadeh² Filippo Berto³

1. Cranfield University, Cranfield, United Kingdom;

2. The Open University, Milton Keynes, United Kingdom;

3. Norwegian University of Science and Technology (NTNU), Trondheim, Norway

Structures, Safety and Reliability

2-13-2 Risk Analysis and Management II

Tuesday June 19

Room: **Munich** | 08:30 – 10:00

Session Chair: Marcelo Ramos Martins, University of Sao Paulo, Cotia, Brazil

Session Co-Chair: Faisal Khan, Memorial University, St John'S, NL, Canada

Orienting Inherently Safer Choices in Early Design of Offshore Oil & Gas Installations: A Multi-Target KPI Approach

OMAE2018-77700

Anna Crivellari, Alessandro Tugnoli, Costanza Martina, Sarah Bonvicini, Valerio Cozzani

University of Bologna - Department of Civil, Chemical, Environmental, and Materials Engineering, Bologna, Italy

Risk-based In-service Inspection Framework for Offshore Concrete Wind Turbine Structures and Application of Fuzzy Inference System

OMAE2018-78264

S.M. Samindi, M.K. Samarakoon, R.M. Chandima Ratnayake

University of Stavanger, Stavanger, Norway

Risk Analysis and Management of Moored Ships in Ports OMAE2018-78396

Liliana Pinheiro¹ Joao Santos² Conceição Fortes¹
 1. LNEC, Lisbon, Portugal; 2. CENTEC, Lisbon, Portugal

Shutdowns Management: Changing Things Up by Only Applying Best Practices OMAE2018-77618

Jose L. Alonso, Bernie Neal, Simon Jolly, Adetola Adesanya, Steven Auld
 Repsol Sinopec Resources UK, Aberdeen, United Kingdom

Materials Technology

3-3-1 Fatigue and Fracture Assessment

Tuesday June 19 Room: **Stuttgart** | 08:30 – 10:00

Session Chair: Koji Gotoh, Kyushu University, Japan
 Session Co-Chair: Jens Tronskar, Det Norske Veritas Pte Ltd, Singapore

A Comparison of Fracture Toughness and Fatigue Crack Propagation Characteristics of High Manganese and Nickel Steels OMAE2018-77247

Jeongyeol Park, Myung-Hyun Kim
 Pusan National University, Busan, Korea

A Modified Engineering Critical Assessment Approach for Offshore Pipelines OMAE2018-77952

Colum Holtam¹ Rajil Saraswat² Ramgopal Thodla¹ Feng Gui¹
 1. DNV GL USA, Inc., Katy, TX, USA; 2. DNV GL, Dublin, OH, USA

Effect of Tensile Force for Wear Performance of Mooring Chain OMAE2018-77960

Koji Gotoh, Masataka Nakagawa, Koji Murakami, Tomoaki Utsunomiya
 Kyushu University, Fukuoka, Japan

How to Estimate Performances of Cryogenic Spillage Protection Materials? OMAE2018-78529

Sebastien Viale
 TechnipFMC, IST, Paris, France

Pipelines, Risers, and Subsea Systems

4-1-2 Flexible Pipes II

Tuesday June 19 Room: **Frankfurt** | 08:30 – 10:00

Session Chair: Zhimin Tan, BHGE, Wellstream, USA
 Session Co-Chair: Antoine Félix-Henry, Marine Renewable Energies, France
 Session Co-Chair: Svein Saevik, NTNU, Norway

Equivalent Layer Approaches to Predict the Bisymmetric Hydrostatic Collapse Strength of Flexible Pipes OMAE2018-78146

José Renato M. de Sousa¹ Marcelo K. Protasio¹ Luis V. S. Sagrilo²
 1. Federal University of Rio de Janeiro, Rio de Janeiro, RJ, Brazil;
 2. Coppe/Federal University of Rio De Janeiro, Rio de Janeiro, RJ, Brazil

A Strain Energy-based Equivalent Method for the Prediction of Critical Collapse Pressure of Flexible Risers OMAE2018-78266

Xiao Li, Xiaoli Jiang, Hans Hopman
 Delft University of Technology, Delft, Netherlands

Effect of Tension on Collapse Performance of Flexible Pipes

OMA2018-77286
 Fabien Caleyron¹ Marcelo Miyazaki² Laurent Paumier³
 1. IFP Energies Nouvelles, Solaize, France; 2. TechnipFMC, Rio de Janeiro, RJ, Brazil;
 3. TechnipFMC, Le Trait, France

Evaluation of Aluminum Coated Flexible Pipe Armour Wires Exposed to a Sour Environment OMAE2018-78719

João Carlos Brancher Bertonecello¹ Mariana dos Reis Tagliari¹ Tiago Brun Coser¹
 Felipe Stefanowski Kerpen¹ Luciano Meirelles Santana¹
 Carlos Eduardo Fortis Kwietniewski¹ Marcelo Torres Piza Paes²
 1. Federal University of Rio Grande do Sul, Porto Alegre, RS, Brazil;
 2. Petrobras, Rio de Janeiro, RJ, Brazil

Pipelines, Risers, and Subsea Systems

4-3-4 VIV/Fatigue

Tuesday June 19 Room: **Berlin** | 08:30 – 10:00

Session Chair: Arjen Meijer, INTECSEA, Netherlands
 Session Co-Chair: Ilson Pasqualino, COPPE/UFRJ, Brazil

Vortex Induced Vibrations and Fatigue Assessment of Pipe-in-Pipe System OMAE2018-77350

Yang Zhengmao, Fartein Thorkildsen, Kristian Norland
 Subsea 7, Stavanger, Norway

Effects of Correlation Between Waves and Currents on Pipeline Free Span VIV Fatigue – a Case Study OMAE2018-77455

Dmitry Besedin¹ Ralf Peek² Knut Vedeld³ Olav Fyrileiv⁴ Sze Yu Ang⁵ Alexey Gulyaev¹
 1. Sakhalin Energy Investment Company, Yuzhno-Sakhalinsk, Russia; 2. Peek Solutions, Sant Andreu de Llavaneres, Spain; 3. DNV GL AS, Oslo, Norway; 4. DNV GL, Hovik, Norway;
 5. Shell Global Solutions International B.V., Rijswijk, Netherlands

Mitigation of Pipeline Free Span Fatigue due to Vortex Induced Vibration using Longitudinally Grooved Suppression OMAE2018-77716

Kanishka Jayasinghe¹ Hayden Marcollo¹ Andrew E. Potts¹
 Craig Dillon-Gibbons² Phillip Kurts¹ Peter Pezet³
 1. AMOG Consulting, Notting Hill, VIC, Australia; 2. AMOG Consulting, Inc., Houston, TX, USA; 3. Matrix Composites and Engineering Pty Ltd, Henderson, WA, Australia

Free Span Design Development – Experience with the New Revision of DNVGL-RP-F105 OMAE2018-78307

Knut Vedeld¹ Håvar A. Sollund¹ Olav Fyrileiv²
 1. DNV GL AS, Oslo, Norway; 2. DNV GL, Hovik, Norway

Ocean Space Utilization

5-1-1 New Concepts for Ocean Space Utilization

Tuesday June 19 Room: **Colonia** | 08:30 – 10:00

Session Chair: Kazuhiro Iijima, Dept of NAOE, Osaka University, Japan

Multi-Platform Concepts for Combining Offshore Wind Energy and Fish Farming in Freezing Sea Areas: Case Study in the Gulf of Bothnia OMAE2018-77677

Eeva Mikkola¹ Jaakko Heinonen¹ Markus Kankainen² Toni Hekkala¹ Juha Kurkela¹
 1. VTT Technical Research Centre of Finland Ltd., Espoo, Finland; 2. Natural resources institute Finland, Turku, Finland

A Fundamental Study on Motion Characteristics and Cargo Handling Efficiency of the Large-Scale Floating Coal

Transshipment Station OMAE2018-77727
 Hiroaki Eto¹ Yoh Shikita² Tomoki Ikoma¹ Koichi Masuda¹ Hiroaki Kihara²
 1. Nihon University, Funabashi, Japan; 2. Nihon University, Chiba, Japan

Research Regarding the Conceptual Change Observed in the Sea City Plan OMAE2018-77741

Ryo Sugahara, Akio Kuroyanagi
 Nihon University, Funabashi-shi, Japan

Dynamic Response Analysis of Floating Storage Tank System Considering Hydrodynamic and Mechanical Interactions OMAE2018-78673

Ling Wan¹ Chi Zhang² Allan Ross Magee² Jingzhe Jin³
Mengmeng Han² Kok Keng Ang² Øyvind Hellan³
1. Newcastle University, Singapore, Singapore; 2. National University of Singapore, Singapore, Singapore; 3. SINTEF Ocean, Trondheim, Norway

Ocean Engineering

6-8-1 Fluid-Structure, Multi-Body and Wave-Body Interaction I

Tuesday June 19 Room: **Marsella** | 08:30 – 10:00

Session Chair: Torgeir Kirkhorn Vada, DNV GL, Norway

Retrofitting of Floating Bridges with Perforated Outer Cover for Mitigating Wave-Induced Responses OMAE2018-77054

K G Vijay, Trilochan Sahoo
Indian Institute of Technology Kharagpur, Kharagpur, WB, India

A Comparison Study on the Hydroelasticity of Two Types of Floating Bridges in Inhomogeneous Wave Conditions OMAE2018-78308

Shuai Li¹ Shixiao Fu¹ Wei Wei¹ Torgeir Moan²
1. Shanghai Jiao Tong University, Shanghai, China;
2. Ctr For Ships & Ocean Structures, Trondheim, Norway

Hydrodynamic Interaction Between pontoons and its Impact on Global Responses of a Long Floating Bridge OMAE2018-78625

Xiang Xu¹ Thomas Viuff² Bernt Leira² Ole Øiseth²
1. Norwegian Public Roads Administration, Leikanger, Rogaland, Norway; 2. Norwegian University of Science and Technology, Trondheim, Norway

Interaction of Nomadic Bergy Bits with an Offshore Gravity Based Structure in Waves OMAE2018-78603

Dong Cheol Seo, M Hasanat Zaman, Ayhan Akinturk
National Research Council Canada, St. John's, NL, Canada

Ocean Engineering

6-12-1 Ocean Engineering Technology I

Tuesday June 19 Room: **Burdeos** | 08:30 – 10:00

Session Chair: Jon Mikkelsen, University of British Columbia, Canada

Session Co-Chair: Chang-Wei Kang, A*STAR Institute of High Performance Computing, Singapore

Path-Following of a Ship Sailing in Restricted Waters based on an Extended Updated-Gain High Gain Observer OMAE2018-77795

Jianqin Wang, Zao-Jian Zou, Tao Wang
Shanghai Jiao Tong University, Shanghai, China

Capturing and Analysing Real-time Data from Tugs OMAE2018-78003

Serena Lim¹ Kayvan Pazouki¹ Ben Zhang² Alan J Murphy¹
1. Newcastle University, Newcastle upon Tyne, United Kingdom; 1. Wuhan University of Technology, Wuhan, China

Validation of a Deterministic Wave and Ship Motion Prediction System OMAE2018-78037

Peter Naaijen¹ Kees van Oosten² Karel Roozen³ Riaan van 't Veer¹
1. Delft University of Technology, Delft, Netherlands; 2. DAMEN Shipyards, Gorinchem, Netherlands; 3. Next Ocean, Delft, Netherlands

Control of a DC-DC Boost Converter for Fuel-Cell-Powered Marine Applications OMAE2018-78171

Nikolaos I. Xiros¹ Georgios Tsakyridis² Marco Scharringhausen² Lars Witte²
1. University of New Orleans, New Orleans, LA, USA; 2. German Aerospace Center, Bremen, Germany

Polar and Arctic Sciences and Technology

7-2-1 Arctic Sea Transportation

Tuesday June 19 Room: **Baden Baden** | 08:30 – 10:00

Session Chair: Walter Kuehnlein, sea2ice, Germany

Session Co-Chair: Sören Ehlers, Technical University of Hamburg, Germany

Introduction to Polar and Arctic Sciences and Technology Symposium OMAE2018-78784

Sören Ehlers
Technical University of Hamburg, Hamburg, Germany

Refinement of Approaches to Estimation of Ship Ice Resistance in Ice Channel based on Data from Physical Model Experiments OMAE2018-77396

Aleksei Dobrodeev
Krylov State Research Centre, Saint Petersburg, Russia

Cargo-Flow-Oriented Design of Supply Vessel Operating in Ice Conditions OMAE2018-77802

Aleksander Kondratenko, Oleg Tarovik
Krylov State Research Centre, Saint Petersburg, Russia

CFD and FSI

8-1-1 Maneuvering

Tuesday June 19 Room: **Dresden** | 08:30 – 10:00

Session Organizer: Stephen Cosgrove, Altair, USA

Session Co-Chair: Owen H. Oakley, Jr, Retired, USA

A Study of Scale Effects on Ship Maneuverability using RANS

OMA2018-77191
Motoki Araki
National Maritime Research Institute, Mitaka, Japan

Numerical Simulation of Surface Ship Motion in Regular Head Waves OMAE2018-77327

Lixiang Guo, Peng Wei, Yue Sun, Jiawei Yu, Zhiguo Zhang
Huazhong University of Science and Technology, Wuhan, China

Unsteady Viscous CFD Simulations of KCS Behaviour and Performance in Head Seas OMAE2018-77330

Lixiang Guo, Jiawei Yu, Jiajun Chen, Kaijun Jiang, Dakui Feng
Huazhong University of Science and Technology, Wuhan, China

Body Force Propeller Model for Unsteady Surge Motion OMAE2018-78046

Bradford Knight, Kevin Maki
University of Michigan, Ann Arbor, MI, USA

Ocean Renewable Energy

9-1-1 Floating Wind Turbines: Numerical Modelling I

Tuesday June 19 Room: **Estrasburgo** | 08:30 – 10:00

Session Chair: Ilmas Bayati, Politecnico di Milano, Italy

Session Co-Chair: Matthew Hall, School of Sustainable Design Engineering, University of Prince Edward Island, Canada

Coupled Dynamics of a Vertical Axis Wind Turbine (VAWT) with Active Blade Pitch Control on a Semi-Submersible Floater OMAE2018-78058

Ebert Vlasveld¹ Fons Huijs¹ Feike Savenije² Benoit Paillard³

1. *GustoMSC, Schiedam, Netherlands*; 2. *ECN, Petten, Netherlands*; 3. *EOLFI, Paris, France*

Study on the Response of the Floating VAWT Considering the Rigid Flexible Coupling OMAE2018-78619

WanRu Deng¹ Xifeng Gao² Liqin Liu¹ Haixiang Zhao¹

1. *Tianjin University, Tianjin, China*; 2. *State Key Laboratory of Hydraulic Engineering Simulation and Safety, Tianjin University, Tianjin, China*

Coupled Dynamics Modelling of a Floating Wind Farm with Shared Mooring Lines OMAE2018-78489

Matthew Hall¹ Patrick Connolly²

1. *School of Sustainable Design Engineering, University of Prince Edward Island, Charlottetown, PE, Canada*; 2. *University of Prince Edward Island, Charlottetown, PEI, Canada*

A Reduced Draft Spar Concept for Large Offshore Wind Turbines OMAE2018-77787

Santiago de Guzman, Daniel Maron, Pedro Bueno, Miguel Taboada, Manuel Moreu Seaplace, Madrid, Spain

Ocean Renewable Energy

9-4-2 Case Studies and Field Tests

Tuesday June 19 Room: **Paris** | 08:30 – 10:00

Session Chair: Kelley Ruehl, Sandia National Laboratories, USA

Session Co-Chair: Nathan Tom, National Renewable Energy Laboratory (NREL), USA

Real Sea Testing of a Small Scale Weptos Wave Energy Converter Prototype OMAE2018-77173

Amelie Tetu¹ Jens Peter Kofoed¹ Francesco Ferri¹ Nathan Sonalier¹

Tommy Larsen² Lucia Margheritini¹

1. *Dept. of Civil Engineering, Aalborg University, Aalborg, Denmark*; 2. *Weptos A/S, Fredericia, Denmark*

Field Experiments on Dielectric Elastomer Generators integrated on a U-OWC Wave Energy Converter OMAE2018-77830

Felice Arena¹ Luca Daniele² Vincenzo Fiamma¹ Marco Fontana³ Giovanni Malara¹

Giacomo Moretti² Alessandra Romolo¹ Gastone Pietro Rosati Papini²

Andrea Scialò¹ Rocco Vertechy⁴

1. *University Mediterranea, Reggio Calabria, Italy*; 2. *TeCip Institute, Scuola Superiore Sant'Anna, Pisa, Italy*; 3. *University of Trento, Trento, Italy*; 4. *University of Bologna, Bologna, Italy*

Response of the U-OWC Prototype Installed in the Civitavecchia Harbour OMAE2018-78762

Felice Arena, Alessandra Romolo, Giovanni Malara, Vincenzo Fiamma, Valentina Laface University Mediterranea, Reggio Calabria, Italy

Statistical Energy Storage Sizing for Point Absorber Wave Energy Converters (WECs): A Device for Operation Off the U.S.

East Coast OMAE2018-77227

Xiang Zhou, Mehdi Jafari, Ossama Abdelkhalik, Umesh Korde, Lucia Gauchia Michigan Tech University, Houghton, MI, USA

Petroleum Technology

11-10-1 Drilling Geomechanics

Tuesday June 19 Room: **Potsdam** | 08:30 – 10:00

Session Chair: Arash Dahi Taleghani, The Pennsylvania State University, USA

Session Co-Chair: Yuanhang Chen, LSU, USA

Numerical Modeling of Sand Production Potential Estimation and Passive Control Optimization: A Case Study OMAE2018-77851

Eva Lopez Puiggene, Nubia Aurora Gonzalez Molano, Jose

Alvarelos Iglesias, Jose M Segura, M.R. Lakshminantha

Repsol, Mostoles, Spain

Analysis of Wellbore Instability in an Offshore Field: a Case Study OMAE2018-77928

Nubia Aurora Gonzalez Molano, Jose Alvarelos Iglesias,

Pablo Enrique Vargas Mendoza, M.R. Lakshminantha

Repsol, Mostoles, Spain

Experimental and Numerical Characterization of the Stress-Strain Behavior of Weak Sandstone Formations for Sanding

Assessment OMAE2018-77936

Nubia Aurora Gonzalez Molano, Jacobo Canal Vila, Hector Gonzalez

Perez, Jose Alvarelos Iglesias, M.R. Lakshminantha

Repsol, Mostoles, Spain

An Integrated Numerical and Mineralogical Study of a High Pressure High Temperature Well OMAE2018-78152

Jose M Segura¹ Miguel A. Caja¹ Laura García¹ Juan M. Jiménez¹ Jorge Díez²

Teresa Polo³ Jose Alvarelos Iglesias¹ M.R. Lakshminantha¹

1. *Repsol, Mostoles, Spain*; 2. *Repsol, Singapore, Singapore*; 3. *Repsol, Madrid, Spain*

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-1-2 Wave Spectral and Probabilistic Models and Engineering Applications II

Tuesday June 19

Room: **Bristol** | 08:30 – 10:00

Session Chair: Sonia Ponce de Leon, Universidade de Lisboa, Instituto Superior Técnico, Centre for Marine Technology and Ocean Engineering (CENTEC), Portugal

Session Co-Chair: Sheng Dong, Ocean University of China, China

Bivariate Distribution Modelling for Wave Height and Period in Jiaozhou Bay OMAE2018-77395

Weinan Huang¹ Shanshan Tao¹ Qiang Bai² Sheng Dong²

1. *College of Engineering, Ocean University of China, Qingdao, China*;

2. *Ocean University of China, Qingdao, China*

Potential Changes in Joint Probabilistics Description of the North Atlantic Wave Climate OMAE2018-77592

Elzbieta M. Bitner-Gregersen, Odin Gramstad

DNV GL AS, Hovik, Norway

The 2010 Oil Spill in the Gulf of Mexico – Flow-Rate Estimation based on Satellite-Images Analysis OMAE2018-78717

Diego Garcia Giraldo¹ Ronald W. Yeung²

1. American Bureau of Shipping, Madrid, Spain;

2. University of California At Berkeley, Berkeley, CA, USA

An Experimental Investigation of Inflatable Fabric Beams of Floating Composite Causeway OMAE2018-77532

Yunling Ye, Jin Gan, Weiguo Wu, Jiawei Li, Guohu Guo

Wuhan University of Technology, Wuhan, China

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-7-1 Structural Reliability and Risk-Based Maintenance I

Tuesday June 19

Room: **Oxford** | 08:30 – 10:00

Session Chair: Ângelo Teixeira, Centre for Marine Technology and Ocean Engineering (CENTEC)/Instituto Superior Técnico, Portugal

Session Co-Chair: Torgeir Moan, Centre For Ships & Ocean Structures, Norway

The “Theory of Everything” Applied to Offshore Structures

OMA2018-78569

Alberto Morandi

GustoMSC US, Houston, TX, USA

Integrity Management of Marine Structures – with Emphasis on Design for Structural Robustness OMAE2018-78109

Torgeir Moan

Centre For Ships & Ocean Structures, Trondheim, Norway

Adaptive Methods for Reliability Analysis of Marine Structures OMAE2018-77311

Ângelo Teixeira¹ Carlos Guedes Soares²

1. Centre for Marine Technology and Ocean Engineering (CENTEC)/Instituto Superior Técnico, Lisbon, Portugal; 2. Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

Structural Safety of Oil Tanker in the Adriatic Sea Damaged in Collision and Exposed to Combined Wave Bending Moments OMAE2018-77789

Joško Parunov, Maro Corak

University of Zagreb, Faculty of Mechanical Engineering and Naval Architecture, Zagreb, Croatia

Honoring Symposium for Professor Bernard Molin on Marine and Offshore Hydrodynamics

13-1-3 Wave Body Interaction III

Tuesday June 19

Room: **Londres** | 08:30 – 10:00

Session Chair: TBA

CFD Simulations of Spilling Breaking Waves past a Mono-Pile Structure at Different KC Numbers OMAE2018-77604

Shengnan Liu, Muk Chen Ong, Charlotte Obhrai

University of Stavanger, Stavanger, Norway

Control Signal Optimization for Non-Linear Wave Generation

OMA2018-78520

Jacob Hicks¹ Harry B. Bingham¹ Robert Read²

1. Technical University of Denmark, Kgs Lyngby, Denmark; 2. DTU/Mechanical Engineering, Lyngby, Denmark

Vertical Motion Response of a Submerged Body Induced by Interfacial Solitary Waves OMAE2018-78706

Ying Gou, Ruoyu Wang, Bin Teng

Dalian University of Technology, Dalian, China

Hydrodynamic Interactions of the Truncated Porous Vertical Circular Cylinder with Water Waves OMAE2018-78221

Charaf Ouled Housseine¹ Sime Malenica¹ Guillaume De Hauteclocque¹ Chen Xiao-Bo²

1. Bureau Veritas, Paris, France; 2. Bureau-Veritas, Neuilly sur Seine, France

REFRESHMENT BREAK

10:00 – 10:30

Location: **Venecia / Milán / Roma**

CONCURRENT SESSIONS

10:30 – 12:00

Offshore Technology

1-2-1 Model Testing

Tuesday June 19

Room: **Bonn** | 10:30 – 12:00

Session Chair: Allan Ross Magee, National University of Singapore, Singapore

Session Co-Chair: Xinchu Zhang, Shanghai Jiao Tong University, China

Maneuverability Towing Tank Experiments with Manifold Models – Part I: Static Drift Tests OMAE2018-77036

Felipe A.S. Kleine¹ Danyllo L. Guedes¹ Felipe S. de Castro¹

Daniel Carvalho² Joao Lucas Dozzi Dantas¹

1. Institute for Technological Research, Sao Paulo, SP, Brazil;

2. Petrobras, Rio de Janeiro, RJ, Brazil

Low Frequency Excitation and Damping of Four MODUs in Severe Seastates with Current OMAE2018-77873

Nuno Fonseca¹ Carl Trygve Stansberg² Kjell Larsen³ Oddgeir Dalane³

Tjerand Vigeddal⁴ Rune Bjørkli⁴

1. SINTEF Ocean, Trondheim, Norway; 2. Marinteknikk, Trondheim, Norway; 3. Statoil, Trondheim, Norway; 4. Statoil, Stavanger, Norway

Maneuverability Towing Tank Experiments of Manifold Models – Part II: PMM Oscillation Tests OMAE2018-78123

Danyllo L. Guedes¹ Felipe A.S. Kleine¹ Felipe S. Castro²

Daniel Carvalho³ Joao Lucas Dozzi Dantas¹

1. Institute for Technological Research, Sao Paulo, SP, Brazil;

2. University of Sao Paulo, Sao Paulo, SP, Brazil; 3. Petrobras, Rio de Janeiro, RJ, Brazil

Mooring of Semi Submersibles in Extreme Sea States – Simplified Models for Wave Drift Forces and Low Frequency Damping OMAE2018-77178

Kjell Larsen¹ Tjerand Vigeddal² Rune Bjørkli² Oddgeir Dalane¹

1. Statoil, Trondheim, Norway; 2. Statoil, Stavanger, Norway

Structures, Safety and Reliability

2-2-1 Probabilistic and Spectral Wave Models

Tuesday June 19

Room: **Dusseldorf** | 10:30 – 12:00

Session Chair: Ning Ma, Shanghai Jiao Tong University, Shanghai, China

Session Co-Chair: Felice Aren, Univ Mediterranea, Reggio Calabria, Italy

Benchmark for the Sources of Uncertainty in Extreme Wave Analysis

OMAE2018-78216

Ryota Wada, Takuji Waseda

The University of Tokyo, Kashiwa, Japan

On the Uncertainties of Estimating JONSWAP

Spectrum Parameters OMAE2018-78386

Kevin Ewans¹ Jason McConochie²

1. *MetOcean Research Ltd, New Plymouth, New Zealand;*

2. *Shell Global Solutions International B.V., Rijswijk, Netherlands*

On the Tuning-Free Statistical Model of Ocean Surface Waves

OMAE2018-78417

Vladimir Zakharov¹ Donald Resio² Andrei Pushkarev³

1. *University of Arizona, Tucson, AZ, USA;* 2. *Taylor Engineering Research Institute, Jacksonville, FL, USA;* 3. *Waves and Solitons LLC, Phoenix, AZ, USA*

Energy Content Analysis of Closed Basin Wave Simulation using Linear and Nonlinear Fourier Analysis

OMAE2018-78754

Ali Mohtat¹ Solomon Yim¹ Alfred Osborne²

1. *Oregon State University, Corvallis, OR, USA;*

2. *Nonlinear Wave Research Corporation, Alexandria, VA, USA*

Structures, Safety and Reliability

2-11-1 Ultimate Strength I

Tuesday June 19

Room: **Munich** | 10:30 – 12:00

Session Chair: Masahiko Fujikubo, Osaka University, Suita, Japan

Session Co-Chair: Deyu Wang Shanghai Jiao, Tong University, China

Numerical Study for the Progressive Collapse of Scale Model for ULCS Hull Girder under Longitudinal Bending

OMAE2018-77357

Chonglei Wang, Deyu Wang

Shanghai Jiao Tong University, Shanghai, China

Study on the Dynamic Ultimate Strength of Global Hull Girder of Container Ships Subjected to Hogging Moment

OMAE2018-77402

Yasuhira Yamada¹ Kyoko Kameya²

1. *National Institute of Maritime, Port and Aviation Technology (MPAT), Mitaka, Japan;*

2. *National Institute of Maritime, Port and Aviation Technology, Tokyo, Japan*

Development of Rapid Prediction Method for Residual Strength of Oil Tankers Subjected to Ship-Ship Collision

OMAE2018-77246

Sang Jin Kim¹ Jung Min Sohn² Jeom Kee Paik³ Seung Jun Baek²

1. *Pusan National University, Busan, Korea;* 2. *Pukyong National University, Busan, Korea;*

3. *The Ship and Offshore Research Institute, Geumjeong-Gu, Korea*

A PSO Based Method for Tracing the Motion of Neutral Axis Plane of Asymmetric Hull Cross-Sections and its Application

OMAE2018-77759

Chenfeng Li¹ Chao Gao¹ Xueqian Zhou¹ Sen Dong¹ Peng Fu¹ Donghao Xu²

1. *Harbin Engineering University, Harbin, China;* 2. *School of Automation, Harbin University of Science and Technology, Harbin, China*

Materials Technology

3-4-1 Fatigue and Fracture Performance in Sour Service

Tuesday June 19

Room: **Stuttgart** | 10:30 – 12:00

Session Chair: Jens Tronskar, Det Norske Veritas Pte Ltd, Singapore

Session Co-Chair: Sheng Bao, Zhejiang University, China

Mechanism for Crack-Size-Dependent Corrosion-Fatigue Crack Growth Behavior of Line Pipe Steel Exposed to Sour Environment

OMAE2018-77002

Baotong Lu, Stephen J. Hudak, Jr., Carl Popelar

Southwest Research Institute, San Antonio, TX, USA

Development of a Screening Frequency Scanning

Test Method OMAE2018-77068

Yanhui Zhang

TWI Limited, Cambridge, United Kingdom

Hydrogen Induced Stress Cracking of Super Duplex Steels – Effect of Operation Temperature

OMAE2018-77252

Lars M. Haldorsen¹ Bård Nyhus² Gisle Rørvik³

1. *Statoil, Stavanger, Norway;* 2. *SINTEF, Trondheim, Norway;* 3. *Statoil, Trondheim, Norway*

Integrity of Sour Gas Pipeline Despite Local Hard zones

OMAE2018-78672

Mamdouh Salama, Hernan Rincon, Stuart Wilson

Conoco Phillips, Houston, TX, USA

Pipelines, Risers, and Subsea Systems

4-1-3 Flexible Pipes III

Tuesday June 19

Room: **Frankfurt** | 10:30 – 12:00

Session Chair: Murilo Augusto Vaz, Universidade Federal do Rio de Janeiro, Brazil

Session Co-Chair: Farzan Parsinejad, Chevron, USA

Session Co-Chair: Anh Tuan Do, TechnipFMC, France

Instrumented FLIP Test and Static Pressure Influence on the Onset Velocity and Frequency on an Industrial Scale

OMAE2018-77905

Matthieu Decuupere¹ David Charliac¹ Jean-Philippe Roques² Alexandre Karnikian²

Muriel Amielh³ Pierre-Olivier Mattei⁴ Gaëtan Galeron⁵

1. *Flexi France, Le Trait, France;* 2. *TOTAL E&P, Paris, France;* 3. *IRPHE/CNRS, Marseille, France;* 4. *LMA/CNRS, Marseille, France;* 5. *TOTAL/IRPHE/LMA/CNRS, Marseille, France*

An Overview of Risk-based Inspection Planning for Flexible Pipeline

OMAE2018-78563

Hamad Hameed¹ Guowei Sun¹ Yong Bai²

1. *Zhejiang University, Hangzhou, China;* 2. *Zhejiang University, Zhejiang, China*

Electromechanical Impedance Method for Damage Detection of Typical Joint on Jacket Platform

OMAE2018-77385

Boying Zhang¹ Hamad Hameed² Yuxin Xu² Chonglin Zhang¹ Yong Bai³

1. *CNOOC Inspection Technology Co., Ltd., Tianjin, China;*

2. *Zhejiang University, Hangzhou, China;* 3. *Zhejiang University, Zhejiang, China*

Experimental Investigation on Vortex-Induced Vibration of Large Slenderness Ratio Deep-Water Catenary Riser

OMAE2018-78363

Lin Zhao¹ Zhimin Tan² Yucheng Hou³ Y.J. Yin¹ W.H. Meng¹

1. *Ocean University of China, Qingdao, China;* 2. *BHGE, Wellstream, Houston, TX, USA;* 3. *GE Oil & Gas, Wellstream, Houston, TX, USA*

Pipelines, Risers, and Subsea Systems

4-3-7 ECA and Inspection

Tuesday June 19

Room: **Berlin** | 10:30 – 12:00

Session Chair: Yong Bai, Zhejiang University, China

Session Co-Chair: Chris Timms, C-FER Technologies, Canada

A Comparison Study on Processing ILI Data with Different Filtering Methods OMAE2018-77006

Zhenhui Liu¹ Stig Olav Kvarme¹ Odd Einar Lindøe²

1. Aker Solutions AS, Trondheim, Norway; 2. Statoil ASA, Kårstø, Norway

ECAs, Probabilities and Axial Misalignment OMAE2018-77647

Andrew Cosham¹ Kenneth Macdonald²

1. Ninth Planet Engineering Limited, Newcastle upon Tyne, United Kingdom; 2. University of Stavanger, Stavanger, Norway

Recent Developments and Validation of the Latest FlawPRO

ECA Methodology OMAE2018-78068

Bostjan Bezensek¹ Meng Luo² Carl Popelar³ Graham Chell⁴

1. Shell Global Solutions, Aberdeen, United Kingdom; 2. Shell Technology Center, Houston, TX, USA; 3. Southwest Research Institute, San Antonio, TX, USA; 4. InterPRO LLC, Floresville, TX, USA

The Research and Application of ECA Technology for Large Diameter Thick Wall Subsea Pipeline of a Gas Field in Deep Water of South China Sea OMAE2018-78517

Hou Jing

CNOOC Research Institute, Beijing, China

Ocean Space Utilization

5-2-1 Aquaculture Structures in Waves and Current

Tuesday June 19

Room: **Colonia** | 10:30 – 12:00

Session Chair: David Kristiansen, SINTEF Ocean, Norway

Numerical and Experimental Study on the Seakeeping Behaviour of Floating Closed Fish Cages OMAE2018-77254

David Kristiansen¹ Pål Furset Lader² Per C. Endresen¹ Vegard Aksnes¹

1. SINTEF Ocean, Trondheim, Norway; 2. Norwegian University of Science and Technology, Trondheim, Norway

Predicting the Heading Misalignment of a Vessel-Shaped Offshore Fish Farm under Waves and Currents OMAE2018-77476

Lin Li¹ Zhiyu Jiang² Jungao Wang¹ Muk Chen Ong¹

1. University of Stavanger, Stavanger, Norway; 2. NTNU, Trondheim, Norway

Irregular Wave and Current Loads on a Fish Farm System OMAE2018-77482

Arnt G. Fredriksen¹ Basile Bonnemaire² Øyvind Nilsen¹

Leiv Aspelund¹ Andreas Ommundsen¹

1. Multiconsult Norge, Tromsø, Norway; 2. Lerøy Seafood Group, Tromsø, Norway

Model Experiment of a Controllable Depth Cage and its Mooring System OMAE2018-77757

Shuai Yu¹ Takero Yoshida² Han Jialin¹ Yoichi Mizukami³ Daisuke Kitazawa² Lili Liu¹

1. The University of Tokyo, Chiba, Japan; 2. Institute of Industrial Science, The University of Tokyo, Kashiwa, Japan; 3. Institute of Industrial Science, The University of Tokyo, Chiba, Japan

Numerical Analysis of the Dynamic Behaviour of Fishing Farm Subject to High Order Waves OMAE2018-77257

José Enrique Gutiérrez Romero¹ Blas Zamora Parra¹ Julio García Espinosa²

Jerónimo Antonio Esteve Pérez¹ Antonio José Lorente López¹

1. Universidad Politécnica de Cartagena, Cartagena, Spain; 2. International Centre for Numerical Methods in Engineering, Barcelona, Spain

Ocean Engineering

6-12-2 Ocean Engineering Technology II

Tuesday June 19

Room: **Burdeos** | 10:30 – 12:00

Session Chair: Jon Mikkelsen, University of British Columbia, Canada

Session Co-Chair: Serena Lim, Newcastle University, United Kingdom

Investigation on Mechanical Properties of Fibreglass Reinforced Flexible Pipes under Torsion OMAE2018-77354

Pan Fang¹ Yuxin Xu¹ Shuai Yuan¹ Yong Bai² Peng Cheng¹

1. Zhejiang University, Hangzhou, China; 2. Zhejiang University, Zhejiang, China

Numerical and Experimental Studies of Collapsing Cavitation Bubbles for Ballast Water Treatment OMAE2018-77157

Chang-Wei Kang¹ Tandiono Tandiono¹ Xin Lu¹ Cary Kenny Turangan¹

Hafiz Osman² Fannon Lim³ Margaret Lucas⁴ Matthew Tan⁵

1. A*STAR Institute of High Performance Computing, Singapore, Singapore; 2. Sembcorp Marine Ltd, Singapore, Singapore; 3. University of Glasgow, Glasgow, Scotland; 4. University of Glasgow, Glasgow, Scotland; 5. James Cook University Australia, Singapore, Singapore

Numerical Analysis of the Pendulous Installation Method in Deep Water OMAE2018-78639

Zhicheng Hou, Liping Sun, Xiaomeng Zhu
Harbin Engineering University, Harbin, China

Numerical Simulation of Hydrodynamic Performance of Dolphin Fluke Motion OMAE2018-77472

Rijie Li¹ Jiajun Chen² Yushen Huang² Liwei Liu² Xianzhou Wang²

1. China Ship Development and Design Center, Wuhan, China; 2. Huazhong University of Science and Technology, Wuhan, China

Ocean Engineering

6-15-3 Session IV Dynamic and Kinematic Issues in Robotic Vehicles, Modelling, and Control

Tuesday June 19

Room: **Marsella** | 10:30 – 12:00

Session Chair: Pedro Castillejo, Universidad Politécnica de Madrid, Spain

Trajectory Control of a Tethered Underwater Robot System

OMA2018-77436

Jiaming Wu¹ Dongjun Chen¹ Ying Xu¹ Yuqing Chen² Lihua Lu²

1. South China University of Technology, Guangzhou, China; 2. Guangzhou Shunhai Shipyards Ltd., Guangzhou, China

Comparison of Wave-Induced Loads on a Slender Body from the Inviscid Flow Linear Solution and an Experimental Model Test

OMA2018-77760

Travis M. Turner, Joseph T. Klamo, Young Kwon
Naval Postgraduate School, Monterey, CA, USA

Comparisons of Turning Abilities of Submarine with Different Rudder Configurations OMAE2018-77983

Dakui Feng, Xuanshu Chen, Hao Liu, Zhiguo Zhang, Xianzhou Wang
Huazhong University of Science and Technology, Wuhan, China

Polar and Arctic Sciences and Technology

7-3-1 Structures in Ice

Tuesday June 19 Room: **Baden Baden** | 10:30 – 12:00

Session Chair: R. U Franz von Bock Und Polach, Hamburg University of Technology, Germany

Session Co-Chair: Sören Ehlers, Technical University of Hamburg, Germany

Verification of Twistlock Simulations for Modular Use in the Arctic OMAE2018-77111

Josefine Kistner, Eldor Backhaus, Patrick Kaeding
University of Rostock, Rostock, Germany

Scale Effect in Freshwater Ice Flexural Strength OMAE2018-77314

Mohamed Aly¹ Rocky Taylor¹ Eleanor Bailey Dudley² Ian Turnbull²
1. Memorial University of Newfoundland, St. John's, NL, Canada;
2. Centre for Arctic Resource Development (CARD) C-CORE, St. John's, NL, Canada

The Study on Design and Ice Collision of Icebreaking Tanker

OMA2018-78409
Youngjae Jang, June Park, Wooram Lim, Hanbyul Kim, Sunil Won, Yunki Park
Hyundai Heavy Industries, Ulsan, Korea

Modelling Results with a New Simulator for Arctic Marine Structures – SAMS OMAE2018-78593

Andrei Tsarau¹ Marnix van den Berg² Wenjun Lu² Raed Lubbad² Sveinung Løset²
1. Sustainable Arctic Marine and Coastal Technology (SAMCoT),
Centre for Research-based Innovation, Trondheim, Norway;
2. Norwegian University of Science and Technology (NTNU), Trondheim, Norway

CFD and FSI

8-1-2 CFD, Waves

Tuesday June 19 Room: **Dresden** | 10:30 – 12:00

Session Chair: Yiannis Constantinides, Chevron, USA

Session Co-Chair: Susana Gomez-Alvarez, Repsol Technology Centre, Spain

Numerical Analysis of Wave and Current Interaction with Moored Floating Bodies using Overset Method OMAE2018-77284

Benedetto Di Paolo¹ Javier Lara¹ Gabriel Barajas¹ Agnese Paci² Inigo Losada¹
1. IHCantabria - Universidad de Cantabria, Santander, Spain;
2. Università di Bologna, Bologna, Italy

Preventing the Added-Mass Instability in Fluid-Solid Interaction for Offshore Applications OMAE2018-77308

Arthur Veldman¹ Henk Seubers¹ Peter van der Plas¹ Martin Hosseini Zahraei²
Peter Wellens² Rene Huijsmans³
1. University of Groningen, Groningen, Netherlands; 2. TU Delft, Delft, Netherlands; 3. Ship Hydromechanics & Structures Dept, Delft, Netherlands

Scale Effect Studies on Hydrodynamic Performance for DTMB 5415 using CFD OMAE2018-77331

Heng Zhang¹ Hang Zhang² Xuanshu Chen² Hao Liu² Xianzhou Wang²
1. Navy Academy of Armament, Beijing, China;
2. Huazhong University of Science and Technology, Wuhan, China

Numerical Simulation of the Resistance and Self-Propulsion

Model Tests OMAE2018-77767
Adrian Lungu
University "Dunarea de Jos" of Galati, Galati, Romania

Ocean Renewable Energy

9-2-6 Installation, O&M, and Case Studies

Tuesday June 19 Room: **Estrasburgo** | 10:30 – 12:00

Session Chair: Charlotte Leroux, Principle Power, France

Session Co-Chair: Maria L. Jalón, Cranfield University, United Kingdom

Iberdrola's Offshore Wind Pipeline: Technical Evolution and Challenges

OMA2018-77893
Alfonso Montero¹ Alejandro De Hoz²
1. Iberdrola Renovables, Madrid, Spain; 2. Avangrid Renewables (Iberdrola), Boston, MA, USA

Verification and Benchmarking Methodology for O&M Planning and Optimisation Tools in the Offshore Renewable Energy Sector

OMA2018-77176
Giovanni Rinaldi¹ Ajit Pillai¹ Philipp Thies² Lars Johanning¹
1. University of Exeter, Penryn, United Kingdom; 2. University of Exeter, Exeter, United Kingdom

A Global-Local Damage Assessment Methodology for Impact Damage on Offshore Wind Turbine Blades during Lifting Operations

OMA2018-78218
Amrit Shankar Verma¹ Philipp Ulrich Haselbach² Nils Petter Vedvik¹ Zhen Gao¹
1. Norwegian University of Science and Technology, Trondheim, Norway;
2. Technical University of Denmark (DTU), Copenhagen, Denmark

Investigation of Hydrodynamic Behaviour of Wind Turbine GBS during Offshore Installation and Engineering Design Outcomes OMAE2018-77619

Marie-Laure Ducasse, Damiano Soulat, Florent Vertallier
SAIPEM, Montigny Bretonneux, France

Ocean Renewable Energy

9-4-5 Analytical, Numerical and Experimental Studies II

Tuesday June 19 Room: **Paris** | 10:30 – 12:00

Session Chair: Alessandra Romolo, University Mediterranea, Italy

Session Co-Chair: Jennifer van Rij, National Renewable Energy Laboratory (NREL), USA

Wells Turbine with Variable Blade Profile for Wave Energy Conversion

OMA2018-78648
Bruno Pereiras Garcia¹ Celia Miguel González¹ Ginés Rodríguez Fuertes¹
Manuel García Díaz¹ Jesus Manuel Fernandez Oro¹ Francisco Castro²
1. University of Oviedo, Gijón, Spain; 2. University of Valladolid, Valladolid, Spain

Deterministic Decomposition of the Unsteady Flow in a Unidirectional Axialturbine for OWC Plants OMAE2018-78650

Jesus Manuel Fernandez Oro, Nuria Alvarez Bertrand,
Bruno Pereiras Garcia, Manuel García Díaz
University of Oviedo, Gijón, Spain

Design Load Analysis for Wave Energy Converters OMAE2018-78178

Jennifer van Rij¹ Yi-Hsiang Yu¹ Ryan Coe²
1. National Renewable Energy Laboratory (NREL), Golden, CO, USA; 2. Sandia National Laboratories, Albuquerque, NM, USA

Numerical Simulation of Control Strategies at Mutriku Wave Power Plant OMAE2018-78011

François-Xavier Fay¹ James Kelly² Joao Henriques³ Ainhoa Pujana¹ Mohammad Abusara⁴
Markus Mueller⁴ Imanol Touzón³ Pablo Ruiz-Minguela¹
1. Tecnalia R&I, Derio, Spain; 2. MaREI, University College Cork, Ringaskiddy, Ireland;
3. IDMEC, Instituto Superior Tecnico, Lisbon, Portugal; 4. CEMPS, Mathematics, Exeter University, Penryn, United Kingdom; 5. Tecnalia R&I / University of the Basque Country EHU-UPV, Derio, Spain

Petroleum Technology

11-6-3 Well Drilling-Fluids and Hydraulics-III

Tuesday June 19 Room: **Potsdam** | 10:30 – 12:00

Session Chair: Vassilios Kelessidis, Khalifa University of Science and Technology, United Arab Emirates

Session Co-Chair: Ergun Kuru, University of Alberta, Canada

Experimental Investigation of Flow Field Past a Spherical Particle Settling in Viscoelastic Fluids using Particle Image Velocimetry Technique OMAE2018-77321

Sumanth Kumar Arnipally¹ Majid Bizhani² Ergun Kuru¹

1. University of Alberta, Edmonton, AB, Canada;
2. University of British Columbia, Vancouver, BC, Canada

Dynamic Cuttings Slip Velocity Evaluation in Non-Newtonian Fluids using a Temperature Dependent Transient Drift Flux Model for Directional Wells OMAE2018-77386

Ekaterina Wiktorski, Dan Sui, Kjell Kåre Fjelde, Vebjørn Haraldstad Langåker
University of Stavanger, Stavanger, Norway

A New Model to Predict Drag Coefficient and Settling Velocity of Sphere in Both Newtonian and Non-Newtonian Fluids OMAE2018-78421

Xianzhi Song, Zhengming Xu, Gensheng Li, Zhaoyu Pang, Zhaopeng Zhu
China University of Petroleum (Beijing), Beijing, China

Wood Fibre Based Lost Circulation Materials OMAE2018-77662

Arild Saasen¹ Helge Hodne¹ Egil Ronæs² Simen A. Aarskog¹ Bente Hetland¹

- Marie B. Løvereide¹ Rahmat Mohammadi¹
1. University of Stavanger, Stavanger, Norway;
 2. Drilchem Norge AS, Bryne, Norway

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-4-1 Renewable Energy Offshore I

Tuesday June 19 Room: **Bristol** | 10:30 – 12:00

Session Chair: Jonas W. Ringsberg, Chalmers University of Technology, Sweden

Session Co-Chair: Antonio Falcao, Instituto Superior Tecnico, Portugal

Comparison of Mooring Solutions and Array Systems for Point Absorbing Wave Energy Devices OMAE2018-77062

Jonas W. Ringsberg¹ Hanna Jansson¹ Martin Örgård¹ Shun-Han Yang¹ Erland Johnson²

1. Chalmers University of Technology, Gothenburg, Sweden;
2. RISE Research Institutes of Sweden, Borås, Sweden

The Spring-like Air Compressibility Effect in OWC Wave Energy Converters: Hydro-, Thermo- and Aerodynamic Analyses OMAE2018-77096

Antonio Falcao, Joao C C Henriques
Instituto Superior Tecnico, Lisbon, Portugal

Scale Effects on Heave Plates for Floating Offshore Wind Turbines OMAE2018-78062

Ana Bezunartea-Barrio² Sergio Fernandez-Ruano² Adolfo Maron-Loureiro²

Enrique Molinelli-Fernandez² Francisco Moreno-Burón² Julio Oria-Escudero³

Jose Rios-Tubio² Cristina Soriano-Gomez² Alvaro Valea-Peces²

Carlos Lopez-Pavon⁴ Antonio Souto-Iglesias¹

1. Universidad Politécnica de Madrid (UPM), Madrid, Spain;
2. CEHIPAR, Madrid, Spain;
3. INTA-CEHIPAR, Madrid, Spain;
4. COREMARINE, Madrid, Spain

A Summary of the Recent Work at NTNU on Marine Operations related to Installation of Offshore Wind Turbines OMAE2018-78334

Zhen Gao, Amrit Shankar Verma, Yuna Zhao, Zhiyu Jiang, Zhengru Ren
Norwegian University of Science and Technology, Trondheim, Norway

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-7-2 Structural Reliability and Risk-Based Maintenance II

Tuesday June 19 Room: **Oxford** | 10:30 – 12:00

Session Chair: Joško Parunov, University of Zagreb, Faculty of Mechanical Engineering and Naval Architecture, Croatia

Session Co-Chair: Sören Ehlers, Technical University of Hamburg, Germany

Updatable Spatio-Temporal Probabilistic Corrosion Modeling for Offshore Structures OMAE2018-78684

Karoline Mali Neumann¹ Sören Ehlers² Ole Tom Vårdal³

1. Wood Group, Tønsberg, Norway;
2. Technical University of Hamburg, Hamburg, Germany;
3. AHPA, Lofdefjord, Norway

Enhance Reliability of Structural Bonding: an Advance Solution of Repair for Corrosion Onboard Offshore Units OMAE2018-78523

Luc Mouton¹ Xabier Errotabehere² Stéphane Paboeuf¹ Firas Sayed Ahmad²

1. Bureau Veritas, Nantes, France;
2. Cold-Pad, Paris, France

A Simple Procedure for the Prediction of the Collapse Pressure of Pipelines with Narrow and Long Corrosion Defects – Uncertainty and Sensibility Analysis OMAE2018-78750

Nara Oliveira, Theodoro Netto

Federal University of Rio De Janeiro, Rio de Janeiro, RJ, Brazil

Corrosion Margins for Redundant Ship Structures OMAE2018-77024

Yordan Garbatov¹ Carlos Guedes Soares²

1. University of Lisbon, Lisboa, Portugal;
2. Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

Honoring Symposium for Professor Bernard Molin on Marine and Offshore Hydrodynamics

13-3-1 Second-order Loads and Response

Tuesday June 19 Room: **Londres** | 10:30 – 12:00

Session Chair: Sime Malenica, Bureau Veritas, Paris, France

Consistent Numerical Modelling of Second-Order Wave Loads with Slow-Drift Velocities OMAE2018-78350

Yanlin Shao

Technical University of Denmark, Lyngby, Denmark

On the Possibility to Compute Slowly-Varying Drift with a CFD Solver OMAE2018-78379

Charles Monroy, Charaf Ouled Housseine, Sime Malenica

Bureau Veritas, Paris, France

Formulations of Second-Order Wave Loads OMAE2018-78548

Chen Xiao-Bo¹ Sime Malenica²

1. Bureau-Veritas, Neuilly sur Seine, France;
2. Bureau Veritas, Paris, France

Design Wave Analysis for the Extreme Horizontal Slow-Drift Motion of Moored Floating Platforms OMAE2018-78582

Dong-Hyun Lim, Yonghwan Kim
Seoul National University, Seoul, Korea

Lunch

12:00 – 13:30

Location: Buffet Madrid / France-Madrid Gallery / Lyon / Toulouse

CONCURRENT SESSIONS

13:30 – 15:00

Offshore Technology

1-2-2 Mooring System Design and Analysis I

Tuesday June 19 Room: **Bonn** | 13:30 – 15:00

Session Chair: Djoni Sidarta, TechnipFMC, USA
Session Co-Chair: Jonathan Fernandez, Vicinay Marine Innovación, Spain

Wind/Wave Misalignment Effects on Mooring Line Tensions for a Spar Buoy Wind Turbine OMAE2018-77586

Luigia Riefolo¹ Fernando del Jesus² Raúl Guancho Garcia²
Giuseppe Roberto Tomasicchio³ Daniela Pantusa³
1. Polytechnic of Milan, Milan, Italy; 2. Environmental Hydraulics Institute of Cantabria IHCantabria, Santander, Spain; 3. Università del Salento, Lecce, Italy

Remnant Life Assessment of Bonga FPSO and SPM Mooring Chains OMAE2018-77941

Achinike Ibekwe¹ Kjeld Sorensen¹ Jonathan Fernandez²
Alberto Arredondo² Alexander Mena²
1. Shell Nigeria Exploration and Production Company, Lagos, Nigeria;
2. Vicinay Marine Innovación, Leioa, Spain

Sensitivity and Cost Analysis of Mooring Solutions for Large Renewable Energy Structures OMAE2018-78238

Jonas Thomsen, Morten Thøtt Andersen
Aalborg University, Aalborg, Denmark

Benchmarking of Analysis Tools for Thruster Assisted Mooring OMAE2018-77243

Daniel Merino Hoyos¹ Erik Falkenberg¹ Petter Stuberg²
1. DNV GL, Høvik, Norway; 2. Kongsberg Maritime, Kongsberg, Norway

Offshore Technology

1-3-4 Fluid-Structure Interaction

Tuesday June 19 Room: **Colonia** | 13:30 – 15:00

Session Chair: Tahsin Tezdogan, University of Strathclyde, United Kingdom
Session Co-Chair: Martin Nuernberg, University of Strathclyde, United Kingdom

Time Domain Coupled Analysis and Load Transfer for Floating Wind Turbine Structures OMAE2018-77880

Kaijia Han¹ Torgeir Kirkhorn Vada¹ Qing Wang²
1. DNV GL, Høvik, Norway; 2. DNV GL, Shanghai, China

Hydrodynamic Coefficients of Simplified Subsea Structures

OMA2018-78315
Fredrik Mentzoni, Mia Abrahamsen-Prsic, Trygve Kristiansen
NTNU, Trondheim, Norway

Effects of Aspect Ratio on the Hydrodynamic Performance of Circular Cambered Otter Board OMAE2018-78450

Liu Yi Huang¹ Yu Yan Li¹ Ji Qiang Xu¹ Qing Chang Xu¹ Ming Xiu Jia¹
Zhen Lin Liang² Fenfang Zhao¹ Xinxin Wang¹ Yan Li Tang¹
1. Ocean University of China, Qingdao, China; 2. Shan Dong University, Weihai, China

Structural Dynamic Analysis of a Tidal Current Turbine using MBDyn OMAE2018-78501

Jun Leng, Ye Li
Shanghai Jiao Tong University, Shanghai, China

Structures, Safety and Reliability

2-1-2 Abnormal or Rogue Waves II

Tuesday June 19 Room: **Dusseldorf** | 13:30 – 15:00

Session Chair: Elzbieta M. Bitner-Gregersen, DNV GL AS, Høvik, Norway
Session Co-Chair: Alexander V. Babanin, University of Melbourne, Melbourne, Vic, Australia

On the Importance of the Exact Nonlinear Interactions in the Spectral Characterization of Rogue Waves OMAE2018-77270

Sonia Ponce de Leon¹ Alfred Osborne² Carlos Guedes Soares³
1. Universidade de Lisboa, Instituto Superior Técnico, Centre for Marine Technology and Ocean Engineering (CENTEC), Lisboa, Portugal; 2. Nonlinear Wave Research Corporation, Alexandria, VA, USA; 3. Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

Numerical Simulation of Focused Wave based on Fourth Order Compact Finite Volume Scheme OMAE2018-77753

Junli Bai, Ning Ma, Xie-chong Gu
Shanghai Jiao Tong University, Shanghai, China

Comparison of the Long-term Trends of the Largest Waves in the Ice-free Arctic Waters from Different Reanalysis Products OMAE2018-77971

Takuji Waseda¹ Takehiko Nose¹ Adrean Webb²
1. The University of Tokyo, Kashiwa, Japan; 2. Kyoto University, Kyoto, Japan

Impact of Sampling Variability on Sea Surface Characteristics of Nonlinear Waves OMAE2018-78317

Elzbieta M. Bitner-Gregersen, Odin Gramstad
DNV GL AS, Høvik, Norway

Structures, Safety and Reliability

2-11-2 Ultimate Strength II

Tuesday June 19 Room: **Munich** | 13:30 – 15:00

Session Chair: Jani Romanoff, Aalto University, Finland
Session Co-Chair: Cesare M. Rizzo, University of Genoa, Italy

A Simple Design Formula to Estimate the Ultimate Strength of Stiffened Panels under Bi-axial Compression mainly in Transverse Direction OMAE2018-77747

Yusuke Komoriyama¹ Daisuke Yanagihara²
1. National Maritime Research Institute, Mitaka-shi, Japan;
2. Kyushu University, Nishi-ku, Japan

Effects of Cumulative Buckling Deformation Formed by Cyclic Loading on Ultimate Strength of Stiffened Panel OMAE2018-77855

Yusuke Komoriyama¹ Yoshiteru Tanaka¹ Takahiro Ando¹ Yutaka Hashizume¹
Akira Tatsumi² Masahiko Fujikubo³
1. National Maritime Research Institute, Mitaka-shi, Japan;
2. Osaka University, Osaka, Japan; 3. Osaka University, Suita, Japan

Buckling of Stiffened Panels: An Improved Linearized Approach compared to Nonlinear Collapse Analysis OMAE2018-78399

Marco Gaiotti¹ Cesare Mario Rizzo¹ Montella Adriano² Nicole Ferrari³
1. University of Genoa, Genoa, Italy; 2. FINCANTIERI S.p.A., Genoa, Italy; 3. FINCANTIERI S.p.A. (Naval Vessels Business Unit, Hull Department), Genoa, Italy

Stress Analysis of Post-buckled Sandwich Panels OMAE2018-78510

Jani Romanoff¹ Jasmin Jelovica² Bruno Reinaldo Goncalves¹ Heikki Remes¹
1. Aalto University, Espoo, Finland; 2. University of British Columbia, Vancouver, BC, Canada

Materials Technology

3-5-1 Materials Performance in Harsh Conditions

Tuesday June 19 Room: **Stuttgart** | 13:30 – 15:00

Session Chair: Agnes Marie Horn, DNV GL, Norway
Session Co-Chair: Yanhui Zhang, TWI Limited, United Kingdom

New Generation Structural Plate Steel Metallurgy for Meeting Offshore and Arctic Application Challenges OMAE2018-77723

Steven Jansto
CBMM North America, Inc, Grand Rapids, OH, USA

New Generation of Heavy Wall Thicknesses Line Pipes for HPHT and Ultra-Deep Water Applications OMAE2018-77803

Stefano Crippa¹ Lorenzo Motta¹ Alessandro Paggi¹ Emanuele Paravicini Bagliani²
Alessandro Elitropi¹ Philippe Darcis²
1. Tenaris, Dalmine, Italy; 2. Dalmine S.p.A., Dalmine, Italy

Design under Arctic Conditions; a Summary of the Arctic Material Project Guideline OMAE2018-78426

Agnes Marie Horn¹ Erling Østby² Mons Hauge³ Odd Akselsen⁴
1. DNV GL, Oslo, Norway; 2. DNV GL, Høvik, Norway;
3. Statoil AS, Trondheim, Norway; 4. SINTEF, Trondheim, Norway

Use of C-MN Linerpipe for High H2S Service OMAE2018-78653

Asle Venås¹ Erling Østby¹ David Baxter² Steven Chong³
1. DNV GL, Høvik, Norway; 2. DNV GL, Alford, United Kingdom;
3. DNV GL, Singapore, Singapore

Pipelines, Risers, and Subsea Systems

4-1-4 Flexible Pipes IV

Tuesday June 19 Room: **Frankfurt** | 13:30 – 15:00

Session Chair: Anh Tuan Do, TECHNIPFMC, France
Session Co-Chair: Murilo Augusto Vaz, Universidade Federal do Rio de Janeiro, Brazil

Analytical Approach on Dynamic Tension of Free Hanging Configuration OMAE2018-77361

Motoyasu Kanazawa, Ryota Wada, Masahiko Ozaki
The University of Tokyo, Kashiwa, Japan

Dynamic Response Analysis on Flexible Riser with Different Configurations in Deep-Water based on FEM Simulations OMAE2018-77838

Shuangxi Guo¹ Yilun Li² Min Li² Weimin Chen³ Yue Kong⁴
1. Key Laboratory of Mechanics in Fluid Solid Coupling System, Institute of Mechanics, CAS, Beijing, China; 2. Beijing University of Aeronautics and Astronautics, Beijing, China;

3. Institute of Mechanics, Chinese Academy of Sciences, Beijing, China; 4. Beihang University, Beijing, China

Mechanical Behaviors of Metallic Strip Flexible Pipe under Axisymmetric Loads OMAE2018-77398

Kaien Jiang¹ Ting Liu¹ Shuai Yuan¹ Yong Bai²
1. Zhejiang University, Hangzhou, China; 2. Zhejiang University, Zhejiang, China

An Inverse Problem for Parameter Estimation in a Bend Stiffener System OMAE2018-78180

Yangye He, Murilo Augusto Vaz, Marcelo Caire
Federal University of Rio de Janeiro, Rio de Janeiro, RJ, Brazil

Ocean Space Utilization

5-2-2 Aquaculture Technology I

Tuesday June 19 Room: **Berlin** | 13:30 – 15:00

Session Chair: Muk Chen Ong, University of Stavanger, Norway

Motion Analysis of Flexible Hose based on Water Tank Experiment OMAE2018-77597

Xue Zhou¹ Yoichi Mizukami² Takero Yoshida³ Daisuke Kitazawa³
1. The University of Tokyo, Tokyo, Japan; 2. Institute of Industrial Science, The University of Tokyo, Chiba, Japan; 3. Institute of Industrial Science, The University of Tokyo, Kashiwa, Japan

Comparison of Taut and Catenary Mooring Systems for Finfish Aquaculture OMAE2018-78261

Adam Turner¹ Dean Steinke¹ Ryan Nicoll¹ Patrik Stenmark²
1. Dynamic Systems Analysis Ltd., Halifax, NS, Canada; 2. Seaflex, Umeå, Sweden

Investigation on the Probabilistic Distribution of the Stress Range of Net Cage Floater of Fish Cage for Fatigue Life Prediction OMAE2018-78760

Xiaodong Bai, Yun-Peng Zhao, Guo-Hai Dong, Chun-Wei Bi
Dalian University of Technology, Dalian, China

Ocean Engineering

6-1-1 Manoeuvring

Tuesday June 19 Room: **Burdeos** | 13:30 – 15:00

Session Chair: Ye Li, Shanghai Jiao Tong University, China

Hydrodynamic Performance of Rudders with Leading-edge Tubercles OMAE2018-77058

Kalyanam Shanmukha Srinivas, Anirban Bhattacharyya, Om Prakash Sha
Indian Institute of Technology Kharagpur, Kharagpur, WB, India

Quantifying Multicollinearity in Ship Manoeuvring Modeling by Variance Inflation Factor OMAE2018-77121

Zihao Wang, Zao-Jian Zou
Shanghai Jiao Tong University, Shanghai, China

Numerical Evaluation of Ship Maneuvering Performance in Waves OMAE2018-77208

Min-Guk Seo, Bo Woo Nam, Yeon-Gyu Kim
Korea Research Institute of Ships & Ocean Engineering, Daejeon, Korea

Optimising Ship Maneuvering in Narrow Waterways under Wind Disturbances OMAE2018-78435

Yasseen Adnan Ahmed¹ M A Hannan² Iwan Mustaffa Kamal¹
1. Universiti Kuala Lumpur, Perak, Malaysia;
2. Newcastle University, UK (Singapore Unit), Singapore, Singapore

Ocean Engineering

6-15-4 Session IV (cont.) Dynamic and Kinematic Issues in Robotic Vehicles, Modelling, and Control

Tuesday June 19 Room: **Marsella** | 13:30 – 15:00

Session Chair: Pedro Castillejo, Universidad Politécnica de Madrid, Spain

Fluid Parameter Identification for Underwater Snake Robots

OMAE2018-78070

Eleni Kelasidi, Gard Elgenes, Henrik Kilvær

Norwegian University of Science and Technology, Trondheim, Norway

Conceptual Design of an Autonomous Underwater Vehicle Powered by a Direct Methanol Fuel Cell to Enlarge Endurance

OMAE2018-78298

Antonio Villalba-Herreros, Ricardo Abad, Teresa J. Leo

Universidad Politécnica de Madrid, Madrid, Spain

Polar and Arctic Sciences and Technology

7-4-1 Vessels in Ice including Maneuvring

Tuesday June 19 Room: **Baden Baden** | 13:30 – 15:00

Session Chair: Karl Gunnar Aarsaether, SINTEF Ocean, Norway

Session Co-Chair: Walter Kuehnlein, sea2ice, Germany

Numerical Study of a Fishing Vessel Operating in Partially Ice Covered Waters

OMAE2018-77464

Karl Gunnar Aarsaether¹ Biao Su² David Kristiansen²

1. SINTEF Ocean, Tromsø, Norway; 2. SINTEF Ocean, Trondheim, Norway

Advances in the Simulation of Ship Navigation in Brash Ice

OMAE2018-77512

Julio García Espinosa, Borja Serván Camas, Jonathan Colom cobb, Eugenio Oñate

International Centre for Numerical Methods in Engineering, Barcelona, Spain

Statistical Adaptation of Probabilistic Ice Pressure Prediction Method for Ice-going Vessels in Inland Waterways

OMAE2018-77668

Meng Zhang¹ Harsha Cheemakurthy¹ Sören Ehlers² R. U Franz von Bock Und Polach²

Karl Garme¹ Magnus Burman¹

1. Royal Institute of Technology, Stockholm, Sweden;

2. Hamburg University of Technology, Hamburg, Germany

Definition of Efficiency and Safety Criteria for Icebreaker in

Ice Management Operations

OMAE2018-77404

Evgeny Karulin¹ Mikhail Kazantsev¹ Marina Karulina¹

Alexander Proniashkin¹ Dmitry Zaikin²

1. The Krylov State Research Centre, Saint Petersburg, Russia; 2. Gazprom Neft Shelf LLC, Saint Petersburg, Russia

CFD and FSI

8-3-1 Risers and Pipelines I

Tuesday June 19 Room: **Dresden** | 13:30 – 15:00

Session Chair: Michael Tognarelli, BP America Production Co., USA

Drill Riser Fairing Hydrodynamic Assessment with 3-Dimensional Computational Fluid Dynamics Simulations

OMAE2018-77063

Lawrence Lai

Trelleborg Offshore, Houston, TX, USA

LBM Simulation of Flow around an Oscillating Cylinder and a Stationary Cylinder in Side-by-Side Arrangement

OMAE2018-77133

Yang Zhang, Li Sheng, Jinlong Duan, Ke Chen, Yunxiang You

Shanghai Jiao Tong University, Shanghai, China

Large Eddy Simulation of Cross Flow in Pipe Junction

OMAE2018-77751

Jiajun Chen, Yue Sun, Hang Zhang, Dakui Feng, Zhiguo Zhang

Huazhong University of Science and Technology, Wuhan, China

Slug Flow-Induced Oscillation in Subsea Catenary Riser Experiencing VIV

OMAE2018-77298

S. Safrendyo, Narakorn Srinil

Newcastle University, Newcastle upon Tyne, United Kingdom

Ocean Renewable Energy

9-1-2 Floating Wind Turbine Experimental Testing and Validation II

Tuesday June 19 Room: **Estrasburgo** | 13:30 – 15:00

Session Chair: Claudie Benoit, Bureau Veritas, France

Session Co-Chair: Erin Bachynski, NTNU, Trondheim, Norway

High Fidelity Simulation of Multi-MW Rotor Aerodynamics by using a Multifan

OMAE2018-77606

Tommaso Battistella¹ Daniel de los Dolores Paradinas¹

Albert Meseguer Urbán² Raúl Guanache García¹

1. Environmental Hydraulics Institute of Cantabria IHCantabria, Santander, Spain;

2. Technical University of Denmark, Kgs Lyngby, Denmark

6-DoF Hydrodynamic Modelling for Wind Tunnel Hybrid/HIL Tests of FOWT: the Real-time Challenge

OMAE2018-77804

Ilmas Bayati¹ Alan Facchinetti² Alessandro Fontanella² Marco Belloli²

1. Politecnico di Milano Department of Mechanical Engineering, Milano, Italy; 2. Politecnico di Milano, Milan, Italy

Hydrodynamic Calibration of a Numerical Model of a 10MW Floating Wind Turbine

OMAE2018-77826

Marit Irene Kvittem, Petter Andreas Berthelsen, Lene Eliassen, Maxime Thys

SINTEF Ocean AS, Trondheim, Norway

Assessment of Experimental Uncertainty for a Floating Wind Semisubmersible under Hydrodynamic Loading

OMAE2018-77703

Amy Robertson¹ Erin Bachynski² Sebastien Gueydon³

Fabian Wendt⁴ Paul Schünemann² Jason Jonkman¹

1. National Renewable Energy Laboratory, Golden, CO, USA; 2. NTNU, Trondheim, Norway;

3. MARIN, Wageningen, Netherlands; 4. National Renewable Energy Laboratory, Boulder, CO, USA; 5. University of Rostock, Rostock, Germany

Ocean Renewable Energy

9-5-1 Turbine and Efficiency I

Tuesday June 19 Room: **Paris** | 13:30 – 15:00

Session Chair: Marc Cahay, TechnipFMC, France

Session Co-Chair: Kelley Ruehl, Sandia National Laboratory, USA

Session Co-Chair: Lance Manuel, University of Texas at Austin, USA

On the Optimum Pressure Drop of Kinetic Axial Turbines Operating within Nozzles

OMAE2018-77023

Jaime Moreu¹ Ricardo Garcia-Morato¹ Jesus Valle² Santiago de Guzman¹ Miriam Terceño¹

1. Seaplace, Madrid, Spain; 2. INTA CEHIPAR, Madrid, Spain

Power and Thrust Capping of Tidal Stream Turbines – a Case Study of the Pentland Firth OMAE2018-77079

Tuo Wang, Thomas Adcock
University of Oxford, Oxford, United Kingdom

Dynamic Responses of a Floating Tidal Turbine Considering Prescribed Wave-Frequency Motion OMAE2018-77426

Xiaoxian Guo, Jianmin Yang, Xin Li, Wenyue Lu, Tao Peng, Jun Li
Shanghai Jiao Tong University, Shanghai, China

Comparative Design of Multi-Rotor Tidal Energy Converters

OMAE2018-78227
Marina Pérez de la Portilla, Amable López Piñeiro, Luis Ramón Nuñez Rivas, Enrique Tremps Guerra
Universidad Politécnica de Madrid, Madrid, Spain

Petroleum Technology

11-6-4 Well Fluids and Hydraulics IV

Tuesday June 19 Room: **Potsdam** | 13:30 – 15:00
Session Chair: Jan David Ytrehus, SINTEF, Norway

Study of Frictional Forces Between Rotating Pipe and Wellbore in Horizontal Wells: Experimental and Modelling OMAE2018-77105

Ekaterina Wiktorski, Milad Khatibi, Dan Sui, Rune Wiggo Time
University of Stavanger, Stavanger, Norway

Cuttings Transport Simulation in a Horizontal Annulus OMAE2018-77266

Roland May¹ Yaroslav Ignatenko² Oleg Bocharov² Andrey Gavrilov³
1. Baker Hughes, Lower Saxony, Germany; 2. Baker Hughes, Novosibirsk, Russia;
3. Institute of Thermophysics of SB RAS, Krasnoyarsk, Russia

Modeling, Simulation and Validation of the Fluid Temperature of a Physical Drilling Simulator for Experimental Planning OMAE2018-77275

Patrick Höhn¹ Roger Aragall² Michael Koppe¹ Joachim Oppelt¹
1. Clausthal University of Technology, Celle, Germany; 2. Technical University of Clausthal, Celle, Germany

PIV Analysis of Dynamic Velocity Profiles in Non-Newtonian Drilling Fluids Exposed to Oscillatory Motion OMAE2018-77614

Maduranga Amaratunga¹ Roar Nybø² Rune Wiggo Time¹
1. University of Stavanger, Stavanger, Norway;
2. SINTEF Petroleum Research, Bergen, Norway

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-4-2 Renewable Energy Offshore II

Tuesday June 19 Room: **Bristol** | 13:30 – 15:00
Session Chair: Zhen Gao, Norwegian University of Science and Technology, Norway
Session Co-Chair: Wanan Sheng, UCC, Ireland

A Systematic Design Approach of Gripper's Hydraulic System Utilized in Offshore Wind Turbine Monopile Installation OMAE2018-77228

Amir R. Nejad¹ Lin Li² Wilson Ivan Guachamin Acero³ Torgeir Moan⁴
1. Norwegian University of Science and Technology, Trondheim, Norway; 2. University of Stavanger, Stavanger, Norway; 3. Departamento de Ingeniería Mecánica, Escuela Politécnica Nacional, Quito, Ecuador; 4. Centre For Ships & Ocean Structures, Trondheim, Norway

On the Array of Wave Energy Converters: the Case of the Coaxial-Duct OWC OMAE2018-78022

Juan C. C. Portillo¹ Joao C C Henriques² Rui P. F. Gomes³
Luís M. C. Gato⁴ António F. O. Falcão⁴
1. Instituto Superior Técnico, Universidade de Lisboa, Lisbon, Portugal; 2. Instituto Superior Técnico, Lisbon, Portugal; 3. IDMEC, Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal; 4. LAETA, IDMEC, Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

A Numerical Study of the BBDB OWC Wave Energy Converter

OMAE2018-78612
Wanan Sheng
UCC, Cork, Ireland

Experimental Study on Hydrodynamics of Hybrid Deep-V Monohull with Different Built-up Appendages OMAE2018-78540

Shuzheng Sun¹ Hui Li¹ Muk Chen Ong²
1. Harbin Engineering University, Harbin, China; 2. University of Stavanger, Stavanger, Norway

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-7-3 Structural Reliability and Risk-Based Maintenance III

Tuesday June 19 Room: **Oxford** | 13:30 – 15:00
Session Chair: Theodoro Netto, UFRJ, Brazil
Session Co-Chair: Joško Parunov, University of Zagreb, Croatia

Strain-based Fatigue Reliability Analysis of a Load-Carrying Fillet Welded Cruciform Joint OMAE2018-78025

Yan Dong¹ Yordan Garbatov¹ Carlos Guedes Soares²
1. University of Lisboa, Lisboa, Portugal; 2. Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

Risk-based Assessment of Fixed Offshore Wind Turbine Support Structures OMAE2018-77025

Baran Yeter¹ Yordan Garbatov² Carlos Guedes Soares³
1. Centre for Marine Technology and Ocean Engineering (CENTEC), University of Lisbon, Instituto Superior, Lisbon, Portugal; 2. University of Lisbon, Lisboa, Portugal; 3. Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

Cost Consequence-based Reliability Analysis of Bursting Failure Mode in Subsea Pipelines OMAE2018-78756

Pedram Edalat¹ Bahram Mehrafrooz¹ Mojtaba Dyanati²
1. Petroleum University of Technology, Mahmoudabad, Iran; 2. The University of Akron, Akron, OH, USA

Improving the Safety of Fishing Vessels through Roll Motion Analysis OMAE2018-78572

Lucia Santiago Caamano, Marcos Miguez Gonzalez, Vicente Díaz Casás
Intergrated Group for Engineering Research, University of A Coruna, Ferrol, Spain

Honoring Symposium for Professor Bernard Molin on Marine and Offshore Hydrodynamics

13-5-1 Hydroelasticity

Tuesday June 19

Room: **Londres** | 13:30 – 15:00

Session Chair: Paul Sclavounos, MIT, USA

Resonances of Floating Elastic Structures in Enclosed Shallow-Water Basins OMAE2018-77529

Kostas Belibassakis¹ Theodosios Papatheanasiou²

1. National Technical University of Athens, Athens, Greece;
2. Department of Civil and Environmental Engineering, London, United Kingdom

Impact on an Ice Floe with a Surface Crack OMAE2018-78273

Alexander Korobkin¹ Tatiana Khabakhpasheva²

1. School of Mathematics, University of East Anglia, Norwich, United Kingdom;
2. University of East Anglia, Norwich, United Kingdom

Investigation of an Air-Cushion Supported Solar Island OMAE2018-78533

Trygve Kristiansen¹ Petter Borvik²

1. NTNU, Trondheim, Norway;
2. TechnipFMC, Oslo, Norway

Elasto-Plastic Beam Afloat on Water Subjected to Waves OMAE2018-78646

Kazuhiro Iijima¹ Akira Tatsumi² Masahiko Fujikubo³

1. Dept of NAOE, Osaka University, Osaka, Japan;
2. Osaka University, Osaka, Japan;
3. Osaka University, Suita, Japan

REFRESHMENT BREAK

15:00 – 15:30

Location: **Venecia / Milán / Roma**

CONCURRENT SESSIONS

15:30 – 17:30

Offshore Technology

1-1-6 Spars, FPSOs and Multi-Column Floaters II

Tuesday June 19

Room: **Bonn** | 15:30 – 17:30

Session Chair: Johyun Kyoung, TechnipFMC, USA

Equilibrium Position Analysis for Offloading Operations with Turret-Moored FPSO OMAE2018-78195

Alex S. Huang¹ Felipe M. Moreno¹ Eduardo A. Tannuri¹ Joselito G. A. Câmara²

1. Universidade de São Paulo, São Paulo, SP, Brazil;
2. Petrobras/Shipping New Operations Development, Rio de Janeiro, RJ, Brazil

An Artificial Neural Network Based Method for Explosion Risk Analysis of Floating Offshore Platform OMAE2018-78570

Jihao Shi, Yuan Zhu, Chen Guoming

China University of Petroleum, Qingdao, China

Economic Potential of Industrializing Floating Wind Turbine Foundations OMAE2018-77660

Morten Thøtt Andersen¹ Amelie Tetu² Henrik Stiesdal³

1. Aalborg University, Aalborg, Denmark;
2. Dept. of Civil Engineering, Aalborg University, Aalborg, Denmark;
3. Stiesdal A/S, Odense, Denmark

Flare Structure Design to Account for Structure Heating during Emergency Flaring OMAE2018-78718

Rami Gasmi, Marc Cahay

TechnipFMC, Paris, France

New Concept Design of Large FPSO for Santos Basin, Brazil

OMAE2018-77037

Eduardo Vilameá¹ Allan C. De Oliveira² Felipe Ruggeri³ Kazuo Nishimoto⁴

1. Petrobras, Rio de Janeiro, RJ, Brazil;
2. Petrobras R&D Center, Rio de Janeiro, RJ, Brazil;
3. Argonautica Engineering & Research, São Paulo, SP, Brazil;
4. University of São Paulo, Cotia, SP, Brazil

Offshore Technology

1-4-4 Structural Analysis and Simulation

Tuesday June 19

Room: **Colonia** | 15:30 – 17:30

Session Chair: Jingxia Yue, Wuhan University of Technology, China

Session Co-Chair: Bruna Nabuco, Technical University of Denmark, Denmark

Development of New Methodologies to Assess the Structural Integrity of the Grouted Joint of a 10 MW Wind Turbine Substructure

OMAE2018-77628

Benjamin Santos¹ Alvaro Rodriguez¹ David Fernandez¹ Tomas Gintautas²

John Sorensen² Anand Natarajan³ Wilfried Njomo³

1. CTC, Santander, Spain;
2. Aalborg University, Aalborg, Denmark;
3. Technical University of Denmark, Roskilde, Denmark

Studies on Meta-Modeling for Lazy-Wave Steel Catenary

Risers OMAE2018-78181

Bruno da Fonseca Monteiro¹ Juliana Souza Baioco² Edivaldo Ramos

Delgado¹ Carl Horst Albrecht¹ Beatriz Lima¹ Breno P. Jacob³

1. Universidade Federal do Rio de Janeiro, Rio de Janeiro, RJ, Brazil;
2. Universidade Federal Fluminense, Niterói, RJ, Brazil;
3. LAMCSO – Laboratory of Computer Methods and Offshore Systems, PEC/COPPE/UFRJ, Rio de Janeiro, RJ, Brazil

A Flexible Connector Design for Multi-Modular Floating Structures OMAE2018-78661

Huai Zhao, Daolin Xu, Haicheng Zhang, Qijia Shi

Hunan University, Changsha, China

Optimized Bolt Tightening Sequences in Bolted Joints using

Superelement FE Modeling Technique OMAE2018-77095

Ibai Coria¹ Iñigo Martin² Hakim Bouzid³ Iker Heras² Josu Aguirrebeitia²

1. University of the Basque Country, Bilbao, Spain;
2. University of the Basque Country (UPV/EHU), Bilbao, Spain;
3. Ecole Technologie Supérieure, Montreal, QC, Canada

Structures, Safety and Reliability

2-1-1 Abnormal or Rogue Waves I

Tuesday June 19

Room: **Dusseldorf** | 15:30 – 17:30

Session Chair: Alexander V. Babanin, University of Melbourne, Melbourne, Vic, Australia

Session Co-Chair: Elzbieta M. Bitner-Gregersen, DNV GL AS, Høvik, Norway

Change of Regime of Air-Sea Dynamics in Extreme Metocean Conditions OMAE2018-77484

Alexander V. Babanin

University of Melbourne, Melbourne, VIC, Australia

Reproduction of Freak Waves using Variational Data Assimilation and Observation OMAE2018-77771

Wataru Fujimoto, Takuji Waseda
The University of Tokyo, Kashiwa, Japan

Analysis of Rogue Waves in North-Sea In-Situ Surface Wave Data OMAE2018-77858

Odin Gramstad¹ Elzbieta M. Bitner-Gregersen¹ Øyvind Breivik²
Anne Karin Magnusson² Magnar Reistad² Ole Johan Aarnes²
1. DNV GL, Høvik, Norway; 2. Norwegian Meteorological Institute, Bergen, Norway

Drifting Rogue Packets OMAE2018-77904

Amin Chabchoub¹ Norbert Hoffmann² Nail Akhmediev³ Takuji Waseda⁴
1. The University of Sydney, Sydney, NSW, Australia; 2. Hamburg University of Technology, Hamburg, Germany; 3. Australian National University, Canberra, ACT, Australia; 4. The University of Tokyo, Kashiwa, Japan

Characterisation of the Emergence of Rogue Waves from Given Spectra through a Wigner Equation Approach OMAE2018-78292

Agissilaos Athanassoulis
University of Dundee, Dundee, United Kingdom

Structures, Safety and Reliability

2-11-3 Ultimate Strength III

Tuesday June 19 Room: **Munich** | 15:30 – 17:30
Session Chair: Masahiko Fujikubo, Osaka University, Suita, Japan
Session Co-Chair: Xiao Li Jiang, TU Delft, The Netherlands

A Study of Ultimate Strengths of Typical Longitudinal Girders with Openings in Container Ships OMAE2018-77820

Jinju Cui, Deyu Wang
Shanghai Jiao Tong University, Shanghai, China

Bending Capacity of Corroded Pipeline Subjected to Internal Pressure and Axial Loadings OMAE2018-77602

Jie Gao¹ Xin Li¹ Jing Zhou¹ Wenxing Zhou² Zengli Peng¹
1. Dalian University of Technology, Dalian, China;
2. University of Western Ontario, London, ON, Canada

Simulation-based Tracking of UOE Pipe Yield Strength Considering Various Thickness-to-Diameter Ratios OMAE2018-77786

Jiwoon Yi¹ Soo-Chang Kang² Hyun-Moo Koh³ Jinkyoo F. Choo⁴
1. Korean Institute of Bridge and Structural Engineers, Seoul, Korea; 2. POSCO, Incheon, Korea; 3. Seoul National University, Seoul, Korea; 4. Konkuk University, Seoul, Korea

Materials Technology

3-2-2 Fatigue Performance II

Tuesday June 19 Room: **Stuttgart** | 15:30 – 17:30
Session Chair: Agnes Marie Horn, DNV GL, Norway
Session Co-Chair: Carol Johnston, TWI Ltd, United Kingdom

Improved Bend Over Sheave Durability of HMPE Ropes for Deep Sea Handling OMAE2018-77530

Peter Davies¹ Nicolas Lacotte¹ Mael Arhant¹ Damien Durville²
Abderrahim Belkhabbaz² Michel Francois³ Fabien Khouri³ Kara Konaté⁴ Stephen Mills⁴
Paul Smeets⁵ Jean-Robert Philippe⁶ Christophe DeFrance⁶ Dennis Sherman⁷
Kurt Newboles⁸ Alain Ledoux⁹ Nicolas Chazot¹⁰ Sebastien Saillard¹⁰
Ramesh Kante¹¹ David Cannell¹¹ Patrick Chevallier¹² Olivier Lodeho¹²
1. IFREMER (French Ocean Research Institute), Plouzané, France; 2. Ecole Centrale-Supelec, Gif-sur-Yvette, France; 3. Bureau Veritas, Neuilly-sur-Seine, France; 4. IMECA/REEL, La

Rochelle, France; 5. DSM Dyneema, Heerlen, Netherlands; 6. Cyxplus, Montbonnot-Saint-Martin, France; 7. Samson Rope, Statham, GA, USA; 8. Samson Rope, Ferndale, WA, USA; 9. Total S.A., Courbevoie, France; 10. Saipem SA, Montigny le Bretonneux, France; 11. TechnipFMC, Westhill, United Kingdom; 12. Subsea 7, Suresnes, France

Stability of Compressive Residual Stress Introduced by HFMI Technique OMAE2018-77887

Hector Olmedo Ruiz Valdes¹ Naoki Osawa¹ Sherif Rashed² Hidekazu Murakawa³
1. Osaka University, Suita, Japan; 2. CAE Lab, Hyogo-ken, Japan; 3. Osaka University, Osaka, Japan

Numerical Simulation of Fatigue in Composites OMAE2018-77889

Joel Jurado, Xavier Martínez, Daniel Di Capua, Lucia G. Barbu
International Centre for Numerical Methods in Engineering, Barcelona, Spain

Internal Surface Crack Growth in Offshore Rigid Pipes Reinforced with CFRP OMAE2018-78060

Zongchen Li¹ Xiaoli Jiang¹ Zhiping Liu² Hans Hopman¹
1. Delft University of Technology, Delft, Netherlands;
2. Wuhan University of Technology, Wuhan, China

Yield Point Determination using Cyclic Loading in Polymer OMAE2018-78256

Lucas K. Ychisawa, Celio Costa
Federal University of Rio de Janeiro, Rio de Janeiro, RJ, Brazil

Pipelines, Risers, and Subsea Systems

4-3-3 Installation

Tuesday June 19 Room: **Frankfurt** | 15:30 – 17:30
Session Chair: Julian Hallai, ExxonMobil, USA
Session Co-Chair: Stelios Kyriakides, University of Texas at Austin, USA

Wrinkling Failure of Lined Pipe during Reeling OMAE2018-77394

Lin Yuan, Stelios Kyriakides
University of Texas at Austin, Austin, TX, USA

The Application of Reliability Based Methods in the Optimisation of Reeled Rigid Pipeline Wall Thickness Requirements OMAE2018-77865

Daniel Smith, Craig Peters, Subhajt Lahiri
Subsea 7, Westhill, United Kingdom

Reeled CRA Clad/Lined Pipeline Installation Seastate Optimisation from Fatigue and Fracture Perspective OMAE2018-78168

Daowu Zhou¹ Thurairajah Sriskandarajah¹ Heidi Bowlby² Ove Skorpen²
1. Subsea 7, Sutton, United Kingdom; 2. Subsea 7, Stavanger, Norway

Bending of Lined Steel Pipes in the Presence of Internal Pressure OMAE2018-78265

Ilias Gavriilidis, Spyros A. Karamanos
The University of Edinburgh, Edinburgh, Scotland, United Kingdom

Ocean Space Utilization

5-2-3 Aquaculture Technology II

Tuesday June 19 Room: **Berlin** | 15:30 – 17:30
Session Chair: Shixiao Fu, Shanghai Jiao Tong University, China

Development of a Tool to Identify Potential Zones for Offshore Aquaculture: a Global Case Study for Greater Amberjack OMAE2018-77870

Carlos Vinicius Weiss, Bárbara Ondiviela, Raúl Guanache García, Omar Castellanos, Jose Antonio Juanes
Environmental Hydraulics Institute "IH Cantabria" - University of Cantabria, Santander, Spain

Energy Consumption of a Sailing Quad-Maran Automated Vessel

OMAE2018-77946

Chenfang Zhang¹ Norikazu Masuda² Choong Sik Park³ Shinichi Kitamura¹Yasunori Nihei¹ Sharath Srinivasamurthy¹

1. Osaka Prefecture University, Sakai, Japan; 2. Nippon Kaiko Co., Ltd, Kobe, Japan;

3. Osaka Research Institute of Industrial Science and Technology, Osaka, Japan

Offshore Fish Farm OMAE2018-78651

Vincent Doumeizel, Lloyd's Register, London, United Kingdom

Ocean Engineering**6-2-2 Nonlinear and Extreme Waves, Waves from Wind**

Tuesday June 19

Room: **Burdeos** | 15:30 – 17:30

Session Chair: Solomon Yim, Oregon State University, USA

Ocean Wave Non-Linearity and Wind Input in Directional Seas – Energy Input during Wave-Group Focussing OMAE2018-77998Thomas Adcock¹ Paul Taylor²

1. University of Oxford, Oxford, United Kingdom;

2. The University of Western Australia, Crawley, WA, Australia

The Set-down and Set-up of Directionally Spread and Crossing Surface Gravity Wave Groups in Severe North Sea Storms OMAE2018-77186Mark McAllister¹ Thomas Adcock¹ Paul Taylor² Ton van den Bremer¹

1. University of Oxford, Oxford, United Kingdom;

2. The University of Western Australia, Crawley, WA, Australia

Late Stages in the Development of Modulation Instability of Waves

OMAE2018-77504

Igor Shugan¹ Yana Saprykina² Sergei Kuznetsov² Yang - Yih Chen³

1. National Cheng Kung University, Tainan, Taiwan; 2. Shirshov Institute of Oceanology of the Russian Academy of Sciences, Moscow, Russia; 3. Sun Yat-sen University, Kaoshiung, Taiwan

Plain Interpretation of Freak Waves Phenomenon OMAE2018-78393Dmitry Chalikov¹ Alexander V. Babanin²

1. Russian Academy of Science, Saint Petersburg, Russia; 2. University of Melbourne, Melbourne, VIC, Australia

Phase-Resolved Reconstruction Algorithm and Deterministic Prediction of Nonlinear Ocean Waves from Spatiotemporal Optical Measurements OMAE2018-78367Nicolas Desmars¹ Yves Pérignon¹ Guillaume Ducroz¹ Charles-Antoine Guérin²Stephan T. Grilli³ Pierre Ferrant¹

1. École Centrale de Nantes, LHEEA Lab. (ECN/CNRS), Nantes, France; 2. Institut Méditerranéen d'Océanologie, Université de Toulon, La Garde, Toulon, France;

3. Department of Ocean Engineering, University of Rhode Island, Kingston, RI, USA

Polar and Arctic Sciences and Technology**7-5-1 Full Scale Measurements and Ice Model Tests**

Tuesday June 19

Room: **Baden Baden** | 15:30 – 17:30

Session Chair: Erik Veitch, Memorial University of Newfoundland, Canada

Session Co-Chair: Sören Ehlers, Technical University of Hamburg, Germany

Study on Resistance Performance of Ice-breaking Tanker According to Ship's Length OMAE2018-77043Seong-Rak Cho¹ Jin-Ho Jang¹ Cheol-Hee Kim¹ Eun Jin Oh²Kuk Jin Kang² Sungsu Lee³ Yong-Chul Lee⁴

1. KRISO, Daejeon, Korea; 2. Korea Research Institute of Ships and Ocean Engineering, Daejeon, Korea; 3. Chungbuk National University, Cheongju, Korea; 4. Samsung Heavy Industries, Daejeon, Korea

The Calculation of the Propulsion in Ice Field using the Alternative System of the Propeller-Hull Interaction Coefficients OMAE2018-77210

Grigori Kanevskii, Aleksandr Klubnichkin, Kirill Sazonov

Krylov State Research Centre, Saint Petersburg, Russia

An Analysis on the Change of Ship Speed According to Ice Load Signal in Continuous Icebreaking and Ramming OMAE2018-77638Tak-Kee Lee¹ Se-Jin Ahn¹ Woo-Seong An¹ Kyungsik Choi²

1. Gyeongsang National University, Tongyeong-si, Korea;

2. Korea Maritime and Ocean University, Yeongdo-gu, Busan, Korea

Towards a Novel Type of Ice for Model Tests with Vertically Sided Structures OMAE2018-77850

Gesa Ziemer

HSVA, Hamburg, Germany

CFD and FSI**8-3-2 Risers and Pipelines II**

Tuesday June 19

Room: **Dresden** | 15:30 – 17:30

Session Chair: Michael Tognarelli, BP America Production Co., USA

Session Co-Chair: Jie Wu, SINTEF Ocean, Norway

Numerical Investigation of Wave-Induced Scour around Submerged Pipeline in Shoaling Conditions OMAE2018-78440Mingming Liu¹ Ming Zhao² Lin Lu³

1. Western Sydney University, Penrith, NSW, Australia; 2. Western Sydney University, Kingswood, NSW, Australia; 3. Dalian University of Technology, Dalian, China

Numerical Study on the Migration of Two Spheres in Upward Pipe Flow OMAE2018-77393

Lei Liu, Haining Lu, Jianmin Yang, Xinliang Tian, Tao Peng, Jun Li

Shanghai Jiao Tong University, Shanghai, China

Experimental and Numerical Study of Vortex-Induced Vibrations on a Spool Model OMAE2018-77305David Gross¹ Yann Roux² Benjamin Rousse³ FrancoisPetrie³ Ludovic Assier⁴ Matthieu Minguez²

1. K-Epsilon, Valbonne, France; 2. K-Epsilon, Sophia Antipolis, France; 3. Oceanide, La Seyne

sur Mer, France; 4. TOTAL E&P Recherche & Développement, Courbevoie, France; 5. SEAL

Engineering (TechnipFMC subsidiary), Nimes, France

3-D Numerical Simulations of Subsea Jumper Transporting Intermittent Slug Flows OMAE2018-77299

Jihyeon Kim, Narakorn Srinil

Newcastle University, Newcastle upon Tyne, United Kingdom

Ocean Renewable Energy**9-1-6 Floating Wind Turbine Experimental Testing and Validation I**

Tuesday June 19

Room: **Estrasburgo** | 15:30 – 17:30

Session Organizer: Ilmas Bayati, Politecnico di Milano

Department of Mechanical Engineering, Italy

Session Co-Chair: Erin Bachynski, NTNU, Norway

Control of Floating Offshore Wind Turbines: Reduced-Order Numerical Modelling and Real-time Implementation for Wind Tunnel Tests OMAE2018-77840Alessandro Fontanella¹ Ilmas Bayati² Marco Belloli¹

1. Politecnico di Milano, Milano, Italy; 2. Politecnico di Milano Department of Mechanical Engineering, Milano, Italy

Hybrid Scaled Testing of a 5MW Floating Wind Turbine using the SiL Method Compared with Numerical Models OMAE2018-77853

Felipe Vittori¹ Faisal Bouchotrouh² Frank Lemmer³ Jose Azcona⁴
 1. CENER, Navarra, Spain; 2. National Renewable Energy Centre, Pamplona, Spain;
 3. University of Stuttgart, Stuttgart, Germany; 4. CENER, Sarriguren, Spain

The TripleSpar Campaign: Validation of a Reduced-Order Simulation Model for Floating Wind Turbines OMAE2018-78119

Frank Lemmer¹ Wei Yu¹ Po Wen Cheng¹ Antonio Pegalajar-Jurado²
 Michael Borg³ Robert F Mikkelsen³ Henrik Bredmose⁴
 1. University of Stuttgart, Stuttgart, Germany; 2. Technical University of Denmark (DTU), Kgs Lyngby, Denmark; 3. Technical University of Denmark (DTU), Copenhagen, Denmark;
 4. DTU Wind, Copenhagen, Denmark

The Effect of Yaw Error on the Mooring Systems of Floating Offshore Wind Turbines in Extreme Weather Conditions OMAE2018-77225

Evelyn Hunsberger, Spencer T. Hollowell, Casey M. Fontana, Sanjay R. Arwade
 University of Massachusetts Amherst, Amherst, MA, USA

Experimental Investigation of Negative Damping Effects for a TLP Type Offshore Wind Turbine OMAE2018-77256

Masaaki Aoki¹ Sharath Srinivasamurthy¹ Kazuhiro Iijima²
 Naoyuki Hara¹ Tomoki Ikoma³ Yasunori Nihei¹
 1. Osaka Prefecture University, Sakai, Japan; 2. Dept of NAOE, Osaka University, Osaka, Japan; 3. Nihon University, Funabashi, Japan

Ocean Renewable Energy

9-5-3 Design and Resources

Tuesday June 19 Room: **Paris** | 15:30 – 17:30

Session Chair: Madjid Karimirad, Queen's University Belfast, United Kingdom
 Session Co-Chair: Arturo Ortega, Universidad Nacional de Ingeniería (UNI), Peru
 Session Co-Chair: Marina Pérez de la Portilla, Universidad Politécnica de Madrid, Spain

The Effect of Blade Pitch and Reynolds Number on the Performance of Cross-flow Turbines OMAE2018-77658

Miguel Somoano, Francisco Huera-Huerta
 Universitat Rovira I Virgili, Tarragona, Spain

Effect of Wave-Current Interaction on Strong Tidal Current OMAE2018-78121

Aleksandar Jakovljevic¹ Martin Dumont² Frederic Dias¹
 1. University College Dublin, Dublin, Ireland; 2. Bureau Veritas, Paris, France

ADCP Observation and Numerical Model Prediction of Tidal Currents near Koju Island OMAE2018-78220

Tsubasa Kodaira, Takuji Waseda
 The University of Tokyo, Kashiwa, Japan

Design of a Tidal Turbine Array for the Bohai Strait, China OMAE2018-77169

Lei Chen¹ Paul Bonar² Thomas Adcock¹
 1. University of Oxford, Oxford, United Kingdom;
 2. University of Edinburgh, Edinburgh, United Kingdom

Petroleum Technology

11-7-1 Well Plugging and Abandonment

Tuesday June 19 Room: **Potsdam** | 15:30 – 17:30

Session Chair: Mahmoud Khalifeh, UiS, Norway
 Session Co-Chair: Babak Akbari, Louisiana State University, USA

Casing Removal Tests in Laboratory Setup OMAE2018-77875

Ali Taghipour, Jan David Ytrehus, Anna Stroisz
 SINTEF, Trondheim, Norway

Integrated Assessment of the Risk of Cross Flow in the Overburden in Support of the Gyda Decommissioning Project OMAE2018-77922

Etienne Reding, Helge Vindheim
 Repsol Norge, Stavanger, Norway

Laboratory Test on Cement Plug Integrity OMAE2018-78347

Nils Opedal¹ Anisa Corina² Torbjorn Vralstad³
 1. SINTEF Petroleum Research, Trondheim, Norway; 2. Norwegian University of Science and Technology, Trondheim, Norway; 3. SINTEF, Trondheim, Norway

Permanent Plug and Abandon of a Subsea Well with Obstructed Well Access – a Success Story OMAE2018-78532

Mikolaj Stanislawek
 Statoil ASA, Stjordal, Norway

Shale as a Sealing Barrier around Deep Wells OMAE2018-78749

Erling Fjær, Idar Larsen
 SINTEF Industry, Trondheim, Norway

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-4-3 Renewable Energy Offshore III

Tuesday June 19 Room: **Bristol** | 15:30 – 17:30

Session Chair: María J. Legaz, University of Cádiz, Spain
 Session Co-Chair: Xing Hua Shi, Jiangsu University of Science and Technology, China

Study of a Hybrid Renewable Energy Platform: W2POWER

OMA2018-77690
 María J. Legaz¹ Pedro Mayorga² Javier Fernández² Daniel Coronil¹
 1. University of Cádiz, Cádiz, Spain; 2. EnerOcean SL, Malaga, Spain

Experimental Study on the Wave Load of Monopile and Jacket Type Base of the Offshore Wind Turbine OMAE2018-77715

Jing Zhang¹ Qin Liu¹ Xing Hua Shi¹ Carlos Guedes Soares²
 1. Jiangsu University of Science and Technology, Zhenjiang, China; 2. Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

Fully-Coupled Aero-Hydrodynamic Simulation of Floating Offshore Wind Turbines with Two Different Methods OMAE2018-78368

Ping Cheng, Decheng Wan
 Shanghai Jiao Tong University, Shanghai, China

Numerical and Experimental Analysis of a Hybrid Wind-Wave Offshore Floating Platform's Hull OMAE2018-78744

Thiago S. Hallak¹ José F. Gaspar¹ Mojtaba Kamarlouei¹ Miguel Calvário¹
 Mario J. G. C. Mendes² Florent Thiebaut³ Carlos Guedes Soares⁴
 1. CENTEC (IST), Lisboa, Portugal; 2. ISEL - Instituto Superior de Engenharia de Lisboa, Lisboa, Portugal; 3. Lir-NOTF, mAREI centre, University College Cork (UCC), Cork, Ireland;
 4. Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-7-4 Structural Reliability and Risk-Based Maintenance IV

Tuesday June 19

Room: **Oxford** | 15:30 – 17:30

Session Chair: Bernt Leira, NTNU, Norway

Session Co-Chair: Torfinn Horte, DNV GL, Norway

Assessment of Methods for Short-term Analysis of Riser Collision Probability OMAE2018-78318

Ping Fu, Bernt Leira, Dag Myrhaug

Norwegian University of Science and Technology, Trondheim, Norway

Reliability Analysis of Short Term Mooring Tension of a Semi-Submersible System OMAE2018-78751

Xu Sheng¹ Carlos Guedes Soares¹ Ângelo Teixeira²

1. Instituto Superior Técnico, Universidade de Lisboa, Lisbon, Portugal; 2. Centre for Marine Technology and Ocean Engineering (CENTEC)/Instituto Superior Técnico, Lisbon, Portugal

Probabilistic Response of Composite Plates for Damage Initiation due to Low Velocity Impact OMAE2018-78690

Shivdayal Patel¹ Dr. Suhail Ahmad²

1. IITDM Jbalpur, Jabalpur, India; 2. Indian Institute of Technology Delhi, New Delhi, India

Casing Collapse Design using Structural Reliability Analysis for a Subsea Well on the Norwegian Continental Shelf OMAE2018-78767

David Buchmiller¹ Arve Bjorset² Torfinn Horte¹ Sune Pettersen¹

1. DNV GL, Hovik, Norway; 2. Statoil, Ranheim, Norway

Honoring Symposium for Professor Bernard Molin on Marine and Offshore Hydrodynamics

13-4-1 Floating Foundations for Wind Turbines

Tuesday June 19

Room: **Londres** | 15:30 – 17:30

Session Chair: Kazuhiro Iijima, Dept of NAOE, Osaka University, Osaka, Japan

Hydrodynamics around a Deep-Draft Semi-Submersible with Various Corner Shapes OMAE2018-77135

Yibo Liang, Longbin Tao

University of Strathclyde, Glasgow, United Kingdom

Modeling of a Semisubmersible Floating Wind Platform in Severe Waves OMAE2018-77680

Irene Rivera-Arreba¹ Niek Bruinisma² Erin Bachynski³

Axelle Viré⁴ Bo T. Paulsen² Niels G. Jacobsen²

1. TU Delft/NTNU/Deltares, Delft, Netherlands; 2. Deltares, Delft, Netherlands; 3. NTNU, Trondheim, Norway; 4. TU Delft, Delft, Netherlands

Study of Viscous Effects on Wave Drift Forces on a Rectangular Pontoon with a Damping Plate by using CFD Code Openfoam OMAE2018-78053

Adrien Courbois¹ Emmanuel Tcheuko² Benjamin Bouscasse²

Youngmyung Choi² Olivier Kimmoun³ Riccardo Mariani¹

1. Ideol, La Ciotat, France; 2. Ecole Centrale de Nantes, Nantes, France; 3. Ecole Centrale Marseille, Marseille, France

Slewing Effect of Twin Vertical Axis Turbines Supported by a Floating Platform Able to Rotate around a Single Mooring System OMAE2018-78410

Kazuma Kusanagi, Sharath Srinivasamurthy, Yasunori Nihei

Osaka Prefecture University, Sakai, Japan

Numerical and Experimental Investigation of the Wave Loading on a Three-legged Offshore Wind Turbine Jacket Platform OMAE2018-78416

Vanessa Katsardi¹ Konstantinos Chatziioannou² Apostolos

Koukouselis² Ioannis Chatjigeorgiou³ Euripidis Mistakidis²

1. Civil Engineering Dept, Volos, Greece; 2. University of Thessaly, Volos, Greece; 3. National Technical University of Athens, Zografos Athens, Greece

Oil&Gas Basque Industry: Technology for an Offshore Future

16:00 – 18:00

Location: **Marsela**

With over 50 organizations and R&D agents in a radius of less than 60 kilometres, the Basque Country is one of the regions in the world with a larger concentration of companies in the Oil&Gas supply chain. In this session, a brief introduction to the Oil&Gas Basque Industry value chain will be followed by short presentations of key organisations such as Tubacex, Vicinay, Euskal Forging, Erreka Fastening Solutions and Tecnalía, which will also be showing some of their latest technological advances. After the presentation, coffee and pastries will be served and attendees will have the opportunity to network with the speakers.

Sponsored by Oil&Gas Basque Industry



Afternoon Lecture Series

17:45 – 18:30

Location: **Londres**



Prof. Kim Vandiver

New Insights on the Vortex-induced Vibrations of Long Flexible Cylinders

Dr. Kim Vandiver, *Professor of Mechanical and Ocean Engineering, Dean for Undergraduate Research, Director, Office of Experiential Learning, Massachusetts Institute of Technology*

See Afternoon Lecture Series, page 24 for more details.

Afternoon Drinks

18:30 – 19:30

Location: **Venecia / Milán / Roma**

See Social Events, page 14 for more details.

Afternoon Drinks sponsored by Oil&Gas Basque Industry



Wednesday, June 20

Time	Title	Location
08:30 – 17:00	Exhibition open	Venecia/Milán/Roma
08:30 – 10:00	Concurrent Sessions	See pages 58–62 for session titles, authors and locations
10:00 – 10:30	Refreshment Break	Venecia/Milán/Roma
10:30 – 12:00	Concurrent Sessions	See pages 62–66 for session titles, authors and locations
12:00 – 13:30	Lunch	Buffet Madrid/France-Madrid Gallery/Lyon/Toulouse
13:30 – 15:00	Concurrent Sessions	See pages 66–70 for session titles, authors and locations
15:00 – 15:30	Refreshment Break	Venecia/Milán/Roma
15:30 – 17:30	Concurrent Sessions	See pages 70–75 for session titles, authors and locations
17:45 – 18:30	Afternoon Lecture Series	Londres
19:30 – 24:00	Conference Banquet	Offsite: Palacio del Negralejo

CONCURRENT SESSIONS

08:30 – 10:00

Offshore Technology

1-2-3 Dynamic Positioning

Wednesday June 20 Room: **Bonn** | 08:30 – 10:00

Session Chair: Francesco Scibilia, Statoil ASA, Norway

Session Co-Chair: Dimitris Chalkias, GustoMSC, Netherlands

Dynamic Positioning System: Reliability Assessment and Forecasting of Dynamic Positioning Reliability Index (DP-RI) during Complex Marine Operations OMAE2018-77267

Charles Fernandez¹ Shashi Bhushan Kumar² Rosemary Norman³

Wai Lok Woo³ Arun Kr. Dev⁴

1. DNV GL Singapore Pte Ltd, Singapore, Singapore; 2. Det Norske Veritas Pte Ltd, Singapore, Singapore; 3. Newcastle upon Tyne, Newcastle, United Kingdom; 4. Newcastle University Singapore, Singapore, Singapore

DP-stability during Heavy Lift Operations using a Modified Kalman Filter OMAE2018-77901

Eelco Harmsen¹ Radboud Van Dijk¹ Petter Stuberg²

1. Heerema Marine Contractors, Leiden, Netherlands; 2. Kongsberg Maritime, Kongsberg, Norway

Improved FPSO Offloading Strategy based on Analysis including DP System OMAE2018-78465

Gerhard Gundersen¹ Petter Stuberg² Timothy Edward Kendon³ Svein-Arne Reinholdtsen⁴

1. Kongsberg Maritime, Asker, Norway; 2. Kongsberg Maritime, Kongsberg, Norway; 3. Statoil ASA, Trondheim, Norway; 4. Statoil ASA, Stjørdal, Norway

Validation of Numerical Models for the Drift Off Study in Drilling Vessels using Full Scale Measurements OMAE2018-77319

Raul Dotta¹ Eduardo A. Tannuri¹ Pedro C. de Mello¹ Gustavo R. Diederichs²

Daniel F. Cruz³ Anderson T. Oshiro³

1. Universidade de São Paulo, São Paulo, SP, Brazil; 2. Petrobras, Macaé, RJ, Brazil; 3. Petrobras, Rio de Janeiro, RJ, Brazil

Fully Coupled Time Domain Simulation Model Used for Planning and Offshore Decision Support OMAE2018-78446

Michael Chrolenko¹ Gerhard Gundersen¹ Tom E. Eikanger² Boje Tveraaen³

1. Kongsberg Maritime, Asker, Norway; 2. Statoil ASA, Bergen, Norway; 3. Statoil ASA, Oslo, Norway

Offshore Technology

1-5-3 FLNG Technology

Wednesday June 20 Room: **Colonia** | 08:30 – 10:00

Session Chair: Fan Joe Zhang, China Merchants Offshore

Technology Research Center, China

Session Co-Chair: Marc Cahay, TechnipFMC, France

The “True” Digital Twin Concept for Fatigue Re-assessment of Marine Structures OMAE2018-77915

Ulf T. Tygesen, Jonas Vestermark, Michael S. Jepsen, Niels Dollerup, Anne Pedersen

Ramboll Oil & Gas, Esbjerg, Denmark

Advanced Liquefaction Cycle for Natural Gas OMAE2018-77236

Mungyu Kim¹ Youngrae Kim¹ Minseok Kim² Minki Kim²

Donghun Lee¹ Joonho Min¹ Hyobin Kim¹ Kihwan Lee¹

1. Samsung Heavy Industries, Seongnam, Korea; 2. Samsung Heavy Industries, Gyeonggi-do, Korea

Pump Tower Loads in Spherical Tanks Onboard LNG Carriers Scaled by Characteristic Vessel Response OMAE2018-78742

Martin Slagstad¹ Finn-Christian W. Hanssen¹ Olav Rognebakke²

1. Moss Maritime AS, Oslo, Norway; 2. DNV GL, Høvik, Norway

An Experimental and Numerical Assessment of Moss-Type LNG Carrier Seakeeping Moored to PETRONAS FLNG in Partially Filled Condition OMAE2018-77892

Erwan Auburtin¹ Guillaume Toutin¹ Ahmad Fahmi Mahmud²

1. TechnipFMC, La Defense Cedex, France; 2. PETRONAS, Kuala Lumpur, Malaysia

Structures, Safety and Reliability

2-3-1 Probabilistic Response Models I

Wednesday June 20 Room: **Munich** | 08:30 – 10:00

Session Chair: Lance Manuel, University of Texas at Austin, Austin, TX, United States

Session Co-Chair: Ning Ma, Shanghai Jiao Tong University, Shanghai, China

Long-Term Analysis of Extreme Global Restoring Loads on a FPSO Turret Structure using a Coupled Model OMAE2018-77579

Isabel Jimenez Puente¹ Kjell Larsen²

1. Statoil, Stavanger, Norway; 2. Statoil, Trondheim, Norway

Nonlinear Strain Estimation based on Linear Parameters OMAE2018-77785

Bruna Nabuco¹ Tobias Friis¹ Marius Tarpø² Sandro Amador¹
Evangelos I. Katsanos¹ Rune Brincker¹

1. Technical University of Denmark, Kgs Lyngby, Denmark; 2. Aarhus University, Aarhus C, Denmark

Short-term Extreme Motions of a Spar Floating Wind Turbine Estimated through a 1:30 At-Sea Experiment OMAE2018-78745

Carlo Ruzzo¹ Nilanjan Saha² Felice Arena¹

1. Università Mediterranea di Reggio Calabria, Reggio Calabria, Italy; 2. Indian Institute of Technology Madras, Chennai, TN, India

On Efficient Long-term Extreme Response Estimation for a Moored Floating Structure OMAE2018-78763

Hyeong Uk Lim¹ Lance Manuel¹ Ying Min Low²

1. University of Texas at Austin, Austin, TX, USA;
2. National University of Singapore, Singapore, Singapore

Structures, Safety and Reliability

2-4-1 Fatigue and Fracture Reliability I

Wednesday June 20 Room: **Dusseldorf** | 08:30 – 10:00

Session Chair: Helene Haaheim, Force Technology AS, Norway

Session Co-Chair: Yordan Garbatov, University of Lisbon, Portugal

Investigations into Uncertainties in Fatigue Damage during Transport Phase for Topside Structures OMAE2018-77292

Suji Zhu¹ Helene Haaheim² Marc Lefranc²

1. 7waves AS, Son, Norway; 2. Force Technology AS, Hvalstad, Norway

Investigation of Fatigue Damage for Stiffened Plates in Splash Zone for a Semi-Submersible OMAE2018-77294

Suji Zhu¹ Hans C. Rentsch² Marc Lefranc³ Helene Haaheim³

1. 7waves AS, Son, Norway; 2. Neptune Energy, Sandnes, Norway;
3. Force Technology AS, Hvalstad, Norway

Materials Technology

3-8-1 Life Extension and Integrity Assessment

Wednesday June 20 Room: **Stuttgart** | 08:30 – 10:00

Session Chair: Yanhui Zhang, TWI Limited, United Kingdom

Session Co-Chair: Gerhard Ersdal, Petroleum Safety Authority, Norway

Session Co-Chair: Morten Langøy, Petroleum Safety Authority, Norway

Study of Piezomagnetic Behaviors Surrounding X80 Steel Subjected to Cyclic Stress OMAE2018-77280

Sheng Bao, Shuzhuang Bai, Yibin Gu

Zhejiang University, Hangzhou, China

Remaining Life Assessment and Life Extension of Offshore Pipelines

OMA2018-78482

Jens Tronskar

Det Norske Veritas Pte Ltd, Singapore, Singapore

Bolted Connections in a Safety Perspective OMAE2018-78597

Morten Langøy, Terje Andersen

Petroleum Safety Authority, Stavanger, Norway

Decision Making through the Application of Bayesian Network for Internal Corrosion Assessment of Pipelines OMAE2018-78677

Jiana Zhang¹ Francois Ayello² Guanlan Liu²

1. DNV GL, Perth, WA, Australia; 2. DNV GL, Dublin, OH, USA

Pipelines, Risers, and Subsea Systems

4-1-5 Flexible Pipes V

Wednesday June 20

Room: **Frankfurt** | 08:30 – 10:00

Session Chair: Antoine Félix-Henry, MArine Renewable Energies, France

Session Co-Chair: Jun Yan, Dalian University of Technology, China

Session Co-Chair: Krassimir Doynov, ExxonMobil Production Company, USA

A Theoretical Method to Estimate the Fatigue Life of Tensile Armors of Flexible Pipes OMAE2018-77175

Kaien Jiang¹ Yutian Lu² Yong Bai³

1. Zhejiang University, Hangzhou, China; 2. Jiangnan New Town Construction Management Committee, Hangzhou, China; 3. Zhejiang University, Zhejiang, China

Fatigue Analysis of Metallic Strips Flexible Pipe OMAE2018-77384

Guowei Sun¹ Peihua Han¹ Yuxin Xu¹ Yong Bai² Hamad Hameed¹

1. Zhejiang University, Hangzhou, China; 2. Zhejiang University, Zhejiang, China

Efficient Computation of Irregular Wave Wire Stresses in Flexible Risers OMAE2018-78405

Gabriel Rombado¹ Arya Majed² Nathan Cooke² Dharma Theja R. Pasala²

Xianglei Ni² Andrew Low³

1. ExxonMobil Production Company, Spring, TX, USA;

2. INTECSEA, Houston, TX, USA; 3. INTECSEA, Woking, United Kingdom

Mechanical Behavior After Stress Relaxation in PVDF OMAE2018-77667

Rafael Luis Menezes Freitas¹ Erica Chaves² Sylvania Teixeira³ Celio Costa⁴

1. Materials Processing and Characterization Laboratory - COPPE / UFRJ / BRAZIL, Rio de Janeiro, RJ, Brazil; 2. Petrobras, Rio de Janeiro, RJ, Brazil; 3. CENPES/PETROBRAS, Rio de Janeiro, RJ, Brazil; 4. Universidade Federal Do Rio De Janeiro, Rio de Janeiro, RJ, Brazil

Ocean Space Utilization

5-3-1 Deepsea Mining and Underwater Technology

Wednesday June 20

Room: **Berlin** | 08:30 – 10:00

Session Chair: Tomoya Inoue, JAMSTEC, Japan

Session Co-Chair: Sotaro Masanobu, National Maritime

Research Institute of Japan, Japan

Experimental Studies on Air-lift pump for Deep Sea Mining

OMA2018-77812

Satoru Takano, Sotaro Masanobu, Shigeo Kanada, Masao Ono, Hiroki Sasagawa

National Maritime Research Institute, Tokyo, Japan

Cutting of Fluid Saturated Rock: Dilation vs Consolidation

OMA2018-78042

Rudy Helmons¹ Emmanuel Detournay² Mario Alvarez Grima³ Cees van Rhee¹

1. Delft University of Technology, Delft, Netherlands; 2. University of Minnesota, Minneapolis, MN, USA; 3. IHC MTI B.V., Delft, Netherlands

Development of Acoustic Communication and Positioning System for Operation of Multiple AUVs OMAE2018-78278

Yoshitaka Watanabe, Koji Meguro, Mitsuyasu Deguchi, Takuya Shimura

JAMSTEC, Yokosuka, Japan

Ocean Engineering

6-8-2 Fluid-Structure, Multi-Body and Wave-Body Interaction II

Wednesday June 20

Room: **Marsella** | 08:30 – 10:00

Session Chair: Nuno Fonseca, SINTEF Ocean, Norway

Wave Force on a Fixed Horizontal Circular Cylinder

Partially Submerged OMAE2018-77939

Monica C. Silva¹ Marcelo A. Vitola² Paulo de Tarso T. Esperança² Sergio H. Sphaier³
1. LabOceano-COPPE/UFRJ, Rio de Janeiro, RJ, Brazil; 2. LabOceano COPPE/Federal University of Rio de Janeiro, Rio de Janeiro, RJ, Brazil; 3. Federal University of Rio de Janeiro, Niteroi, RJ, Brazil

Study of Hydrodynamic Forces on Complex Structures OMAE2018-78250

Ann-Sofie Bjørke¹ Erik Damgaard Christensen² Stefan Carstensen²
Kasper Pagh Petersen³ Xerxes Mandviwalla² Trygve Kristiansen⁴ Rolf Baarholm⁵
1. NOV Flexibles, Brønby, Denmark; 2. Technical University of Denmark, Kgs Lyngby, Denmark; 3. Ramboll, Copenhagen, Denmark; 4. NTNU, Trondheim, Norway; 5. Statoil ASA, Stjørdal, Norway

Numerical Investigation of Regular Waves Interaction with Two Fixed Cylinders in Tandem Arrangement OMAE2018-78373

Zhenghuo Liu¹ Decheng Wan¹ Changhong Hu²
1. Shanghai Jiao Tong University, Shanghai, China; 2. Kyushu University, Fukuoka, Japan

Coupled Dynamics Simulation of Submerged Floating Tunnel for Various System Parameters and Wave Conditions OMAE2018-78687

Chungkuk Jin¹ Joseph Moo-Hyun Kim¹ Junho Choi¹ Woo-Sun Park²
1. Texas A&M University, College Station, TX, USA; 2. Korea Institute of Ocean Science & Technology, Busan, Korea

Ocean Engineering

6-13-1 Metocean I: Measurement and Modelling of Currents and Solitons

Wednesday June 20

Room: **Burdeos** | 08:30 – 10:00

Session Chair: Gus Jeans, Oceananalysis Ltd, United Kingdom

Session Co-Chair: Kevin Ewans, MetOcean Research Ltd, New Zealand

Comparison of in situ Current Measurement Methods, the Accuracy Achieved in the Field and Recommendations for Engineering Design Applications OMAE2018-77170

Gregory Bush, Carey Nolan
RPS Australia West Pty Ltd, Jolimont, WA, Australia

The Effect of Temporal Length of Current Measurements on the Derived Design Level OMAE2018-77769

Martin Arntsen¹ Juliane Borge¹ Ole-Hermann Strømmesen² Edmond Hansen¹
1. Multiconsult, Tromsø, Norway; 2. Lerøy Seafood Group, Tromsø, Norway

The Quantification of Soliton Current Profiles for Offshore Engineering OMAE2018-77863

Gus Jeans¹ Alfred Osborne² Chris Jackson³
1. Oceananalysis Ltd, Wallingford, United Kingdom; 2. Nonlinear Wave Research Corporation, Alexandria, VA, USA; 3. Global Ocean Associates, Alexandria, VA, USA

A Methodology to Characterize Internal Solitons in the Ocean OMAE2018-77869

Henrique Coelho, Zhong Peng, Dave Sproson, Jill Bradon
Fugro GB Marine Ltd, Wallingford, United Kingdom

Polar and Arctic Sciences and Technology

7-6-1 Ice Management and Operations in Ice

Wednesday June 20

Room: **Baden Baden** | 08:30 – 10:00

Session Chair: Feng Wang, Shanghai Jiao Tong University, China

Session Co-Chair: Sören Ehlers, Technical University of Hamburg, Germany

Application of Special-purpose Equipment for Management of Ice Buildups around Prirazlomnaya Platform OMAE2018-77406

Evgeny Karulin¹ Marina Karulina¹ Mikhail Kazantsev¹
Alexander Proniashkin¹ Dmitry Zaikin²
1. The Krylov State Research Centre, Saint Petersburg, Russia; 2. Gazprom Neft Shelf LLC, Saint Petersburg, Russia

Investigating the Influence of Bridge Officer Experience on Ice Management Effectiveness using a Marine Simulator

Experiment OMAE2018-78080

Erik Veitch, David Molyneux, Jennifer E. Smith, Brian J. Veitch
Memorial University of Newfoundland, St. John's, NL, Canada

Challenges of Speedy Icebreaker-Assisted Operation of Heavy-tonnage Vessels in Ice OMAE2018-77397

Aleksei Dobrodeev, Kirill Sazonov
Krylov State Research Centre, Saint Petersburg, Russia

Advances in the Simulation of Ship Navigation in Brash Ice OMAE2018-78785

Julio García Espinosa
International Centre for Numerical Methods in Engineering, Barcelona, Spain

CFD and FSI

8-1-3 Multi-Hull

Wednesday June 20

Room: **Dresden** | 08:30 – 10:00

Session Chair: Rajeev Jaiman, National University of Singapore, Singapore

Session Co-Chair: Stephen Cosgrove, Altair, USA

Study on the Porpoising Phenomenon of High-Speed Trimaran Planing Craft OMAE2018-77216

Yu-Ming Yuan¹ Chao Wang²
1. Harbin Engineering University, Zhongshan, China; 2. Harbin Engineering University, Harbin, China

Experimental Study on Vortex-Induced Vibration of Floating Circular Cylinders with Low Aspect Ratio and Different Free-End Corner Shapes OMAE2018-77218

Rodolfo T. Gonçalves¹ Keigo Sakata¹ Dennis M. Gambarine² Murilo M. Cicolini³
Shinichiro Hirabayashi¹ Gustavo R. S. Assi³
1. The University of Tokyo, Kashiwa-shi, Japan; 2. Technomar Engenharia Oceânica, São Paulo, SP, Brazil; 3. Univeristy of Sao Paulo, Sao Paulo, SP, Brazil

Numerical Simulation of Hydrodynamic Performance of Multi-Hull Catamaran with 3DoF Motion OMAE2018-77241

Rijie Li¹ Liwei Liu² Lixiang Guo² Dakui Feng² Xianzhou Wang²
1. China Ship Development and Design Center, Wuhan, China; 2. Huazhong University of Science and Technology, Wuhan, China

CFD Simulations of Helical Strakes Reducing Vortex Induced Motion of a Semi-Submersible OMAE2018-78372

Jiawei He¹ Decheng Wan¹ Zhiqiang Hu²
1. Shanghai Jiao Tong University, Shanghai, China; 2. School of Marine Science & Technology, Newcastle University, Newcastle, United Kingdom

Ocean Renewable Energy

9-1-5 Offshore Wind Turbine Hydrodynamics

Wednesday June 20 Room: **Estrasburgo** | 08:30 – 10:00

Session Chair: Frank Lemmer, University of Stuttgart, Germany

Session Co-Chair: Fons Huijs, Gustomsc, Netherlands

On the use of the White-Noise Approximation for Modelling the Slow-drifts of a FOWT: An example using FAST OMAE2018-77222

Alexandre N. Simos, Lucas Henrique Souza do Carmo, Ewerton Carlos Camargo
University of Sao Paulo, Sao Paulo, SP, Brazil

Application of Morison Equation in Irregular Wave Trains with High Frequency Waves OMAE2018-77913

Pau Trubart, Climent Molins, Philipp Hufnagel, Daniel Alarcón, Alexis Campos
Universitat Politècnica de Catalunya, Barcelona, Spain

Comparison and Validation of Hydrodynamic Load Models for a Semi-Submersible Floating Wind Turbine OMAE2018-77676

John Marius Hegseth¹ Erin Bachynski¹ Madijid Karimrad²

1. Norwegian University of Science and Technology, Trondheim, Norway;
2. Queen's University Belfast, Belfast, United Kingdom

Using Nonlinear Wave Kinematics to Estimate the Loads on Offshore Wind Turbines in 3-hour Sea States OMAE2018-77807

Tim Bunnik, Erik-Jan de Ridder
MARIN, Wageningen, Netherlands

Offshore Geotechnics

10-1-1 Seabed Interaction, Processes and Properties

Wednesday June 20 Room: **Paris** | 08:30 – 10:00

Session Chair: Dongsheng Qiao, Dalian University of Technology, China

Numerical Analysis of Steep Wave-Induced Seabed Response and Liquefaction around Gravity-based Offshore Foundations OMAE2018-77046

Yuzhu Li, Muk Chen Ong, Ove Tobias Gudmestad, Bjørn Helge Hjertager
University of Stavanger, Stavanger, Norway

Gravity Based Foundations for Offshore Wind Turbines: Cyclic Loading and Liquefaction OMAE2018-77082

Martijn van Wijngaarden¹ Piet Meijers² Tim Raaijmakers²

Richard De Jager³ Kenneth Gavin⁴

1. Volker Staal en Funderingen b.v., Rotterdam, Netherlands; 2. Deltares, Delft, Netherlands;
3. Boskalis, Papendrecht, Netherlands; 4. Delft University of Technology, Delft, Netherlands

The Granular Structure of Two Marine Carbonate Sediments OMAE2018-77087

Ryan Beemer¹ Alexandre Bandini-Maeder² Jeremy Shaw¹ Ulysse Lebrec² Mark J Cassidy³

1. The University of Western Australia, Crawley, WA, Australia; 2. Norwegian Geotechnical Institute - Perth, Perth, WA, Australia; 3. Centre for Offshore Foundation Systems/ The University of Western Australia, Crawley, WA, Australia

Modelling Turbulent Flow in Deformable Highly Porous Seabed and Structures OMAE2018-77318

Hisham Elsafti, Hocine Oumeraci
Leichtweiss-Institute, Dept. Hydromechanics and Coastal Eng., TU Braunschweig, Braunschweig, Germany

Simulation of Working Posture of Deepwater Gravity Sampling Device using Openfoam OMAE2018-77442

Zhe Ma, Danya Kong, Yin Wang, Nianxin Ren, Gangjun Zhai
Dalian University of Technology, Dalian, China

Petroleum Technology

11-1-2 Arctic Exploration and Drilling Challenges

Wednesday June 20 Room: **Potsdam** | 08:30 – 10:00

Session Chair: Mohammad Aziz Rahman, Texas A&M University at Qatar, Qatar

Session Co-Chair: Stephen Butt, Memorial University of Newfoundland, Canada

Petroleum Exploration using New Technologies in 3D Seismic Operations in Arctic Environment – North Slope Alaska OMAE2018-78064

Luis Rodriguez, Juan Fernando Uribe, Pedro Munoz, Roberto Parrado, Nestor Sanabria
Repsol, The Woodlands, TX, USA

State of the Art in 3D Seismic Survey Design for Petroleum Exploration in the Arctic Regions OMAE2018-78172

Pedro Munoz¹ German Ocampo² Nestor Sanabria¹ Juan Fernando Uribe¹

Luis Rodriguez¹ Roberto Parrado¹

1. Repsol, The Woodlands, TX, USA; 2. Repsol, Madrid, Spain

Technical Challenges for the Mantle Drilling OMAE2018-78217

Yasuhiro Namba, Masanori Kyo, Eigo Miyazaki

Japan Agency for Marine Earth Science and Technology, Yokohama, Japan

High Geostress Advantageous for Arctic Oil Field Developments OMAE2018-78629

Bernt Aadnøy, Mesfin Belayneh

University of Stavanger, Stavanger, Norway

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-2-1 Floater Dynamics and Hydrodynamics I

Wednesday June 20 Room: **Bristol** | 08:30 – 10:00

Session Chair: Borja Serván Camas, CIMNE, Spain

Session Co-Chair: Carlos Lopez-Pavon, COREMARINE, Spain

An Experimental Study of Mooring Line Damping in Shallow Water OMAE2018-78535

Wen-Yang Hsu¹ Tzu-Ching Chuang¹ Ray-Yeng Yang² Wei-Ting Hsu³ Krish Thiagarajan⁴

1. Tainan Hydraulics Laboratory, National Cheng Kung University, Tainan, Taiwan;

2. National Cheng Kung University, Tainan, Taiwan; 3. University of Maine, Maine, ME, USA;

4. University of Massachusetts Amherst, Amherst, MA, USA

Analysis of Catenary Mooring Systems based on Truncated Mooring Experiments OMAE2018-78697

Xu Sheng¹ Ji Chunyan² Carlos Guedes Soares¹

1. Instituto Superior Técnico, Universidade de Lisboa, Lisbon, Portugal; 2. Jiangsu University of Science and Technology, Zhenjiang, China

A Comparative Research on Computation Methods for Wave Loads of Semi-Submersible Platform OMAE2018-77421

Pei Zhiyong, Wu Shenyi, Chen Keqiang, Hu Xiaoming, Weiguo Wu

Wuhan University of Technology, Wuhan, China

Numerical Simulations of Peregrine Breathers using a Spectral Element Model OMAE2018-77684

Dimitrios Koukounas¹ Claes Gunnar Eskilsson² Allan P. Engsig-Karup³

1. Chalmers University of Technology, Gothenburg, Sweden; 2. Aalborg University, Aalborg, Denmark; 3. Technical University of Denmark, Kgs Lyngby, Denmark

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-5-2 Ultimate Strength II

Wednesday June 20

Room: **Oxford** | 08:30 – 10:00

Session Chair: Masahiko Fujikubo, Osaka University, Japan

Session Co-Chair: Sang-Rai Cho, University of Ulsan, Korea

Implosion Tests of Aluminium Alloy Tubes under External Hydrostatic Pressure OMAE2018-77375

Sang-Rai Cho¹ Teguh Muttaqie² Sang-Hyun Park¹ Gulgi Choi³ Soonhung Han³ Phillseung Lee³ Yoonsik Cho⁴ Jung Min Sohn⁵

1. University of Ulsan, Ulsan, Korea; 2. Center of Technology for Defense and Security Industries, BPPT, Jakarta, Indonesia; 3. Korean Advanced Institute of Science and Technology, Daejeon, Korea; 4. Agency for Defense Development, Changwon, Korea; 5. Pukyong National University, Busan, Korea

Collapse Analysis of Ship Hull Girder using Hydro-elastoplastic Beam Model OMAE2018-77497

Han Htoo Htoo Ko¹ Akira Tatsumi² Kazuhiro Iijima³ Masahiko Fujikubo⁴

1. Dept of NAOE, Osaka University, Suita, Japan; 2. Osaka University, Osaka, Japan; 3. Dept of NAOE, Osaka University, Osaka, Japan; 4. Osaka University, Suita, Japan

A Numerical Study on the Ultimate Strength of Damaged Tubular Bracing Members under Axial Compression OMAE2018-78021

Ling Zhu¹ Jieliang Kong¹ Qingyang Liu¹ Han Yang¹ Bin Wang²

1. Wuhan University of Technology, Wuhan, China; 2. Brunel University, London, United Kingdom

Numerical and Experimental Research on the Ultimate Strength for a Stiffened Titanium Cylinder OMAE2018-78663

Siming Yuan¹ Qiang Chen²

1. Navy Academy of Armament, Beijing, China; 2. Navy Academy of Armament, Wuhan, China

Honoring Symposium for Professor Bernard Molin on Marine and Offshore Hydrodynamics

13-7-1 Gap and Moonpool Resonance I

Wednesday June 20

Room: **Londres** | 08:30 – 10:00

Session Chair: TBA

Effect of Moonpool Shape and Dimensions on Drillship Operability OMAE2018-77499

Dimitris Chalkias, Jan-Willem Krijger
GustoMSC, Schiedam, Netherlands

On Wave Diffraction of a Two-dimensional Moonpool in a Two-Layer Fluid in Finite Water Depth OMAE2018-77528

Xingyu Song, Xin Xu, Xinshu Zhang, Yunxiang You
Shanghai Jiao Tong University, Shanghai, China

Nonlinearity and Heading Effect of Gap Resonance Relevant to Side-by-Side Offloading OMAE2018-77775

Wenhua Zhao
The University of Western Australia, Perth, WA, Australia

Wave Diffraction on Arrays of Vertical Truncated Cylindrical Bodies OMAE2018-78287

Spyros Mavrakos, Ioannis Chatjigeorgiou, Dimitrios N. Konispoliatis
National Technical University of Athens, Zografou Athens, Greece

REFRESHMENT BREAK

10:00 – 10:30

Location: **Venecia / Milán / Roma**

CONCURRENT SESSIONS

10:30 – 12:00

Offshore Technology

1-2-4 Mooring System Design and Analysis II

Wednesday June 20

Room: **Bonn** | 10:30 – 12:00

Session Chair: Allan Ross Magee, National University of Singapore, Singapore

Session Co-Chair: Ling Wan, Newcastle University, Singapore

The Syrope Method for Stiffness Testing of Polyester Ropes OMAE2018-77944

Erik Falkenberg, Limin Yang, Vidar Åhjem
DNV GL, Høvik, Norway

Parameter Estimation for Synthetic Rope Models OMAE2018-78606

Sam D. Weller¹ Stephen J. Banfield² José Canedo³
1. University of Exeter, Penryn, United Kingdom; 2. Tension Technology International Ltd, Eastbourne, United Kingdom; 3. Lankhorst Euronete, Porto, Portugal

Effects of Mooring Line Design Parameters on the Line Dynamics and Fatigue Response of Subsea Mooring Lines OMAE2018-78716

Hamid Sedghi¹ Mehrdad Kimiaei²
1. BW Offshore, Arendal, Norway;
2. The University of Western Australia, Perth, WA, Australia

Damage Detection of Offshore Platform Mooring Line using Artificial Neural Network OMAE2018-77084

Djoni Sidarta, Jim O'Sullivan, Ho-Joon Lim
TechnipFMC, Houston, TX, USA

Offshore Technology

1-6-1 Wave-Induced Global Load and Response

Wednesday June 20

Room: **Colonia** | 10:30 – 12:00

Session Chair: Kim Jang, TechnipFMC, USA

Session Co-Chair: Daniel Barcarolo, LR, Denmark

A Coupled Potential-Viscous Flow Method for Wave Impact on Semi-Submersible Platform Simulation OMAE2018-78311

Kangping Liao¹ Wenyang Duan¹ Qingwei Ma¹ Binbin Zhao¹ Shan Ma¹ Jang Kim²
1. Harbin Engineering University, Harbin, China; 2. TechnipFMC, Houston, TX, USA

Viscous Drift Forces on a Semi-Submersible in Combined Waves and Current OMAE2018-77713

Joo-Sung Kim, Hyun Joe Kim, Dong Yeon Lee
Samsung Heavy Industries, Daejeon, Korea

New Moonpool Design of Drillship for Operability Improvement

OMAE2018-77144

Seon Oh Yoo¹ Hyun Joe Kim¹ Dong Yeon Lee¹ Booki Kim¹ Seung Ho Yang²
 1. Samsung Heavy Industries, Daejeon, Korea; 2. Ulsan College, Ulsan, Korea

Numerical Investigation of Effects of Bow Flare Angle on Greenwater Overtopping a Fixed Offshore Vessel

OMAE2018-77487

Xiantao Zhang¹ Scott Draper² Hugh Wolgamot¹ Wenhua Zhao¹ Liang Cheng¹
 1. The University of Western Australia, Perth, WA, Australia;
 2. The University of Western Australia, Crawley, WA, Australia

Structures, Safety and Reliability

2-3-2 Probabilistic Response Models II

Wednesday June 20 Room: **Munich** | 10:30 – 12:00

Session Chair: Felice Arena, Univ Mediterranea, Reggio Calabria, Italy

Session Co-Chair: Srinivas Sriramula, University of Aberdeen, Aberdeen, United Kingdom

Long Term Analysis of Steep and Breaking Wave Properties by Event Matching

OMAE2018-78283

Thomas B. Johannessen, Øystein Lande

DNV GL, Høvik, Norway

Realistic Design Waves for Wave-In-Deck Problems

OMAE2018-78411

Arne Bockmann, Odin Gramstad, Jens Bloch Helmers, Øystein Lande

DNV GL, Høvik, Norway

Long-Term Area Statistics for Maximum Crest Height under a Fixed Platform Deck

OMAE2018-77263

Øistein Hagen¹ Jørn Birknes-Berg¹ Ida Håøy Grue¹ Gunnar

Lian² Kjersti Bruserud³ Tone M. Vestbøstad³

1. DNV GL, Høvik, Norway; 2. Statoil / University of Stavanger, Stavanger, Norway; 3. Statoil ASA, Stavanger, Norway

Structures, Safety and Reliability

2-4-2 Fatigue and Fracture Reliability II

Wednesday June 20 Room: **Dusseldorf** | 10:30 – 12:00

Session Chair: Agnes Marie Horn, DNV GL, Norway

Session Co-Chair: Carey L. Walters, TNO, Netherlands

Comparison of Methods to Find the Weibull Stress Parameters

OMAE2018-77038

Okko J. Coppejans, Carey L. Walters

TNO, Delft, Netherlands

Multiaxial Fatigue Analysis of Mooring Chain Links under Tension Loading: Influence of Mean Load and Simplified Assessment Method

OMAE2018-77552

Imanol Martinez Perez¹ Philippe Bastid² Andrei Constantinescu³ Vengatesan Venugopal¹

1. The University of Edinburgh, Edinburgh, United Kingdom; 2. TWI Ltd, Cambridge, United Kingdom; 3. LMS-CNRS, Ecole Polytechnique Palaiseau, Palaiseau, France

A Study on the Stochastic Aspects of the Whipping Vibrations in a Container Ship

OMAE2018-77888

Luis De Gracia¹ Naoki Osawa¹ Kazuhiro Iijima² Toichi Fukasawa³ Hitoi Tamaru⁴

1. Osaka University, Suita, Japan; 2. Dept of NAOE, Osaka University, Osaka, Japan;
 3. National Maritime Research Institute, Mitaka-shi, Japan; 4. Tokyo University of Marine Science and Technology, Koto-ku, Japan

The Effect on Large Container Ships' Fatigue due to Springing Loads Coupling Horizontal and Torsional Vibration

OMAE2018-77982

Hui Li, Huifen Xu, Huilong Ren, Xiaoxi Shen, Yubo Wang

Harbin Engineering University, Harbin, China

Materials Technology

3-9-1 Pipeline Engineering Critical Assessment

Wednesday June 20

Room: **Stuttgart** | 10:30 – 12:00

Session Chair: Alex Stacey, Offshore Safety Division, Health & Safety Executive, United Kingdom

Session Co-Chair: Xin Wang, Carleton University, Canada

Developing Mk Solutions for Fatigue Crack Growth Assessment of Flaws at Weld Root Toes in Girth Welds

OMAE2018-77067

Yanhui Zhang¹ Tyler London² Damaso DeBono²

1. TWI Limited, Cambridge, United Kingdom; 2. TWI Limited, Middlesbrough, United Kingdom

Strain Energy Function Applied to Stress Relaxation of PVDF

OMAE2018-78076

Maria M. Contreras Ramos, Aynor Ariza Gomez, Marysilvia

F. Costa, Celio Costa, Murilo Augusto Vaz

Federal University of Rio de Janeiro, Rio de Janeiro, RJ, Brazil

An Overview of Strain-based Fracture Assessment of Pipelines

OMAE2018-78685

Guiyi Wu¹ Longjie Wang²

1. TWI, London, United Kingdom; 2. TWI Ltd., Cambridge, United Kingdom

Pipelines, Risers, and Subsea Systems

4-1-6 Flexible Pipes VI

Wednesday June 20

Room: **Frankfurt** | 10:30 – 12:00

Session Chair: José Renato M. de Sousa, Federal University of Rio de Janeiro, Brazil

Session Co-Chair: Adrian Connaire, Wood, Ireland

Estimating the Rate of Scour Propagation along a Submarine Pipeline in Time-varying Currents and in Fine-grained Sediment

OMAE2018-77981

Scott Draper¹ Weidong Yao¹ Liang Cheng² Joe Tom² Hongwei An¹

1. The University of Western Australia, Crawley, WA, Australia;

2. The University of Western Australia, Perth, WA, Australia

Modelling Changes to Submarine Pipeline Embedment and Stability due to Pipeline Scour

OMAE2018-77985

Scott Draper¹ Terry Griffiths¹ Liang Cheng² David White³ Hongwei An¹

1. The University of Western Australia, Crawley, WA, Australia;

2. The University of Western Australia, Perth, WA, Australia; 3. University of Southampton, Southampton, United Kingdom

Flexible Flowline Walking Tendency on Seabed with Longitudinal Undulations and Transverse Gradients

OMAE2018-78005

Graeme Roberts¹ Thurairajah Sriskandarajah¹ Gianluca Colonnelli¹

Arnaud Roux² Alan Roy¹ Parupathy Ragupathy¹

1. Subsea 7, Sutton, United Kingdom; 2. Subsea 7, Paris, France

Data Collection and Analysis for the Creation of a Digital Shadow during the Production of Thermoplastic Composite Layers in Unbonded Flexible Pipes

OMAE2018-77011

Martin Schaeckel¹ John McNab² Neville Dodds² Tido Peters¹

Henning Janssen¹ Christian Brecher¹

1. Fraunhofer Institute for Production Technology IPT, Aachen, Germany; 2. Baker Hughes, a GE Company, Newcastle upon Tyne, United Kingdom

Ocean Space Utilization

5-5-1 Floating Offshore Wind Turbine

Wednesday June 20 Room: **Berlin** | 10:30 – 12:00

Session Chair: Motohiko Murai, Yokohama National University, Japan

Session Co-Chair: Yasunori Nihei, Osaka Prefecture University, Japan

Wave Load Acting on an Advanced Spar in Regular Waves OMAE2018-77821

Takayuki Hirai¹ Akira Sou¹ Yasunori Nihei²

1. Kobe University, Kobe, Japan; 2. Osaka Prefecture University, Sakai, Japan

On-Site Measurement and Numerical Modelling of a Lifting Operation for Caissons using Floating Crane OMAE2018-77132

Sho Oh¹ Tomoaki Utsunomiya² Kota Saiki²

1. ClassNK, Chiyodaku, Japan; 2. Kyushu University, Fukuoka, Japan

Validation of Applicability of Low Frequency Motion Analysis Theory using Observation Data of Floating Offshore Substation OMAE2018-77201

Haruki Yoshimoto¹ Hisafumi Yoshida² Ken Kamizawa¹

1. Japan Marine United Corporation, Tokyo, Japan;

2. Japan Marine United Corporation, Tsu-city, Japan

Ocean Engineering

6-8-3 Fluid-Structure, Multi-Body and Wave-Body Interaction III

Wednesday June 20 Room: **Marsella** | 10:30 – 12:00

Session Chair: Pierre Ferrant, École Centrale de Nantes, LHEEA Lab. (ECN/CNRS), France

Fluid Resonance in a Moonpool with Various Edge Profiles OMAE2018-77242

Sheng-Chao Jiang, Li Zou

Dalian University of Technology, Dalian, China

Efficient Calculation of Low Frequency Motions for Air Gap Prediction OMAE2018-77416

Zhiyuan Pan, Torgeir Kirkhorn Vada, Arne Nestegaard

DNV GL, Høvik, Norway

On the Handling of Moonpool Resonances by Green's Function Methods OMAE2018-77712

Torgeir Kirkhorn Vada, Zhiyuan Pan

DNV GL, Høvik, Norway

Time-domain Analysis of Hydroelastic Responses on a Moored Oil Storage Vessel Subjected to Wind, Irregular Waves and Currents OMAE2018-78365

Yong Cheng¹ Ji Chunyan¹ Gangjun Zhai² Tianhui Fan³

1. Jiangsu University of Science and Technology, Zhenjiang, China; 2. Dalian University of Technology, Dalian, China; 3. South China University of Technology, GuangZhou, China

Ocean Engineering

6-13-2 Metocean II: Joint Probability and Environmental Loads

Wednesday June 20 Room: **Burdeos** | 10:30 – 12:00

Session Chair: Gus Jeans, Oceananalysis Ltd, United Kingdom

Session Co-Chair: Kevin Ewans, MetOcean Research Ltd, New Zealand

Simultaneous Stochastic Model of Waves and Currents for Prediction of Structural Design Loads OMAE2018-77219

Kjersti Bruserud, Statoil ASA, Stavanger, Norway

A Framework for Offshore Load Environment Modeling OMAE2018-77674

Sebastian Glavind¹ Michael H. Faber²

1. Aalborg University/Danish Hydrocarbon Research and Technology Centre, Lyngby, Denmark; 2. Aalborg University, Aalborg, Denmark

Uncertainty of Environmental Contours due to Sampling Variability OMAE2018-77810

Odin Gramstad, Erik Vanem, Elzbieta M. Bitner-Gregersen

DNV GL, Høvik, Norway

Multivariate Extreme Analysis Methodology in Function of Structural Response OMAE2018-77994

Hélène Pineau¹ Nicolas Raillard² Marc Prevosto² Françoise Girard¹ Stéphane Raynaud¹

1. Actimar, Brest, France; 2. IFREMER, Plouzané, France

Polar and Arctic Sciences and Technology

7-8-1 Numerical Ice Modeling I

Wednesday June 20

Room: **Baden Baden** | 10:30 – 12:00

Session Chair: Yan Feng, Harbin Engineering University, China

Session Co-Chair: Walter Kuehnlein, sea2ice, Germany

A New Icebreaking Pattern for the Application in Numerical Simulation of Ship Performance in Level Ice OMAE2018-77991

Fang Li, Mikko Kotilainen, Floris Goerlandt, Pentti Kujala

Aalto University, Espoo, Finland

Numerical Simulations of Continuous Icebreaking Process with Different Heel Angles in Level Ice OMAE2018-77253

Feng Wang¹ Zao-Jian Zou¹ Hai-Peng Guo¹ Yi-Zhou Ren²

1. Shanghai Jiao Tong University, Shanghai, China;

2. Marine Design & Research Institute of China, Shanghai, China

Multibody Dynamics Simulation on Ice Resistance of Ship in Pack Ice Environment OMAE2018-77345

Jongyoung Kim¹ Jong-Chun Park¹ SungPill Kim¹ Hyun Soo Kim² YongJin Cho³

1. Pusan National University, Busan, Korea; 2. Inha Technical College, Incheon, Korea;

3. Dong Eui University, Busan, Korea

Modelling Randomness in Simulation of Ice-Induced Vibrations OMAE2018-77808

Yingying Chen¹ Bowei Yu¹ Ying Min Low¹ Kim Thow Yap²

1. National University of Singapore, Singapore, Singapore;

2. Keppel Offshore & Marine Technology Centre, Singapore, Singapore

CFD and FSI

8-1-4 Radiation, Cavity

Wednesday June 20

Room: **Dresden** | 10:30 – 12:00

Session Chair: Sam Holmes, RedWing Eng, USA

Session Co-Chair: Yiannis Constantinides, Chevron, USA

Heat Radiation Research and Optimized Analysis of Burner Boom on Semi-Submersible Drilling Platform OMAE2018-77368

Yuxin Xu¹ Guowei Sun¹ Songhua Liu¹ Fengguang Xue² Yong Bai³

1. Zhejiang University, Hangzhou, China; 2. Yantai CIMC Raffles Offshore Ltd., Yantai, China;

3. Zhejiang University, Zhejiang, China

Numerical Simulation of Hot Water Released and Wake Field in Submerged Vessel OMAE2018-77448

Yong Ding, Linxin Lan, Weizhuang Ma, Fenglai Huang, Shunli Cao

Harbin Engineering University, Harbin, China

Research on Trailing Cavity of Underwater Vehicles based on Potential Flow Theory OMAE2018-78676

Zeyu Shi¹ Yao Xiongliang¹ Jiaolong Zhao² Longquan Sun³ Yue Tian¹
 1. Harbin Engineering University, Harbin, China; 2. Beijing Electro-mechanical Engineering Institute, Beijing, China; 3. College of Shipbuilding Engineering, Harbin, China

Ocean Renewable Energy

9-2-3 Design/Siting Methods and Analysis I

Wednesday June 20 Room: **Estrasburgo** | 10:30 – 12:00

Session Chair: Hyun Kyoung Shin, University of Ulsan, Korea

Influence of System Level Parameters on the Fatigue Life of Jacket Substructures for 10 MW and 20 MW Wind Turbines OMAE2018-77568

Davide Conti, Anand Natarajan, Asger Bech Abrahamsen
 Technical University of Denmark, Roskilde, Denmark

Fatigue Analysis of a 12MW Wind Turbine Blade OMAE2018-78214

Hyeonjeong Ahn, Hyun Kyoung Shin
 University of Ulsan, Ulsan, Korea

Study on Effects of the Scouring on Horizontal Bearing Capacity of the Composite Bucket Foundation OMAE2018-77370

Hongyan Ding, Xing Zhao, Puyang Zhang, Conghuan Le
 Tianjin University, Tianjin, China

Offshore Geotechnics

10-2-1 Anchors I

Wednesday June 20 Room: **Paris** | 10:30 – 12:00

Session Chair: Ogul Doggun, University of Hawaii, USA

Finite Element Simulation of an Embedded Anchor Chain OMAE2018-77781

Chao Sun¹ Xiaowei Feng² Susan Gourvenec³ Steven R. Neubecker² Mark F. Randolph²
 1. The University of Western Australia, Nedlands, WA, Australia; 2. The University of Western Australia, Crawley, WA, Australia; 3. University of Southampton, Southampton, United Kingdom

Experimental and Numerical Study on Holding Power of Rectangular-shaped Anchors OMAE2018-77814

Kimihito Toh¹ Yusuke Fukumoto² Takao Yoshikawa¹
 1. Kyushu University, Fukuoka, Japan; 2. Nippon Kaiji Kyokai, Tokyo, Japan

Performance of Embedded Mooring Lines during Keying and Diving of Gravity Installed Anchors OMAE2018-78034

Yanbing Zhao, Haixiao Liu
 Tianjin University, Tianjin, China

Experimental Study of the Influence of the Pore Pressure Evolution and the Shear Band Formation on the Extraction Resistance of Submerged Anchor Plates OMAE2018-78306

Manuela Kanitz, Jürgen Grabe
 Hamburg University of Technology, Hamburg, Germany

Petroleum Technology

11-6-5 Well Drilling Fluids and Hydraulics V

Wednesday June 20 Room: **Potsdam** | 10:30 – 12:00

Session Chair: Vassilios Kelessidis, Khalifa University of Science and Technology, United Arab Emirates

Session Co-Chair: Yuanhang Chen, LSU, USA

Mathematical Modeling and Analysis of Riser Gas Unloading

Problem OMAE2018-77719

Raj Kiran¹ Saeed Salehi²

1. University of Oklahoma, Norman, OK, USA; 2. Mewbourne School of Petroleum and Geological Engineering, Norman, OK, USA

The Behaviors of Gas Bubble Migration and Pressure Build-up during the Dynamic Shut-in Procedure in Deepwater Drilling OMAE2018-77920

Xiaohui Sun, Baojiang Sun, Yonghai Gao, Zhiyuan Wang
 China University of Petroleum, Qingdao, China

A Transient Flow Model for Investigating Parameters Affecting Kick Behavior in OBM for HPHT Wells and Backpressure MPD

Systems OMAE2018-77547

Dalila Gomes¹ Marius S Nilsen² Johnny Frøyen³ Knut S Bjørkevoll³

Antonio CV M Lage⁴ Kjell Kåre Fjelde¹ Dan Sui¹

1. University of Stavanger, Stavanger, Norway; 2. NTNU, Department of Geoscience and Petroleum, Trondheim, Norway; 3. SINTEF Petroleum, Bergen, Norway; 4. Petrobras, Rio de Janeiro, RJ, Brazil

Kick Management Study on Automated Well Control for Managed Pressure Drilling in Long Wells OMAE2018-77800

Amare Leulseged¹ Dan Sui² Sima Nepal³ Suranga Geekiyanage²

1. International Research Institute of Stavanger, Stavanger, Norway; 2. University of Stavanger, Stavanger, Norway; 3. Statoil ASA, Bergen, Norway

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-2-2 Floater Dynamics and Hydrodynamics II

Wednesday June 20 Room: **Bristol** | 10:30 – 12:00

Session Chair: Gabriele Bulian, Department of Engineering and Architecture - University of Trieste, Italy

Session Co-Chair: Benjamin Bouscasse, Ecole Centrale de Nantes, France

Investigation of Bottom Slamming on Ships in Irregular Waves

OMA2018-77900

Shan Wang¹ Suresh Rajendran² Carlos Guedes Soares³

1. Centre for Marine Technology and Ocean Engineering, Lisboa, Portugal;

2. Department of Ocean Engineering, Chennai, TN, India;

3. Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

Study on Wave Load Prediction and Fatigue Damage Analysis of River-Sea-Going Ship OMAE2018-77554

Guohu Guo, Jin Gan, Yiwen Wang, Weiguo Wu, Yunling Ye
 Wuhan University of Technology, Wuhan, China

Hydroelastic Analysis of a 3D Floating Body Considering Uncoupled Flexural and Torsional Vibrations OMAE2018-77042

Debasmit Sengupta, Ranadev Datta, Debabrata Sen
 Indian Institute of Technology Kharagpur, Kharagpur, WB, India

Short Term Statistics of Hydroelastic Loads of a Containership in Head and Oblique Seas OMAE2018-77486

Suresh Rajendran¹ Carlos Guedes Soares²

1. Department of Ocean Engineering, Chennai, TN, India;
2. Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-5-5 Ultimate Strength III

Wednesday June 20 Room: **Oxford** | 10:30 – 12:00

Session Chair: Segen Estefen, COPPE/UFRJ, Brazil

Session Co-Chair: Ming Cai Xu, Huanzong Univ, China

Recent Developments in Experimental and Numerical Assessments of Welding-Induced Residual Stresses OMAE2018-77652

Bai-Qiao Chen¹ Marzieh Hashemzadeh¹ Yordan Garbatov² Carlos Guedes Soares³

1. Centre for Marine Technology and Ocean Engineering (CENTEC), Instituto Superior Técnico, Lisboa, Portugal;
2. University of Lisbon, Lisboa, Portugal;
3. Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

Numerical Simulation of Shear Ram Performance OMAE2018-78100

Lei Zhu¹ Nilo de Moura Jorge¹ John H. Chujutalli¹ Marcelo Igor Lourenço Souza¹ Segen Estefen²

1. Universidade Federal do Rio de Janeiro, Rio de Janeiro, RJ, Brazil;
2. COPPE/UFRJ, Rio de Janeiro, RJ, Brazil

Design and Make of a Segmented Ship Model for Vertical Bending Moment Measurement OMAE2018-78610

Jingxia Yue, Yulong Guo, Lihua Peng

Wuhan University of Technology, Wuhan, China

Crashworthiness Assessment of the Thin-walled Bottom Structure during Powered-hard Grounding Accidents OMAE2018-77492

Aditya Rio Prabowo¹ Jung Min Sohn¹ Dong Myung Bae¹ Agus Setiyawan²

1. Pukyong National University, Busan, Korea;
2. University of Rhode Island, Kingston, RI, USA

Study on Deformation and Energy Absorption of Liquid Cabin under Ballistic Impact OMAE2018-78664

Lei Zhang, Pengduo Zhao

Navy Academy of Armament, Beijing, China

Honoring Symposium for Professor Bernard Molin on Marine and Offshore Hydrodynamics

13-7-2 Gap and Moonpool Resonance II

Wednesday June 20 Room: **Londres** | 10:30 – 12:00

Session Chair: Wei Qiu, Memorial University of Newfoundland, Canada

A 2D Experimental and Numerical Study of Moonpools with Recess OMAE2018-78326

Senthuran Ravinthrakumar¹ Trygve Kristiansen¹ Babak Ommani²

1. NTNU, Trondheim, Norway;
2. SINTEF Ocean, Trondheim, Norway

Investigating a Simplified Model for Moonpool Piston Mode Response in Irregular Waves OMAE2018-78352

Babak Ommani¹ Trygve Kristiansen² Kjetil Berget¹

1. SINTEF Ocean, Trondheim, Norway;
2. NTNU, Trondheim, Norway

Experimental and Numerical Study for Gap Resonance of Drillship Moonpool in Waves with and without Forward Speed OMAE2018-78561

Allan Ross Magee¹ Aichun Feng² Kandasamy Karthikeyan¹ Xiang Liu³ Deguang Yan³

1. National University of Singapore, Singapore, Singapore;
2. NUS Civil Engineering, Singapore, Singapore;
3. ABS, Singapore, Singapore

Nonlinear Lid Technique: Application to Gap and Moonpool Resonance OMAE2018-78623

Bruno Lecuyer, Marie-Christine Rouault

PRINCIPIA SAS, La Ciotat, France

Lunch

12:00 – 13:30

Location: Buffet Madrid / France-Madrid Gallery / Lyon / Toulouse

CONCURRENT SESSIONS

13:30 – 15:00

Offshore Technology

1-6-3 Industry Collaboration towards Confident CFD Applications on Offshore Engineering

Wednesday June 20 Room: **Colonia** | 13:30 – 15:00

Session Chair: Zhenjia Huang, Exxonmobil Upstream

Research Company, Spring, TX, United States

Session Co-Chair: Joop Helder, MARIN, Wageningen, Netherlands

Task JDP OMAE2018-78780

Jang Kim

TechnipFMC, Houston, Armenia

On the Validity and Sensitivity of CFD Simulations for a Deterministic Breaking Wave Impact on a Semi Submersible OMAE2018-78089

Henry Bandringa, Joop Helder

MARIN, Wageningen, Netherlands

Numerical Modeling of Neutrally-stable and Sustainable Atmospheric Boundary Layer for the CFD Simulation of Wind Load on Offshore Floating Facilities OMAE2018-78699

Jang Kim¹ Hyunchul Jang² Wei Xu³ Zhirong Shen⁴ Mustafa Kara⁵

Seongmo Yeon⁶ Hongmei Yan⁷

1. TechnipFMC, Houston, TX, USA;
2. Technip, Houston, TX, USA;
3. MARIN, Houston, TX, USA;
4. American Bureau of Shipping, Houston, TX, USA;
5. Andarko, The Woodlands, TX, USA;
6. Samsung Heavy Industries, Daejeon, Korea;
7. Chevron, Houston, TX, USA

Deterministic and Stochastic Validation of CFD Simulation of Wave Impact OMAE2018-78783

Jang Kim

TechnipFMC, Houston, Armenia

Offshore Technology

1-7-1 Wave Loading and Motions in Extreme Seas I

Wednesday June 20 Room: **Bonn** | 13:30 – 15:00

Session Chair: Babak Ommani, SINTEF Ocean, Norway

Session Co-Chair: Zhiyuan Pan, DNV GL, Norway

A Novel Semi-empirical Nonlinear Formulation of the Disturbed Wave Elevation Time Series OMAE2018-78591

Csaba Pakozdi¹ Carl Trygve Stansberg² Svein-Arne Reinholdtsen³

1. SINTEF Ocean, Trondheim, Norway; 2. Marinteknikk, Trondheim, Norway;

3. Statoil ASA, Stjørdal, Norway

Useful Indicators for Screening of Sea States for Wave Impacts on Fixed and Floating Platforms OMAE2018-78544

Tim Bunnik¹ Carl Trygve Stansberg² Csaba Pakozdi³ Sebastien Fouques⁴ Luke Somers⁵

1. MARIN, Wageningen, Netherlands; 2. Marinteknikk, Trondheim, Norway; 3. SINTEF

Ocean, Trondheim, Norway; 4. SINTEF, Trondheim, Norway; 5. Ecole Centrale de Lyon, Ecully, France

Effect of Negative Damping on Offshore Structures OMAE2018-78715

Gizat Derebe Amare¹ Yonas Zewdu Ayele²

1. UiT The Arctic University of Norway, Tromsø, Norway; 2. Østfold University College,

Krårerøy, Norway

Structures, Safety and Reliability

2-4-3 Fatigue and Fracture Reliability III

Wednesday June 20 Room: **Dusseldorf** | 13:30 – 15:00

Session Chair: Norio Yamamoto, Nippon Kaiji Kyokai, Japan

Session Co-Chair: William Mohr, EWI, USA

Fatigue Reliability Assessment of Fillet Welded Cruciform Joints based on the Fatigue Notch Factor and the Local Strain Approach OMAE2018-78032

OMA

Yan Dong¹ Yordan Garbatov¹ Carlos Guedes Soares²

1. University of Lisboa, Lisboa, Portugal;

2. Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

Comparing Fracture Toughness Transition Curves for Girth Welds in X70 Pipe OMAE2018-78147

William Mohr, Tom McGaughy

EWI, Columbus, OH, USA

Fatigue Strength Assessment of a Structure Considering Corrosion Wastage and Corrosion Fatigue OMAE2018-78188

Norio Yamamoto¹ Kinya Ishibashi² Tomohiro Sugimoto¹

1. Nippon Kaiji Kyokai, Tokyo, Japan; 2. Classnk, Tokyo, Japan

Experimental Study on Crack Propagation and Strain Accumulation of Cracked Stiffened Plate under Cyclic Load OMAE2018-78596

Wei Jiang, Ping Yang, Ziya Peng

Wuhan University of Technology, Wuhan, China

Structures, Safety and Reliability

2-9-1 Extreme Loading and Responses I

Wednesday June 20 Room: **Munich** | 13:30 – 15:00

Session Chair: Srinivas Sriramula, University of

Aberdeen, Aberdeen, United Kingdom

Session Co-Chair: Bin Liu, School of Transportation,

Wuhan University of Technology, Wuhan, China

Numerical Method to Estimate Fluid-Structure Interaction Effect of Ships under Severe Wave Condition OMAE2018-77845

Tomoki Takami¹ Kazuhiro Iijima²

1. National Maritime Research Institute, Tokyo, Japan; 2. Dept of NAOE, Osaka University,

Osaka, Japan

A Numerical Investigation on Water Slamming of Stiffened Panels OMAE2018-77908

Shan Wang¹ Carlos Guedes Soares²

1. Centre for Marine Technology and Ocean Engineering, Lisboa, Portugal; 2. Instituto

Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

An Assessment of Load and Response for Horizontal Slamming Loads from Model Scale Experiments OMAE2018-78355

Martin Storheim¹ Gunnar Lian²

1. Moss Maritime AS, Lysaker, Norway;

2. Statoil / University of Stavanger, Stavanger, Norway

Response of an Aluminum Stiffened Plate under Extreme Slamming Loadings OMAE2018-77150

Bin Liu¹ Richard Villavicencio² Kun Liu³ Ling Zhu⁴ Carlos Guedes Soares⁵

1. School of Transportation, Wuhan University of Technology, Wuhan, China; 2. Royal IHC,

Kindrdijk, Netherlands; 3. Shanghai Jiao Tong University/Jiangsu University of Science

and Technology, Zhenjiang, China; 4. Wuhan University of Technology, Wuhan, China;

5. Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

Materials Technology

3-10-1 Integrity Assessment of High Strength Steels

Wednesday June 20 Room: **Stuttgart** | 13:30 – 15:00

Session Chair: Alex Stacey, Offshore Safety Division,

Health & Safety Executive, United Kingdom

Session Co-Chair: Gerhard Ersdal, Petroleum Safety Authority, Norway

Session Co-Chair: Morten Langøy, Petroleum Safety Authority, Norway

The Effect of Uniaxial Ratcheting on Piezomagnetic Response of X80 Pipeline Steel Considering Loading History OMAE2018-77282

Sheng Bao¹ Huangjie Lou² Yibin Gu¹

1. Zhejiang University, Hangzhou, China; 2. Institute of Structural Engineering, Zhejiang

University, Hangzhou, China

In-situ Investigation of HIC Initiation and Propagation Behavior of Bainitic Steels in Sour Environment OMAE2018-77471

Kyono Yasuda¹ Nobuyuki Ishikawa² Yutaka Matsui² Daisuke Mizuno² Tomoyuki Yokota²

1. JFE Steel Corporation, Fukuyama, Japan; 2. JFE Steel Corporation, Kawasaki, Japan

Enhanced Integrity Management by Integrated Erosion-Corrosion and Fluid-dynamic Calculations in Oil&Gas Systems OMAE2018-77937

Jorge Rodriguez Bustamante¹ Susana Gomez-Alvarez² Jose Alberto Riquelme Oliveira¹

Paula Sanz Sanz¹ Rene Fernando Lema Zuñiga³ Ludwing Erick Mercado Hurtado³

Daniel Merino-García²

1. Repsol, Mostoles, Spain; 2. Repsol Technology Centre, Móstoles, Spain; 3. Repsol, Santa

Cruz, Bolivia

Optimization of the Structural Performance for Corrugated Blast Panels on Offshore Platforms OMAE2018-78296

John Vande Voorde¹ Filip Van den Abeele² Steven Cooreman¹
 1. OCAS N.V., Ghent, Belgium; 2. ArcelorMittal Global R&D, Zwijnaarde, Belgium

Pipelines, Risers, and Subsea Systems

4-3-8 Mechanics III

Wednesday June 20 Room: **Frankfurt** | 13:30 – 15:00

Session Chair: Chris Timms, C-FER Technologies, Canada
 Session Co-Chair: Duane DeGeer, INTECSEA, USA

A Comparative Study of Fatigue Damage Assessment Methods to a Rigid Planar Jumper OMAE2018-77159

Laila Aarstad Igeh¹ Zhenhui Liu² Jie Wu³ Muk Chen Ong¹
 1. University of Stavanger, Stavanger, Norway; 2. Aker Solutions AS, Trondheim, Norway;
 3. SINTEF Ocean, Trondheim, Norway

Considerations in Design of Centralisers for Pipe-In-Pipe Systems

OMAE2018-77535
 Soheil Manouchehri
 CyrusOGR, London, United Kingdom

Improving the Installation Criterion for Concrete Coated Pipelines OMAE2018-78512

Ngoc Nguyen¹ Olav Fyrileiv² Chor Yew Chia¹
 1. DNV GL Singapore, Singapore; 2. DNV GL, Hovik, Norway

Ocean Space Utilization

5-5-2 Wave Energy Converter and Others

Wednesday June 20 Room: **Berlin** | 13:30 – 15:00

Session Chair: Motohiko Murai, Yokohama National University, Japan

Basic Characteristics of the Primary Conversion of an OWC Type Wec Installed on a Wave Dissipating Double-caisson OMAE2018-77020

Tomoki Ikoma¹ Koichi Masuda¹ Hiroaki Eto¹ Shogo Shibuya²
 1. Nihon University, Funabashi, Japan; 2. Nihon University, Chiba, Japan

A Towing Test of a Floating Type VAMT with Cycloidal Pitch-Controlled Blades OMAE2018-77443

Tomoki Ikoma¹ Hiroaki Eto¹ Koichi Masuda¹ Atsuhiko Oguchi²
 1. Nihon University, Funabashi, Japan; 2. JGC Plant Innovation Co., Ltd., Yokohama, Japan

A Propose of Prediction Method for Wave Force and its Application for a Point-absorber WEC OMAE2018-77720

Qiao Li, Motohiko Murai
 Yokohama National University, Yokohama, Japan

Ocean Engineering

6-2-1 Wave-Structure Interactions I

Wednesday June 20 Room: **Marsella** | 13:30 – 15:00

Session Chair: Solomon Yim, Oregon State University, USA
 Session Co-Chair: Yan Li, Norwegian University of Science and Technology, Norway

Experimental and Numerical Investigations into Wave Run-up on Fixed Surface-Piercing Square Column OMAE2018-77726

Zhichao Fang, Longfei Xiao, Yinghao Guo, Lijun Yang, Wenyue Lu
 Shanghai Jiao Tong University, Shanghai, China

Investigation of Higher-Harmonic Wave Forces and Ringing using CFD Simulations OMAE2018-77925

Arun Kamath¹ Csaba Pakozdi² Hans Bihs¹
 1. NTNU, Trondheim, Norway; 2. SINTEF Ocean, Trondheim, Norway

Numerical and Experimental Study of SPM Fish Cage: Comparison and Validation OMAE2018-78204

Hui Cheng¹ Liu Yi Huang¹ Yi Ni¹ Qing Chang Xu¹ Fenfang Zhao¹ Xinxin Wang¹ Zhenlin Liang²
 1. Ocean University of China, Qingdao, China; 2. Shan Dong University, Weihai, China

Flow-riser Interaction in Deep-sea Mining: an Analytic Approach for Multi-layered FRP Risers OMAE2018-78576

Dimitrios G. Pavlou
 University of Stavanger, Stavanger, Norway

Ocean Engineering

6-13-3 Metocean III: Impact of Cyclones Typhoons or Hurricanes

Wednesday June 20 Room: **Burdeos** | 13:30 – 15:00

Session Chair: Gus Jeans, Oceananalysis Ltd, United Kingdom
 Session Co-Chair: Kevin Ewans, MetOcean Research Ltd, New Zealand

Estimating Storm Surge Design Parameter for Oil and Gas Exploitation in the Blocks of Liaodong Bay OMAE2018-77400

Sheng Dong¹ Jinjin Zhai¹ Weinan Huang² Zhifeng Wang¹ Ri Zhang¹
 1. Ocean University of China, Qingdao, China;
 2. College of Engineering, Ocean University of China, Qingdao, China

Relocatable Tide Prediction and Storm Surge Forecasting OMAE2018-77926

Thomas Prime
 National Oceanography Centre, Liverpool, United Kingdom

Surge Height and Current Estimation along K-G Basin OMAE2018-77945

Maneesha Sebastian¹ Manasa Ranjan Behera²
 1. IIT Bombay, Maharashtra, India; 2. IIT Bombay, Mumbai, India

The Application of Extreme Value Calculation Model based on Deductive Method in South China Sea OMAE2018-78335

Botao Xie, Xuhe Ren, Jiagang Li, Bigui Huang
 CNOOC Research Institute, Beijing, China

Polar and Arctic Sciences and Technology

7-8-2 Numerical Ice Modeling II

Wednesday June 20 Room: **Baden Baden** | 13:30 – 15:00

Session Chair: Yingying Chen, National University of Singapore, Singapore
 Session Co-Chair: Sören Ehlers, Technical University of Hamburg, Germany

Study on Force and Movement of Unconstrained Ice Fronting a Propeller OMAE2018-77260

Li Xing, Chao Wang
 Harbin Engineering University, Harbin, China

Study on Influence of Bow Configuration on Dynamic Response of Ship Collision with Ice OMAE2018-78200

Hui Li, Yan Feng, Zheng Yang, Yuan Qian, Weijia Sheng
 Harbin Engineering University, Harbin, China

Preliminary Analytical Formulation of Ice-floater Interactions including the Effect of Wave Load OMAE2018-78340

Aziz Ahmed¹ Mohammad Abdullah Al Maruf² Arun Kr. Dev² M A Hannan²
 1. University of Wollongong, Wollongong, NSW, Australia;
 2. Newcastle University, UK (Singapore Unit), Singapore, Singapore

Shadowing Effect Analyzing for Propeller-Ice Milling Condition with Peridynamics OMAE2018-77283

Wei Peng Xiong, Chao Wang
 Harbin Engineering University, Harbin, China

CFD and FSI

8-1-5 Application

Wednesday June 20 Room: **Dresden** | 13:30 – 15:00

Session Chair: Sam Holmes, RedWing Eng, USA
 Session Co-Chair: Stephen Cosgrove, Altair, USA

A Numerical Investigation of Wedge Angle Effects on a Plunger Type Wavemaker with a Constant Submerged Volume OMAE2018-77380

Zohreh Azadian-Kharanjani¹ Amir H. Nikseresh¹ Harry B. Bingham²
 1. Shiraz University of Technology, Shiraz, Iran; 2. DTU, Lyngby, Denmark

Modelling and Simulation of Moored-Floating Structures using the Tension-Element-Method OMAE2018-77776

Tobias Martin, Arun Kamath, Hans Bihs
 Norwegian University of Science and Technology (NTNU), Trondheim, Norway

Structural Investigation of the Log Accumulation Effect in a Debris Containment Grid through Towing Tank Experiments OMAE2018-78097

Felipe S. Castro¹ Eduardo Tadashi Katsuno¹ Gustavo R. S. Assi¹ Joao Lucas Dozzi Dantas²
 1. University of Sao Paulo, Sao Paulo, SP, Brazil;
 2. Institute for Technological Research, Sao Paulo, SP, Brazil

Numerical Analysis of Debris Containment Grid Fluid-Body Interaction OMAE2018-78106

Eduardo Tadashi Katsuno¹ Gustavo de Goes Gomes²
 Felipe S. Castro¹ Joao Lucas Dozzi Dantas²
 1. University of Sao Paulo, Sao Paulo, SP, Brazil;
 2. IPT - Institute for Technological Research, Sao Paulo, SP, Brazil

Ocean Renewable Energy

9-2-4 Design/Siting Methods and Analysis II

Wednesday June 20 Room: **Estrasburgo** | 13:30 – 15:00

Session Chair: Zi Lin, Cranfield University, United Kingdom
 Session Co-Chair: Pasquale Dinoi, Oceantec Marine Energy, Spain

Simulation Requirements and Relevant Load Conditions in the Design of Floating Offshore Wind Turbines OMAE2018-78244

Ricardo Faerron-Guzmán¹ Kolja Müller¹ Luca Vita² Po Wen Cheng¹
 1. University of Stuttgart, Stuttgart, Germany;
 2. DNV GL, Renewable Certification, Charlottenlund, Denmark

Comparisons Between the Typical Wind Shear and the Wind Shear Induced by Platform Pitch Motion for an Offshore Floating Wind Turbine OMAE2018-77797

Binrong Wen, Qi Zhang, Sha Wei, Xinliang Tian, Xingjian Dong, Zhi-Ke Peng
 Shanghai Jiao Tong University, Shanghai, China

Maximum Dissimilarity-based Algorithms for Discretization of Metocean Data into Clusters of Arbitrary Size and Dimension OMAE2018-77977

Samuel Kanner¹ Alexia Aubault² Bingbin Yu² Antoine Peiffer²
 1. Principle Power Inc, Berkeley, CA, USA; 2. Principle Power Inc., Emeryville, CA, USA

Influence of the Discount Rate in the Economic Analysis of a Floating Offshore Wind Farm in the Galician Region of the European Atlantic Area OMAE2018-78727

Laura Castro-Santos, Almudena Filgueira-Vizoso, Isabel Lamas-Galdo, Carlos Álvarez-Feal, Luis Carral-Couce
 Universidade da Coruña, Ferrol, Spain

Offshore Geotechnics

10-5-1 Bucket Foundations and Suction Caissons

Wednesday June 20 Room: **Paris** | 13:30 – 15:00

Session Chair: Run Liu, Tianjin University, China

An Experimental Comparison of Horizontal Resistance of Single Suction Pile and Group Suction Piles OMAE2018-77192

Juhyung Lee, Jinwoo Cho, Hakman Kim
 Korea Institute of Civil Engineering and Building Technology, Gyeonggi-Do, Korea

Undrained Uniaxial Capacities of Suction Bucket Foundations in Rows OMAE2018-77205

Zhong Xiao, Yumin Lu, Ying Liu
 Tianjin University, Tianjin, China

Experimental Study of Muddy Soil Inside Suction Bucket Foundation by Vacuum Electro-osmosis OMAE2018-77371

Puyang Zhang, Hanbo Zhai, Hongyan Ding, Conghuan Le
 Tianjin University, Tianjin, China

An Experimental Study of the Behavior of Bucket Foundations on Saturated Sand with Upward Seepage OMAE2018-77412

Reza Amini Ahidashti¹ Abdolhosein Haddad¹ Amin Barari²
 1. Semnan University, Semnan, Iran; 2. Virginia Tech, Virginia, VA, USA

Petroleum Technology

11-6-6 Well Fluids and Hydraulics VI

Wednesday June 20 Room: **Potsdam** | 13:30 – 15:00

Session Chair: Ergun Kuru, University of Alberta, Canada
 Session Co-Chair: Vassilios Kelessidis, Khalifa University of Science and Technology, United Arab Emirates

Experimental and CFD Study of Circulation Efficiency in Simulated Irregular Annulus OMAE2018-77515

Shreyansh Divyankar¹ Milad Khatibi¹ Rune Wiggo Time¹
 Hans Joakim Skadsem² Jan Aage Aasen¹
 1. University of Stavanger, Stavanger, Norway;
 2. International Research Institute of Stavanger, Stavanger, Norway

Effect of Buoyancy and Inertia on Viscoplastic Fluid-Fluid Displacement in an Inclined Eccentric Annulus with an Irregular Section OMAE2018-77519

Steinar Kragset, Hans Joakim Skadsem
 IRIS - International Research Institute of Stavanger, Stavanger, Norway

Using Lightweight or Low Viscosity Preflushes for Primary Cementing of Surface Casing OMAE2018-77615

Amir Maleki, Ian Frigaard
University of British Columbia, Vancouver, BC, Canada

Tracking Fluid Interfaces in CCS Cement Placement Applications

OMA2018-77630
Ian Frigaard, Amir Maleki
University of British Columbia, Vancouver, BC, Canada

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-2-3 Floater Dynamics and Hydrodynamics III

Wednesday June 20 Room: **Bristol** | 13:30 – 15:00

Session Chair: José Miguel Rodrigues, SINTEF Ocean, Norway
Session Co-Chair: Cosmin Ciortan, DNV GL, Norway

Seakeeping Prediction of a Survey Vessel Operating in the Caspian Sea OMAE2018-77126

Elisabeta Burlacu¹ Leonard Domnisoru² Dan Obreja¹
1. University “Dunarea de Jos” of Galati / Naval Architecture Faculty, Galati, Romania;
2. University “Dunarea de Jos” of Galati, Galati, Romania

Large Amplitude Time-domain Seakeeping Simulations of KVLCC2 in Head Seas Taking into Account Forward Speed Effect OMAE2018-77040

Christos Pollalis¹ Olgun Hizir¹ Evangelos Boulougouris² Osman Turan¹
1. University of Strathclyde, Glasgow, United Kingdom;
2. University of Strathclyde, MSRC, Glasgow, United Kingdom

Fully Coupled Analysis of Ship Motion and Sloshing Tank in Regular and Irregular Waves OMAE2018-78378

Yuan Zhuang, Decheng Wan
Shanghai Jiao Tong University, Shanghai, China

A Study on the Added Resistance Performance of Catamarans in Waves OMAE2018-78144

Emanuela Ageno¹ Luca Bonfiglio² Dario Bruzzone¹ Giuliano Vernengo¹ Diego Villa¹
1. University of Genova, Genova, Italy;
2. Massachusetts Institute of Technology, Cambridge, MA, USA

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-5-4 Structural Integrity and Monitoring

Wednesday June 20 Room: **Oxford** | 13:30 – 15:00

Session Chair: Guoqing Feng, Harbin Engineering University, China
Session Co-Chair: Xiaoli Jiang, TU Delft, Netherlands

Structural Integrity Assessment of Maritime Transport Equipment OMAE2018-77220

Xiaoli Jiang
TU Delft, Delft, Netherlands

Investigation on Temperature Compensation of Fiber Bragg Grating Sensors for Hull Monitoring OMAE2018-77326

Ruiqi Ma, Guoqing Feng, Huilong Ren, Peng Fu, Shuang Wu, Youzhen Wang
Harbin Engineering University, Harbin, China

A Benchmark Study on Applying Extended Finite Element Method to the Structural Integrity Assessment of Subsea Pipelines at HPHT Service Conditions OMAE2018-77407

Ankang Cheng¹ Nianzhong Chen²
1. Newcastle University, Newcastle upon Tyne, United Kingdom; 2. Harbin Engineering University, Harbin, China

Study on the Effect of Climate Changes on Ship Responses based on Nonlinear Simulations OMAE2018-77934

Bingjie Guo, Odin Gramstad, Erik Vanem, Elzbieta M. Bitner-Gregersen
DNV GL, Høvik, Norway

Honoring Symposium for Professor Bernard Molin on Marine and Offshore Hydrodynamics

13-10-1 Seakeeping

Wednesday June 20 Room: **Londres** | 13:30 – 15:00

Session Chair: TBA

Large Wave Run-ups due to Tertiary Interactions in Irregular Waves

OMA2018-78740
Wenhua Zhao
The University of Western Australia, Perth, WA, Australia

An Improved Body-exact Method to Predict Large Amplitude Ship Roll Responses OMAE2018-78720

Rahul Subramanian¹ Naga Venkata Rakesh² Robert F. Beck³
1. Texas A&M, Galveston, TX, USA; 2. Indian Institute of Technology Madras, Chennai, TN, India; 3. University of Michigan, Ann Arbor, MI, USA

Comparison of RANS Method and Discrete Vortex Method on Simulating the Roll Motion of a Ship with Bilge Keels OMAE2018-78474

Yichen Jiang¹ Xiaojie Zhao¹ Zhihua Zeng² Tiezhi Sun¹ Jiawen Li³ Zhi Zong¹
1. Dalian University of Technology, Dalian, China; 2. Shanghai Jiao Tong University, Shanghai, China; 3. Dalian Maritime University, Dalian, China

REFRESHMENT BREAK

15:00 – 15:30
Location: **Venecia / Milán / Roma**

CONCURRENT SESSIONS

15:30 – 17:30

Offshore Technology

1-3-1 Nonlinear Wave and Wave Effects

Wednesday June 20 Room: **Bonn** | 15:30 – 17:30

Session Chair: Longfei Xiao, Shanghai Jiao Tong University, China
Session Co-Chair: Zhigang Kevin Tian, Exmar offshore, USA

Semi-Empirical Single Realization and Ensemble Crest Distributions of Long-Crest Nonlinear Waves OMAE2018-78192

Zhenjia (Jerry) Huang¹ Yu Zhang²
1. Exxonmobil Upstream Research Company, Spring, TX, USA; 2. Massachusetts Institute of Technology, Cambridge, MA, USA

Observed Wave Actions on Norwegian Semi-Submersible and TLP Decks OMAE2018-77008

Arne Kvitrud, Anders H. Løland
Petroleum Safety Authority, Stavanger, Norway

Validation and Development of Improved Methods for the Calculation of Wave Loads on XXL Monopiles OMAE2018-77232

Mareike Leimeister¹ Bastian Dose²
1. Fraunhofer Institute for Wind Energy Systems IWES, Bremerhaven, Germany;
2. Fraunhofer Institute for Wind Energy Systems IWES, Oldenburg, Germany

Experimental and Numerical Study of the Free Surface Elevation Over the pontoons of a Semisubmersible Platform in Waves OMAE2018-78009

João Pessoa¹ Carl Trygve Stansberg² Nuno Fonseca³ Manuel Laranjinha¹
1. Wood Group, Sandefjord, Norway; 2. Marinteknikk, Trondheim, Norway;
3. SINTEF Ocean, Trondheim, Norway

Hydro-elasticity of the Floating Bridge in Waves Considering the Effect of the Hydrodynamic Coupling and the Shore Sides OMAE2018-78738

Shi Deng¹ Shixiao Fu² Torgeir Moan³ Wei Wei² Zhen Gao¹
1. Norwegian University of Science and Technology, Trondheim, Norway;
2. Shanghai Jiao Tong University, Shanghai, China;
3. Centre For Ships & Ocean Structures, Trondheim, Norway

Offshore Technology

1-7-2 Wave Loading and Motions in Extreme Seas II

Wednesday June 20 Room: **Colonia** | 15:30 – 17:30

Session Chair: Limin Yang, DNV GL, Norway
Session Co-Chair: Csaba Pakozdi, SINTEF Ocean, Norway

Assessment of Current Offshore Supply Vessel Capabilities for Crew Transfer Operations in the Flemish Pass OMAE2018-78014

Mitchell Anderson, David Molyneux
Memorial University of Newfoundland, St. John's, NL, Canada

Influence of Viscosity and Non-linearities in Predicting Motions of a Wind Energy Offshore Platform in Regular Waves OMAE2018-78127

Jose del Aguila Ferrandis¹ Ricardo Zamora-Rodriguez²
Chryssostomos Chryssostomidis³ Luca Bonfiglio³
1. MIT, Pozuelo de Alarcón, Spain; 2. UPM, Madrid, Spain; 3. Massachusetts Institute of Technology, Cambridge, MA, USA

Analysis of Semi-Submersible under Combined High Waves and Current Conditions Compared with Model Tests OMAE2018-78595

Limin Yang, Arne Nestegaard, Erik Falkenberg
DNV GL, Høvik, Norway

Calibration of a Time-domain Numerical Hydrodynamic Model for Mooring Analysis of a Semi-Submersible OMAE2018-78753

Nuno Fonseca¹ Carl Trygve Stansberg²
1. SINTEF Ocean, Trondheim, Norway; 2. Marinteknikk, Trondheim, Norway

Structures, Safety and Reliability

2-9-2 Extreme Loading and Responses II

Wednesday June 20 Room: **Munich** | 15:30 – 17:30

Session Chair: Yasuhira Yamada, National Maritime Research Institute (NMRI), Japan

Session Co-Chair: Shan Wang, Centre for Marine Technology and Ocean Engineering, Lisboa, Portugal

Numerical Study on the Response of Functionally Graded PVC Foam Core Sandwich Panels Subjected to Non-contact Underwater Explosion OMAE2018-77629

Tianyu Zhou, Pan Zhang, Yuansheng Cheng, Manxia Liu, Jun Liu
Huazhong University of Science and Technology, Wuhan, China

Numerical Investigation into the Effect of Stand-off Distance on the Blast Performance of Metallic Corrugated-Core Sandwich Panels OMAE2018-77739

Sipei Cai¹ Jun Liu¹ Yuansheng Cheng¹ Weiwei Hao² Pan Zhang¹
1. Huazhong University of Science and Technology, Wuhan, China;
2. China Institute of Marine Technology & Economic (CIMTEC), Peking, China

Simulative Research on Projectile Penetration into Steel Plate based on Material Point Method OMAE2018-77026

Yezhi Qin¹ Ying Wang¹ Xiongliang Yao¹ Zhikai Wang²
1. Harbin Engineering University, Harbin, China;
2. Harbin Engineering University, Harbin, China

Structures, Safety and Reliability

2-12-1 Structural Analysis and Optimization I

Wednesday June 20 Room: **Dusseldorf** | 15:30 – 17:30

Session Chair: Jonas W. Ringsberg, Chalmers University of Technology, Gothenburg, Sweden

Session Co-Chair: Paulo Videiro, UFRJ, Rio de Janeiro, RJ, Brazil

Numerical Investigation of Ultimate Strength of Stiffened Plates with Various Cross-Section Forms OMAE2018-77756

Huilong Ren, Yifu Liu, Chenfeng Li, Xin Zhang, Zhaonian Wu
Harbin Engineering University, Harbin, China

Impact of Connection Properties on Dynamic Response of Modular Floating Structures OMAE2018-78045

Yuming Zhang, Haixiao Liu
Tianjin University, Tianjin, China

Dynamic Constitutive Model Application and Validation for Offshore Structures under Dropped Object Impact Loads OMAE2018-78048

Maryam Mortazavi, YeongAe Heo
Case Western Reserve University, Cleveland, OH, USA

Thermal Elasto-plastic Analysis of Welding Sequence for Least Distortion of Overlay Welded Structure OMAE2018-77546

Sungwook Kang¹ Jaewoong Kim² Dongjoo Kim¹ Youngjae Jang³ Jae-Young Cho⁴
1. Korea Institute of Industrial Technology, Jinju, Korea; 2. Korea Institute of Industrial Technology, Gwangju, Korea; 3. Hyundai Heavy Industries, Ulsan, Korea; 4. Myeong-Jin TSR Co., LTD, Ulsan, Korea

Towards an Efficient Lower-bound Buckling Load Prediction for Stiffened Cylindrical Shells OMAE2018-77140

Kuo Tian
Dalian University of Technology, Dalian, China

Pipelines, Risers, and Subsea Systems

4-3-6 Pipe-Soil Interaction

Wednesday June 20 Room: **Frankfurt** | 15:30 – 17:30

Session Chair: Celso K. Morooka, University of Campinas/Faculty of Mechanical Engineering/Center for Petroleum Studies, Brazil
 Session Co-Chair: Daniel Carneiro, Wood, Brazil

Performance of Pipe-soil Interaction Models in a Quasi-dynamic Approach to Pipeline Stability Analysis OMAE2018-77988

Kourosh Abdolmaleki¹ John Gregory²
 1. INTECSEA WorleyParsons Group, West Perth, WA, Australia;
 2. Exxonmobil, Spring, TX, USA

Pipeline and Cable Stability – Updated State of the Art OMAE2018-77736

Terry Griffiths¹ Scott Draper¹ David White² Liang Cheng³ Hongwei An¹ Feifei Tong¹ Antonino Fogliani⁴
 1. The University of Western Australia, Crawley, WA, Australia; 2. University of Southampton, Southampton, United Kingdom; 3. The University of Western Australia, Perth, WA, Australia; 4. Dept. of Civil, Environmental and Mining Engineering, The University of Western Australia, Crawley, WA, Australia

Improved Stability Design of Subsea Pipelines on Mobile Seabed: Learnings from the STABLEpipe JIP OMAE2018-77217

Scott Draper¹ Terry Griffiths¹ David White² Liang Cheng³ Hongwei An¹ Antonino Fogliani⁴
 1. The University of Western Australia, Crawley, WA, Australia; 2. University of Southampton, Southampton, United Kingdom; 3. The University of Western Australia, Perth, WA, Australia; 4. Dept. of Civil, Environmental and Mining Engineering, The University of Western Australia, Crawley, WA, Australia

Subsea Cable Stability on Rocky Seabeds – Comparison of Field Observations Against Conventional and Novel Design Methods

OMA2018-77130
 Terry Griffiths¹ David White² Scott Draper¹ Fraser Johnson³ Daniel Coles⁴ Stephen Ingham⁵ Caroline Lourie⁶ Liang Cheng⁶ Feifei Tong¹ Antonino Fogliani⁷
 1. The University of Western Australia, Crawley, WA, Australia; 2. University of Southampton, Southampton, United Kingdom; 3. Atlantis Resources Scotland, Edinburgh, Scotland, United Kingdom; 4. Atlantis Resources Ltd, Edinburgh, Scotland, United Kingdom; 5. JDR Cables Ltd, Hartlepool, United Kingdom; 6. The University of Western Australia, Perth, WA, Australia; 7. Dept. of Civil, Environmental and Mining Engineering, The University of Western Australia, Crawley, WA, Australia

Ocean Space Utilization

5-6-1 Behaviours of Structure in Tsunami and Port Management

Wednesday June 20 Room: **Berlin** | 15:30 – 17:30

Session Chair: Koichi Masuda, Nihon University, Japan
 Session Co-Chair: Koji Takahashi, Japan Port Consultants, Ltd., Japan

Cooperation of the Ports at the Time of the Large-Scale Disaster such as High Tide and Tsunamis OMAE2018-77704

Koji Takahashi, Japan Port Consultants, Ltd., Shinagawa, Japan

A Fundamental Study on Collision of a Tsunami Drifting Objects against Structures using MPS Method and Finite Element Method OMAE2018-77874

Koichi Masuda¹ Tomoki Ikoma¹ Daichi Murata² Hiroaki Eto¹ Akihiro Matsuoka² Yasuhiro Aida³ Masaharu Ikegami⁴
 1. Nihon University, Funabashi, Japan; 2. Nihon University, Chiba, Japan; 3. National Institute of Maritime, Port and Airport Technology Port and Airport Research Institute, Kanagawa, Japan; 4. PorTech Co., Ltd., Tokyo, Japan

A Fundamental Study on Damage of Wash Up to the Quay of the Moored Vessel in Tsunamis using the MPS Method Considered the Fender Influences OMAE2018-78236

Mitsuhiro Masuda¹ Kiyokazu Minami¹ Koichi Masuda²
 1. Tokyo University of Marine Science and Technology, Tokyo, Japan;
 2. Nihon University, Funabashi, Japan

Storm Surge Estimation along Tokyo Bay based on a Simple Stochastic Approach OMAE2018-77353

Rikito Hisamatsu¹ Sooyoul Kim² Shigeru Tabeta³
 1. The University of Tokyo, Chiba, Japan; 2. Tottori University, Tottori, Japan; 3. The University of Tokyo, Kashiwa, Japan

Ocean Engineering

6-2-3 Wave-Structure Interactions II

Wednesday June 20 Room: **Marsella** | 15:30 – 17:30

Session Chair: Kostas Belibassakis, National Technical University of Athens, Greece

Application of Boundary Element Method for Determination of the Wavemaker Driving Signal OMAE2018-77069

Anatoliy Khait, Lev Shemer
 Tel Aviv University, Tel Aviv, Israel

Experimental Study on Crescent Waves Diffracted by a Circular Cylinder OMAE2018-77344

Zou Zhili, Ma Liang, Yan Kai, Zhang Yang, Hu Yuyuan
 Dalian University of Technology, Dalian, China

Numerical and Experimental Study of Wave-induced Load Effects on a Submerged Body near the Surface OMAE2018-77624

Leo M. Jones, Joseph T. Klamon, Young Kwon, Jarema M. Didoszak
 Naval Postgraduate School, Monterey, CA, USA

Surface Waves Generated by a Translating and Oscillating Source Atop Realistic Shear Flows OMAE2018-78560

Yan Li, Simen Ellingsen
 Norwegian University of Science and Technology, Trondheim, Norway

Laboratory Study on the Turbulent Boundary Layers over Wind-Waves Roughness OMAE2018-77819

Tunggul Bhirawa¹ Kevin Kevin¹ Junghoon Lee² Jason P. Monty¹
 1. Department of Mechanical Engineering, The University of Melbourne, Melbourne, VIC, Australia; 2. Australia-China Joint Research Centre for Maritime Engineering, Melbourne, VIC, Australia

Ocean Engineering

6-13-4 Metocean IV: Waves and Long Term Climate Trends

Wednesday June 20 Room: **Burdeos** | 15:30 – 17:30

Session Chair: Gus Jeans, Oceananalysis Ltd, United Kingdom
 Session Co-Chair: Kevin Ewans, MetOcean Research Ltd, New Zealand

Wave Buoy Performance in Short and Long Waves, Evaluated using Tests on a Hexapod OMAE2018-77092

Sanne van Essen¹ Kevin Ewans² Jason McConochie³
 1. MARIN, Wageningen, Netherlands; 2. MetOcean Research Ltd, New Plymouth, New Zealand; 3. Shell Global Solutions International B.V., Rijswijk, Netherlands

Nonlinear Deepwater Extreme Wave Height and Modulation Wave Length Relation OMAE2018-78755

Ali Mohtat¹ Solomon Yim¹ Alfred Osborne² Ming Chen¹
 1. Oregon State University, Corvallis, OR, USA;
 2. Nonlinear Wave Research Corporation, Alexandria, VA, USA

Comparison of Wind and Wave Extremes in Very Long-Term Climatic Scales OMAE2018-77581

Christos Stefanakos¹ Erik Vanem²
 1. SINTEF Ocean, Trondheim, Norway; 2. DNV GL, Høvik, Norway

Impact of Climate Change on the North Sea Offshore Energy Sector OMAE2018-77989

Nicolas Fournier¹ Galina Guentchev¹ Justin Krijnen¹
 Andy Saulter¹ Caroline Acton² Helen Hanlon¹
 1. Met Office, Exeter, United Kingdom; 2. Met Office, Devon, United Kingdom

Polar and Arctic Sciences and Technology

7-8-3 Numerical Ice Modeling III

Wednesday June 20 Room: **Baden Baden** | 15:30 – 17:30

Session Chair: Fang Li, Aalto University, Finland
 Session Co-Chair: Walter Kuehnlein, sea2ice, Germany

Applications of Wavelet Transform in Ice-induced Vibrations of Structures OMAE2018-77884

Bowei Yu¹ Yingying Chen¹ Ying Min Low¹ Kim Thow Yap²
 1. National University of Singapore, Singapore, Singapore;
 2. Keppel Offshore & Marine Technology Centre, Singapore, Singapore

Study on the Influence of Ice-water Coupling on Numerical Calculation of Ice Load OMAE2018-77898

Hui Li, Zheng Yang, Yan Feng, Yubo Wang, Wang Siyu
 Harbin Engineering University, Harbin, China

Preliminary 3D DEM Study on the Effect of Ridge Keel Width on Ship Resistance OMAE2018-78765

Hanyang Gong, Arttu Polojärvi, Jukka Tuhkuri
 Aalto University, Espoo, Finland

Simulator for Arctic Marine Structures (SAMS) OMAE2018-78592

Raed Lubbad¹ Sveinung Løset¹ Wenjun Lu¹ Andrei Tsarau² Marnix van den Berg¹
 1. Norwegian University of Science and Technology (NTNU), Trondheim, Norway;
 2. Sustainable Arctic Marine and Coastal Technology (SAMCoT), Centre for Research-based Innovation, Trondheim, Norway

CFD and FSI

8-2-1 Free Surface Loading and Structure Interaction

Wednesday June 20 Room: **Stuttgart** | 15:30 – 17:30

Session Chair: Tim Bunnik, MARIN, Netherlands
 Session Co-Chair: Hans Bihs, NTNU Trondheim, Norway

Evaluation of the Impact of a Free Surface in a Typical FSI Problem OMAE2018-77207

Héctor Rubén Díaz-Ojeda¹ Leo Gonzalez¹ Francisco Huera-Huarte²
 1. Universidad Politécnica de Madrid, Madrid, Spain; 2. Universitat Rovira I Virgili, Tarragona, Spain

CFD Simulations of Multi-directional Irregular Wave Interaction with a Large Cylinder OMAE2018-77511

Weizhi Wang, Arun Kamath, Hans Bihs
 Norwegian University of Science and Technology, Trondheim, Norway

Investigation on Breaking Focused Wave-Induced Loads on a Monopile with CFD Models OMAE2018-77752

Pietro D. Tomaselli¹ Ankit Aggarwal² Hans Bihs² Erik Damgaard Christensen³
 1. DHI, Hørsholm, Denmark; 2. Norwegian University of Science and Technology, Trondheim, Norway; 3. Technical University of Denmark, Kgs Lyngby, Denmark

Boom Overtopping Assessment based on a Coupled Hydrodynamic – CFD Analysis OMAE2018-77848

Hans Limburg, Bruno Sainte-Rose, Jean-Sebastien Verjut
 The Ocean Cleanup, Delft, Netherlands

CFD and FSI

8-4-1 VIV Physics I

Wednesday June 20 Room: **Dresden** | 15:30 – 17:30

Session Chair: Narakorn Srinil, Newcastle University, United Kingdom
 Session Co-Chair: Efsthios Konstantinidis, University of Western Macedonia, Greece

Phenomenological Modelling of Cylinder VIV with Contributions from Oscillatory Flows OMAE2018-77689

Pierre-Adrien Opinel, Narakorn Srinil
 Newcastle University, Newcastle upon Tyne, United Kingdom

A Time Domain Prediction Method for Vortex-induced Vibrations of a Flexible Pipe with Time-varying Tension OMAE2018-77451

Mengmeng Zhang¹ Shixiao Fu¹ Haojie Ren¹ Runpei Li¹ Leijian Song²
 1. Shanghai Jiao Tong University, Shanghai, China;
 2. Shanghai Electric Wind Power Group, Shanghai, China

Insights of the Vortex-Induced Vibration Phenomenon: Ideal Models Versus Reality OMAE2018-77708

Robert Zueck
 US Navy - NAVFAC EXWC, Port Hueneme, CA, USA

VIV Response and Fatigue Damage of Flexible Cylinders with Time-varying Axial Tension OMAE2018-77142

Yuchao Yuan, Hongxiang Xue, Wenyong Tang, Jun Liu
 Shanghai Jiao Tong University, Shanghai, China

The Characteristics of Local Vortex Shedding from a Bio-Inspired Cylinder at Subcritical Reynolds Number OMAE2018-77762

Hyo Ju Kim, Hyun Sik Yoon
 Pusan National University, Busan, Korea

Ocean Renewable Energy

9-2-2 Numerical and Experimental Studies

Wednesday June 20 Room: **Estrasburgo** | 15:30 – 17:30

Session Chair: Wojciech Popko, Fraunhofer Institute for Wind Energy Systems IWES, Germany
 Session Co-Chair: Lance Manuel, University of Texas at Austin, USA

A Surrogate Modeling Approach for Fatigue Damage Assessment of Floating Wind Turbines OMAE2018-78219

Kolja Müller, Po Wen Cheng
 University of Stuttgart, Stuttgart, Germany

Progress on the Development of a Holistic Coupled Model of Dynamics for Offshore Wind Farms, Phase I: Aero-Hydro-Servo-Elastic Model, with Drive Train Model, for a Single Wind Turbine OMAE2018-77886

Zi Lin, Debora Cevasco, Maurizio Collu
Cranfield University, Cranfield, United Kingdom

Development of a Scaled Rotor Blade for Tank Tests of Floating Wind Turbine Systems OMAE2018-77156

Paul Schünemann, Timo Zwisele, Frank Adam, Uwe Ritschel
University of Rostock, Rostock, Germany

Verification of a Floating Wind Turbine through a Seakeeping-structural-aerodynamics Coupled Analysis in the Time Domain

OMA2018-77255

José Enrique Gutiérrez Romero¹ Borja Serván Camas² Alejandro Luna García-Valenzuela¹ Jonathan Colom Cobb² Julio García Espinosa²

1. Universidad Politécnica de Cartagena, Cartagena, Spain;
2. International Centre for Numerical Methods in Engineering, Barcelona, Spain

Active Load Mitigation to Counter the Fatigue Damage Contributions from Unavailability in Offshore Wind Turbines OMAE2018-77962

Stian H. Sørum, Emil Smilden, Jorgen Amdahl, Asgeir J. Sørensen
Norwegian University of Science and Technology, Trondheim, Norway

Offshore Geotechnics

10-3-1 Pile Foundations I

Wednesday June 20

Room: **Paris** | 15:30 – 17:30

Session Chair: Gudmund Eiksund, NTNU, Norway

Scale Model Investigations on Vibro Pile Driving OMAE2018-77081

Philipp Stein, Nils Hinzmann, Jörg Gattermann
Technische Universität Braunschweig, Institute of Foundation Engineering and Soil Mechanics, Braunschweig, Germany

Insights into Compaction Grouting for Offshore Pile Foundations OMAE2018-77277

Peter Geißler, Pablo Cuéllar, Götz Hüskens, Hans-Carsten Kühne, Matthias Baeßler
Bundesanstalt für Materialforschung und -prüfung (BAM), Berlin, Germany

End Bearing Capacity of Piles Embedded in Rock OMAE2018-77358

Mustafa Jafari, Haythem Gharsallaoui, Karl Henry Victor, Alain Holeyman
Université Catholique de Louvain, Louvain La Neuve, Belgium

Study on the Lateral Bearing Capacity of Single-Helix Pile for Offshore Wind Power OMAE2018-77391

Hongyan Ding, Le Wang, Puyang Zhang, Conghuan Le
Tianjin University, Tianjin, China

Study on Vertical Bearing Capacity of the Riser Composite Pile in Clay OMAE2018-78492

Chao Liang¹ Run Liu¹ Jun Wan² Pai Guan² Xiangyun Li²
1. Tianjin University, Tianjin, China; 2. Tianjin Branch of China National Offshore Oil Corporation, Tianjin, China

Petroleum Technology

11-3-1 Inflow Control Technology in Reservoir Management

Wednesday June 20

Room: **Potsdam** | 15:30 – 17:30

Session Chair: Bernt Aadnoy, University of Stavanger, Norway

Application of Water Shut-off Technology with Coiled Tubing in High-Water-Cut Gas Wells OMAE2018-78342

Jie Wang¹ Fujian Zhou¹ Lufeng Zhang¹ Fan Fan¹ Hong Yang²
1. China University of Petroleum (Beijing), Beijing, China; 2. Yanchang Petroleum Group Co. Ltd, Xi'an, China

Autonomous Inflow Control Device Pilot Application for Extra Heavy Oil Field OMAE2018-77223

Mahmoud Abdel Rafea, Cristhian Criado
Repsol, Madrid, Spain

Increasing Performance of Smart Well Systems by Chemical Downhole Injection OMAE2018-78580

Bernt Aadnoy
University of Stavanger, Stavanger, Norway

Stabilized Water-Cut in Carbonate Naturally-Fractured Reservoirs with Bottom Water with an Implication in Well Spacing Design for Recovery Optimization OMAE2018-78724

Samir Prasun, Andrew Wojtanowicz
Louisiana State University, Baton Rouge, LA, USA

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-2-4 Floater Dynamics and Hydrodynamics IV

Wednesday June 20

Room: **Bristol** | 15:30 – 17:30

Session Chair: Suresh Rajendran, Dept. of Ocean Engineering, India

Session Co-Chair: Claes Gunnar Eskilsson, Aalborg University, Denmark

An Analytical Model Study of a Flapping Hydrofoil for Wave Propulsion OMAE2018-77231

D.B.S. Lopes¹ Jose Falcao de Campos² A.J.N.A. Sarmiento¹
1. Instituto Superior Técnico, Lisboa, Portugal; 2. Tecnico/ULisboa, Lisbon, Portugal

Squat Effects on a Towed Gravity Based Structure with Low Under-bottom Clearance OMAE2018-77093

Cosmin Ciortan¹ Helge Johnsgard² Olav Rognebakke¹ Eivind Ruth¹ Meghan Overstake³
1. DNV GL, Høvik, Norway; 2. Kiewit-Kværner Contractors, Lysaker, Norway; 3. ExxonMobil, St. John's, NL, Canada

CFD Parametric Study of Effects of Geometrical Variations on the Vortex-Induced Motions of Deep-Draft Semi-Submersibles OMAE2018-78377

Weiwen Zhao, Decheng Wan
Shanghai Jiao Tong University, Shanghai, China

Numerical Modeling and Experimental Comparison of Elastically Connected Barges OMAE2018-78397

Daniele Dessi, Edoardo Faiella
CNR-INSEAN, Rome, Italy

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-5-3 Fatigue Strength

Wednesday June 20

Room: **Oxford** | 15:30 – 17:30

Session Chair: Nianzhong Chen, Harbin Engineering University, China

Session Co-Chair: Jingxia Yue, Wuhan University of Technology, China

The Effect of Fatigue Loading Spectrum on Crack Propagation in a Ship Detail OMAE2018-77152

Xiaoping Huang¹ Xiaoshun Yan¹ Muk Chen Ong² Yingcai Huang³

1. Shanghai Jiao Tong University, Shanghai, China; 2. University of Stavanger, Stavanger, Norway; 3. Instituto Superior Técnico, Universidade de Lisboa, Lisbon, Portugal

Simplified FEA Models in the Analysis of the Redistribution of Beneficial Compressive Stresses in Welds during

Cyclic Loading OMAE2018-77401

B L Josefson¹ J Alm¹ J M J McDill²

1. Chalmers University of Technology, Goteborg, Sweden; 2. Carleton University, Ottawa, ON, Canada

Fracture Mechanics Based Mooring Chain Fatigue Analysis for a Semi-Submersible Subjected to Tension and Torque OMAE2018-77409

Xutian Xue¹ Nianzhong Chen²

1. Newcastle University, School of Engineering, Newcastle upon Tyne, United Kingdom; 2. Harbin Engineering University, Harbin, China

Design Analysis and Fatigue Testing of the Typical Structural Details of Aluminium Ships OMAE2018-77834

Huilong Ren, Kaikai Ma, Guoqing Feng, Zhichao Zhang, Weijun Xu, Chenfeng Li
Harbin Engineering University, Harbin, China

Honoring Symposium for Professor Bernard Molin on Marine and Offshore Hydrodynamics

13-9-1 Sloshing in Tanks

Wednesday June 20

Room: **Londres** | 15:30 – 17:30

Session Chair: Alessandro Iafrati, CNR-INSEAN (Marine Technology Research Institute), Roma, RM, Italy

Resonant Steady-state Sloshing in Upright Tanks: Effect of Three-dimensional Excitations and Viscosity OMAE2018-77534

Alexander Timokha¹ Ihor Raynovskyy²

1. Norwegian University of Science and Technology, Trondheim, Norway; 2. Institute of Mathematics, National Academy of Sciences of Ukraine, Kiev, Ukraine

Numerical Modeling of the Forced Motion Dynamics of Anti-roll Tank with Openfoam OMAE2018-77609

Vicente R. Bernal-Colio, J.L. Cercos-Pita, Javier Calderon-Sanchez, Héctor Rubén Díaz-Ojeda, Ricardo Abad, Antonio Souto-Iglesias
Universidad Politécnica de Madrid (UPM), Madrid, Spain

Numerical Study of Density Ratio Influence on Global Wave Shapes Before Impact OMAE2018-78624

Stephane Etienne¹ Yves-Marie Scolan² Laurent Brosset³

1. Ecole Polytechnique De Montreal, Montral, QC, Canada; 2. ENSTA Bretagne, Brest, France; 3. GTT, Saint-Rémy-lès-Chevreuse, France

Numerical Study of Phase Change Influence on Wave Impact Loads in LNG Tanks on Floating Structures OMAE2018-78643

Matthieu Ancellin¹ Laurent Brosset² Jean-Michel Ghidaglia³

1. University College Dublin, Dublin, Ireland; 2. GTT, Saint-Rémy-lès-Chevreuse, France; 3. ENS Paris-Saclay, Cachan, France

Nonlinear Effects of Wave Heights on Coupled Sloshing and Sea-keeping Responses OMAE2018-78232

Xin Wang¹ Makoto Arai² Gustavo M. Karuka²

1. Newcastle University, Newcastle upon Tyne, United Kingdom; 2. Yokohama National University, Yokohama, Japan

AFTERNOON LECTURE SERIES

17:45 – 18:30

Location: **Londres**

Some Recent Developments in 3-d Wave Diffraction Methods: Applications and Numerical Aspects



Dr. Johannes Pinkster, Professor Emeritus of Ship Hydromechanics, Delft University of Technology Consultant, Pinkster Marine Hydrodynamics (PMH bv)

See Afternoon Lecture Series, page 25 for more details.

Prof. Johannes Pinkster

Conference Banquet

Transport from the Marriott to the Banquet: 19:30 – 20:00

Banquet: 20:00 – 24:00

Location: **Palacio del Negralejo**

See Social Events, page 14 for more details.

Conference Banquet sponsored by Repsol



Thursday, June 21

Time	Title	Location
07:30 – 10:00	Outreach Breakfast/Feedback Session	Paris
08:30 – 10:30	Exhibition open	Venecia/Milán/Roma
08:30 – 10:00	Concurrent Sessions	See pages 76–80 for session titles, authors and locations
10:00 – 10:30	Refreshment Break	Venecia/Milán/Roma
10:30 – 12:00	Concurrent Sessions	See pages 80–84 for session titles, authors and locations
12:00 – 13:30	Technical Session Organizers' Lunch	Buffet Madrid/ France-Madrid Gallery/ Lyon/Toulouse
13:30 – 15:00	Concurrent Sessions	See pages 84–88 for session titles, authors and locations
15:00 – 15:30	Refreshment Break	Venecia/Milán/Roma
15:30 – 17:30	Concurrent Sessions	See pages 88–92 for session titles, authors and locations
17:30 – 19:30	Farewell Reception	Venecia/Milán/Roma

CONCURRENT SESSIONS

08:30 – 10:00

Offshore Technology

1-3-2 Numerical Methods and Experiments

Thursday June 21 Room: **Bonn** | 08:30 – 10:00

Session Chair: Samuel Kanner, Principle Power Inc, USA

Session Co-Chair: Xinliang Tian, Shanghai Jiao Tong University, China

Application of Wave Devouring Propulsion Technology to Support Positioning of Floating Structure OMAE2018-77143

Hisafumi Yoshida¹ Keiichi Yamasaki² Shunji Sunahara³

1. Japan Marine United Corporation, Tsu-city, Japan; 2. School of Marine Science and Technology, Tokai University, Shizuoka-City, Japan; 3. Tokai University, Shizuoka-Shi, Japan

Modeling the Effect of Phase Change on LNG Impact with Open-Source CFD OMAE2018-77990

Javier Calderon-Sanchez, Daniel Duque, Jesus Gómez-Goñi
Universidad Politécnica de Madrid, Madrid, Spain

Discussions on the Convergence of the Seakeeping Simulations based on the Panel Methods OMAE2018-77999

Ivana Martić¹ Nastia Degiuli¹ Sime Malenica² Andrea Farkas¹

1. University of Zagreb, Zagreb, Croatia; 2. Bureau Veritas, Paris, France

Experimental Study on Flexible Bare Pipe Arrays Undergoing Vortex-Induced Vibrations OMAE2018-78471

Yang Liu, Chen Shi, Zhihui Liu, Jialu Wang, Xingxian Bao
China University of Petroleum (East China), Qingdao, China

Structures, Safety and Reliability

2-10-1 Collision and Crashworthiness I

Thursday June 21 Room: **Dusseldorf** | 08:30 – 10:00

Session Chair: Sören Ehlers, Technical University of Hamburg, Hamburg, Germany

Session Co-Chair: Zhiqiang Hu, Newcastle University, Newcastle upon Tyne, United Kingdom

Experimental and Numerical Investigation of Aluminum Alloy Plates with Initial Crack under Repeated Dynamic Impact Loads OMAE2018-77158

Fangjuan Duan¹ Jingxi Liu¹ Weiguang Liu¹ Zhiqiang Hu² De Xie¹

1. Huazhong University of Science and Technology, Wuhan, China; 2. Newcastle University, Newcastle upon Tyne, United Kingdom

Experimental Investigation into the Effect of Impact Loading on the Response of Metallic Trapezoidal Corrugated Core Sandwich Panels OMAE2018-77485

Haifu Yang, Kai Chen, Pan Zhang, Yuansheng Cheng, Jun Liu
Huazhong University of Science and Technology, Wuhan, China

Pipeline Fracture due to Compression-tension Loading Caused by Foreign Object Impact OMAE2018-77964

Martin Kristoffersen¹ Lars Olovsson² Tore Børvik¹

1. Norwegian University of Science and Technology, Trondheim, Norway; 2. IMPETUS Afea, Huddinge, Sweden

Research on the Crushing Energy Absorption and Underwater Blast Resistance Performances of Corrugated Cores Sandwich Panels OMAE2018-78644

Yanchang Zhang¹ Yaosheng Zhu¹ Kun Liu² Zili Wang³

1. Marine Design & Research Institute of China, Shanghai, China; 2. Shanghai Jiao Tong University/ Jiangsu University of Science and Technology, Zhenjiang, China; 3. Jiangsu University of Science and Technology, Zhenjiang, China

Structures, Safety and Reliability

2-12-2 Structural Analysis and Optimization II

Thursday June 21 Room: **Munich** | 08:30 – 10:00

Session Chair: Paulo Videiro, UFRJ, Rio de Janeiro, RJ, Brazil

Session Co-Chair: Marc Cahay, Technip, France

Numerical Investigation on Weld Induced Imperfections in Aluminium Ship Plates OMAE2018-77655

Bai-Qiao Chen¹ Carlos Guedes Soares²

1. Centre for Marine Technology and Ocean Engineering (CENTEC), Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal; 2. Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

Onset and Post Buckling of Pipe in Pipe's Helical Buckling using Improved Energy Method OMAE2018-77032

Lixin Gong
Stress Engineering Services, Houston, TX, USA

Development of Parametric Simulation Models for Metal Forming Processes of Plate Structures OMAE2018-77110

Tom Wurzler, Thomas Lindemann, Josefine Kistner, Patrick Kaeding
University of Rostock, Rostock, Germany

Analysis of Yielding and Buckling Strength of a Less Ballast Water Crude Oil Tanker OMAE2018-77474

Xueqian Zhou, Hexing Song, HuiLong Ren, Chenfeng Li, Wang Siyu
Harbin Engineering University, Harbin, China

Pipelines, Risers, and Subsea Systems

4-2-1 Rigid Risers – Design

Thursday June 21 Room: **Frankfurt** | 08:30 – 10:00

Session Chair: Adrian Connaire, Wood, Ireland

Session Co-Chair: Olav Fyrileiv, DNVGL, Norway

On Bending Performance of Additively Manufactured Steel Catenary Riser (SCR) – Effect of Welding Residual Stress on Bending Strain Capacity OMAE2018-77055

Alireza Ebrahimi¹ Shawn Kenny² Mohsen Mohammadi³
1. Marine Additive Manufacturing Centre of Excellence (MAMCE), University of New Brunswick, Fredericton, NB, Canada; 2. Carleton University, Ottawa, ON, Canada; 3. University of New Brunswick, Fredericton, NB, Canada

Qualification Testing of Titanium Stress Joints Designed for Galvanic Hydrogen Mitigation Conveying Hot, Sour Well Fluids OMAE2018-78105

Ronald W. Schutz¹ Gabriel Rombado² David A. Baker³
Heath Walker⁴ Christopher Caldwell⁴
1. Arconic Titanium & Engineered Products, Niles, OH, USA; 2. ExxonMobil Production Company, Spring, TX, USA; 3. ExxonMobil Upstream Research Company, Spring, TX, USA; 4. Arconic Titanium & Engineered Products, Spring, TX, USA

Riser Concept Selection for FPSO Stationed in Deepwater Norewegian Sea: a Case Study OMAE2018-78344

Arvind Keprate, R.M. Chandima Ratnayake
University of Stavanger, Stavanger, Norway

Study on the Effects of Drilling Riser Attachments OMAE2018-77171

Sung-Je Lee¹ Chan-Hoe Kang¹ Jeong-Ho Lee¹ Chang-Hwan Jang¹
Sung-Gun Park² Sung-Kon Han²
1. Daewoo Shipbuilding & Marine Engineering (DSME), Geoje-si, Korea; 2. Daewoo Shipbuilding & Marine Engineering Co. Ltd., Seoul, Korea

Pipelines, Risers, and Subsea Systems

4-3-2 Mechanics II

Thursday June 21 Room: **Berlin** | 08:30 – 10:00

Session Chair: Duane DeGeer, INTECSEA, USA

Session Co-Chair: Arjen Meijer, INTECSEA, Netherlands

Advanced FE Modelling Approach for Pipeline Hooking Interaction of Dragged Anchors OMAE2018-77473

Lorenzo Marchionni¹ Lorenzo Maria Bartolini¹ Antonio Parrella¹ Luigino Vitali²
1. Saipem, Fano, Italy; 2. Saipem Energy Services, Fano, Italy

Fatigue Behaviour of Dented Pipes under Internal Pressure: a Numerical-Experimental Approach OMAE2018-77524

Mario A. Polanco-Loria, Håvar Ilstad
Statoil, Trondheim, Norway

Risks to Marine Pipelines from Drifting Ice: Gathering the Evidence OMAE2018-78258

Paul Barrette¹ David McGonigal² Kenton Pike³
1. National Research Council Canada, Ottawa, ON, Canada; 2. Glacialis Ice Consulting, Calgary, AB, Canada; 3. TechnipFMC, St. John's, NL, Canada

Ocean Space Utilization

5-7-1 Environmental Assessment for Marine Renewable Energy

Thursday June 21 Room: **Colonia** | 08:30 – 10:00

Session Chair: Daisuke Kitazawa, Institute of Industrial Science, The University of Tokyo, Japan

Investigation of Monitoring Fish using Underwater Fish-Eye Camera at the Test Site of Marine Renewable Energy OMAE2018-77478

Takero Yoshida¹ Daisuke Kitazawa¹ Yoichi Mizukami² Qiaochu Chen³ Akito Mochizuki³
1. Institute of Industrial Science, The University of Tokyo, Kashiwa, Japan;
2. Institute of Industrial Science, The University of Tokyo, Chiba, Japan;
3. The University of Tokyo, Kashiwa, Japan

AMBEMAR-DSS: a Decision Support System for the Environmental Impact Assessment of Marine Renewable Energies OMAE2018-78002

Xabier Guinda¹ Araceli Puente¹ José A. Juanes¹ Francisco Royano¹ Felipe Fernández¹ Marco A. Vega¹ Andrés García¹ Javier García¹ Germán Aragón¹ Ana J. Abascal¹ César Otero² Cristina Manchado² Valentín Gomez-Jauregui² Joaquín López² Agustín Monteoliva³
1. Environmental Hydraulics Institute, IH Cantabria, Santander, Spain;
2. Universidad de Cantabria, Santander, Spain; 3. Ecohydros, S.L., Maliaño, Spain

Project AZUL: How an Assimilative Ocean Model Contributes to Oil Industry Activities OMAE2018-78703

Luiz Paulo Assad¹ Daiane G Faller² Gabriel de Carvalho³ Luiz Landau² Mauricio R Fragoso³
1. Federal University of Rio de Janeiro, Rio de Janeiro, RJ, Brazil;
2. COPPE/UFRJ, Rio de Janeiro, RJ, Brazil; 3. Prooceano, Rio de Janeiro, RJ, Brazil

Ocean Engineering

6-1-2 Powering

Thursday June 21 Room: **Burdeos** | 08:30 – 10:00

Session Chair: Sanne van Essen, MARIN, Netherlands

The Evaluation Method of the Hydrodynamic Frictional Resistance for the Painted Rough Surface OMAE2018-77693

Tokihiko Katsui¹ Hisao Tanaka²
1. Kobe University, Kobe, Japan; 2. Japan Marine United Corporation, Tsu City, Japan

Numerical Simulations of Ship Bow and Shoulder Wave Breaking in Different Advancing Speeds OMAE2018-78375

Zhen Ren, Jianhua Wang, Decheng Wan
Shanghai Jiao Tong University, Shanghai, China

Kriging-based Surrogate Model Combined with Weighted Expected Improvement for Ship Hull Form Optimization OMAE2018-78388

Xinwang Liu, Decheng Wan, Gang Chen
Shanghai Jiao Tong University, Shanghai, China

Hydrodynamic Modelling and Performance Evaluation of Cycling Varying Pitch Propeller in Non-Uniform Wake Field using Open-Water RANS CFD Simulations OMAE2018-78041

Uffe Sjølund Freiberg¹ Torben Ole Andersen² Jens Ring Nielsen¹
1. MAN Diesel & Turbo, Frederikshavn, Denmark; 2. Aalborg University, Aalborg, Denmark

Ocean Engineering

6-8-4 Fluid-Structure, Multi-Body and Wave-Body Interaction IV

Thursday June 21

Room: **Marsella** | 08:30 – 10:00

Session Chair: Kaijia Han, DNV GL, Norway

Session Co-Chair: Torgeir Kirkhorn Vada, DNV GL, Norway

Numerical and experimental studies on Ship Motions Induced by Passing Ships OMAE2018-78382

Francisco Pedro¹ Joao Santos² Liliana Pinheiro¹ Conceição Fortes¹ Miguel Hinostraza²
1. LNEC, Lisbon, Portugal; 2. CENTEC, Lisbon, Portugal

Numerical Study on Hydrodynamic Interaction between Two Parallel Ships Advancing in Waves based on Rankine Source in Frequency Domain OMAE2018-78516

CB Yao, Yongpeng Ou, Qing Ye, Wei Wang
Naval University of Engineering, Wuhan, China

Vortex Shedding from Hulls in Close Proximity with Relative Motion OMAE2018-77151

Ian A Milne¹ J.M.R. Graham²

1. The University of Western Australia, Perth, WA, Australia; 2. Imperial College, London, United Kingdom

New Insight on the Effects of Reynolds Number in Vortex Induced Vibration OMAE2018-77699

Jian Gu¹ Antonio Carlos Fernandes² Joel S. Sales Junior³

1. Federal University of Rio de Janeiro, Rio de Janeiro, RJ, Brazil;
2. UFRJ, Rio de Janeiro, RJ, Brazil; 3. Laboratory of Waves and Current - LOC - Universidade Federal do Rio de Janeiro, Rio de Janeiro, RJ, Brazil

CFD and FSI

8-2-2 Free Surface Modeling

Thursday June 21

Room: **Stuttgart** | 08:30 – 10:00

Session Chair: Hans Bihs, NTNU Trondheim, Norway

Session Co-Chair: Tim Bunnik, MARIN, Netherlands

Adaptive Grid Refinement for Two-phase Offshore Applications OMAE2018-77309

Peter van der Plas¹ Arthur Veldman¹ Henk Seubers¹ Joop Helder² Ka-Wing Lam²
1. University of Groningen, Groningen, Netherlands; 2. MARIN, Wageningen, Netherlands

Generation of Regular and Irregular Waves in Navier-Stokes CFD Solvers by Matching with the Nonlinear Potential Wave Solution at the Boundaries OMAE2018-78077

Youngmyung Choi¹ Benjamin Bouscasse¹ Sopheak Seng²

Guillaume Ducrozet³ Lionel Gentaz¹ Pierre Ferrant³
1. Ecole Centrale de Nantes, Nantes, France; 2. Bureau Veritas, Neuilly sur seine, France;
3. École Centrale de Nantes, LHEEA Lab. (ECN/CNRS), Nantes, France

Efficient Wave Modeling using Non-hydrostatic Pressure Distribution and Free Surface Tracking on Fixed Grids OMAE2018-78158

Hans Bihs¹ Arun Kamath¹ Ankit Aggarwal¹ Csaba Pakozdi²

1. Norwegian University of Science and Technology, Trondheim, Norway; 2. SINTEF Ocean, Trondheim, Norway

Propagation of Steep and Breaking Short-crested Waves – a Comparison of CFD Codes OMAE2018-78288

Øystein Lande, Thomas B. Johannessen
DNV GL, Høvik, Norway

CFD and FSI

8-4-2 VIV Physics II

Thursday June 21

Room: **Dresden** | 08:30 – 10:00

Session Chair: Muk Chen Ong, University of Stavanger, Norway

Session Co-Chair: Jie Wu, SINTEF Ocean, Norway

Numerical Study of the Fluid-structure Interaction in the Wake Behind a D-shaped Cylinder with a Rear Cavity of Flexible Plates OMAE2018-77644

José I. Jiménez-González, Carlos García-Baena, Cándido

Gutiérrez-Montes, Carlos Martínez-Bazán
Universidad de Jaén, Jaén, Spain

Influence of Stiffness Ratio on Vortex-induced Vibration of Cylinders with Low Aspect Ratio OMAE2018-77665

Dennis M. Gambarine¹ André L. C. Fajarra² Andre M. Kogishi³

Rodolfo T. Gonçalves⁴ Luiz E. B. Minioli²

1. Technomar Engenharia Oceânica, São Paulo, SP, Brazil; 2. Federal University of Santa Catarina, Joinville, SC, Brazil; 3. IPT - Institute for Technological Research, São Paulo, SP, Brazil; 4. The University of Tokyo, Kashiwa-shi, Japan

Steady and Unsteady Drag Evaluation of Different Shapes of Slender Drift Anchors with a Lattice Boltzmann Approach OMAE2018-77837

Benedicte Dommergues¹ Bruno Sainte-Rose¹ Zaki Abiza²

1. The Ocean Cleanup, Delft, Netherlands; 2. XFlow - Dassault Systèmes, Madrid, Spain

Effect of Secondary Motion on Hydrodynamics of a Cylinder Oscillating in Still Fluid OMAE2018-78443

Efstathios Konstantinidis¹ Laszlo Baranyi²

1. University of Western Macedonia, Kozani, Greece;
2. University of Miskolc, Miskolc-Egyetemvaros, Hungary

Investigation of Effect of Twisted Surface on Suppression of Vortex-induced Motion of a Square Column OMAE2018-77107

Chih-Hua Wu, Chang-Wei Kang, Teck-Bin Arthur Lim, Shengwei Ma

Institute of High Performance Computing, A*STAR, Singapore, Singapore

Ocean Renewable Energy

9-4-4 Site Selection, Hybrid Devices and Farms

Thursday June 21

Room: **Estrasburgo** | 08:30 – 10:00

Session Chair: Lance Manuel, University of Texas at Austin, USA

Session Co-Chair: Ryan Coe, Sandia National Laboratories, USA

Estimation of Technical Wave Energy Potential in Exclusive Economic Zone of India OMAE2018-77279

Nagababu Garlapati¹ Ravi Patel¹ Seemant Moideenkunju² Abhinaya Srinivas Bhasuru¹

Surendra Singh Kachhwaha¹ V V Arunkumar Surisetty² Suchandra Aich Bhowmick²

1. Pandit Deendayal Petroleum University, Gandhinagar, India; 2. Indian Space Research Organisation, Ahmedabad, India

Wave Energy Extraction by the End of the Century: Impact of the North Atlantic Oscillation OMAE2018-78107

Jelena Janjic¹ Sarah Gallagher² Emily Gleeson² Frederic Dias¹

1. University College Dublin, Dublin, Ireland; 2. Met Éireann, Dublin, Ireland

Wave Farms and Coastal Morphodynamics OMAE2018-77895

Javier Abanades¹ Gregorio Iglesias²

1. TYPSA, Valencia, United Kingdom; 2. Plymouth University, Plymouth, United Kingdom

Offshore Geotechnics

10-6-1 Spudcans and Shallow Foundations

Thursday June 21

Room: **Londres** | 08:30 – 10:00

Session Chair: Xiaowei Feng, University of Western Australia, Australia

Anchor Sharing in Sands: Centrifuge Modelling and Soil Element Testing to Characterise Multi-directional Loadings OMAE2018-77419

Manuel Herduin¹ Christophe Gaudin¹ Lars Johanning²

1. The University of Western Australia, Perth, WA, Australia; 2. University of Exeter, Penryn, United Kingdom

Effect of Underlying Sand Layer on Undrained Capacity of Spudcan Foundations in Soft Clay under Combined Loading OMAE2018-78198

Yifa Wang¹ Mark J Cassidy² Britta Bienen¹

1. The University of Western Australia, Perth, WA, Australia; 2. Centre for Offshore Foundation Systems/The University of Western Australia, Crawley, WA, Australia

Response Study of Jacket Piles Induced by Spudcan Penetration

OMA2018-78337

Shuzhao Li¹ Zhongchang Wang¹ Xu Jia¹ Linlin He²

1. CNOOC Research Institute, Beijing, China; 2. Chongqing Jiaotong University, Chongqing, China

Study on ALE Method for Simulating Spudcan Penetration near Piles OMAE2018-78493

Jiayu Wang¹ Run Liu¹ Chao Liang¹ Hui Xiao² Jun Wan²

1. Tianjin University, Tianjin, China; 2. Tianjin Branch of China National Offshore Oil Corporation, Tianjin, China

Petroleum Technology

11-2-1 Drilling Mechanics I

Thursday June 21

Room: **Potsdam** | 08:30 – 10:00

Session Chair: Jorge H B Sampaio Jr, Colorado School of Mines, USA

Similarity Analysis for Downscaling a Full Size Drill String to a Laboratory Scale Test Drilling Rig OMAE2018-77202

Adrian Ambrus, Hans Joakim Skadsem, Rodica G. Mihai

International Research Institute of Stavanger, Stavanger, Norway

Machine Learning Approaches to Anomaly Detection of Top Drive Torque Causing Drill Pipe Failure OMAE2018-77882

Tomoya Inoue¹ Daisuke Sugiyama¹ Takayuki Shimotomi²

1. JAMSTEC, Yokohama, Japan; 2. ASTOM, Wako, Japan

Combining Physics-based and Data-driven Models for Estimation of WOB during Ultra-deep Ocean Drilling OMAE2018-78229

Tatsuya Kaneko¹ Ryota Wada¹ Masahiko Ozaki¹ Tomoya Inoue²

1. The University of Tokyo, Kashiwa, Japan; 2. JAMSTEC, Yokohama, Japan

Calculation of Friction Factors and Downhole Weight on Bit using Analytical Model of Torque and Drag OMAE2018-78694

Zebing Wu, Longlong Guo, Adnane El Mokhtari, Yujie Pan,

Yongyong Wang, Shuai Zhang, Wenjuan Wang, Lantao Lv

Xi'an Shiyou University, Xi'an, China

Petroleum Technology

11-4-1 Integrity of Well Barriers I

Thursday June 21

Room: **Baden Baden** | 08:30 – 10:00

Session Chair: Jan David Ytrehus, SINTEF, Norway

Smart Communicative Cement: on the Move Towards the Future of Zonal Isolation Monitoring OMAE2018-77215

Ricardo Cesar Bezerra de Melo, Ramy Eid

Repsol, Madrid, Spain

Potential Utilization for a Rock-based Geopolymer in Oil Well Cementing OMAE2018-78305

Mahmoud Khalifeh¹ Arild Saasen¹ Helge Hodne¹ Hem Bahadur Motra²

1. University of Stavanger, Stavanger, Norway;

2. Christian-Albrechts-University of Kiel, Kiel, Germany

Laboratory Set-up for Determination of Cement Sheath Integrity during Pressure Cycling OMAE2018-78696

Ragnhild Skorpa, Thomas Øia, Ali Taghipour, Torbjorn Vralstad

SINTEF, Trondheim, Norway

Fluid-Fluid Displacement for Primary Cementing in Deviated Washout Sections OMAE2018-78707

Bjørnar Lund¹ Jan David Ytrehus¹ Ali Taghipour¹ Shreyansh Divyankar² Arild Saasen²

1. SINTEF, Trondheim, Norway; 2. University of Stavanger, Stavanger, Norway

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-3-1 Ship Maneuvering and Control I

Thursday June 21

Room: **Bristol** | 08:30 – 10:00

Session Chair: Zao-Jian Zou, Shanghai Jiao Tong University, China

Session Co-Chair: Xueqian Zhou, Harbin Engineering University, China

Parameters Estimation of Nonlinear Manoeuvring Model for Marine Surface Ship based on PMM Tests OMAE2018-78235

Haitong Xu¹ Vahid Hassani² Carlos Guedes Soares¹

1. Instituto Superior Técnico, Universidade de Lisboa, Lisbon, Portugal;

2. NTNU, Trondheim, Norway

Manoeuvring Study of a Container Ship in Shallow

Water Waves OMAE2018-78294

Manases Tello Ruiz¹ Marc Mansuy¹ Guillaume Delefortrie² Marc Vantorre¹

1. Ghent University, Ghent, Belgium; 2. Flanders Hydraulics Research, Antwerp, Belgium

Real-time Parameter Estimation of Nonlinear Vessel Steering Model using Support Vector Machine OMAE2018-78234

Haitong Xu¹ Vahid Hassani² Miguel Hinojosa³ Carlos Guedes Soares⁴

1. Instituto Superior Técnico, Universidade de Lisboa, Lisbon, Portugal;

2. NTNU, Trondheim, Norway; 3. CENTEC, Lisbon, Portugal;

4. Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

Direct Simulations of Ship Turning Circle Maneuver in Waves using RANS-Overset Method OMAE2018-78376

Jianhua Wang, Decheng Wan

Shanghai Jiao Tong University, Shanghai, China

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-9-1 Offshore Floating Structures

Thursday June 21

Room: **Oxford** | 08:30 – 10:00

Session Chair: João Mendonca Santos, Principle Power Inc, Portugal

Session Co-Chair: Manuel Laranjinha, Wood Group, Norway

An Optimization Method for the Concept Design of Semi-Submersible Offshore Accommodation Units OMAE2018-78487

Thiago S. Hallak¹ Manuel Ventura² Carlos Guedes Soares³

1. CENTEC (IST), Lisboa, Portugal;
2. Instituto Superior Técnico (IST), Lisboa, Portugal;
3. Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

Structural Configuration Selection and Optimization of 7th Generation Semi-Submersible Drilling Unit OMAE2018-78688

De-Jiang Li¹ Qiang Fu¹ Zhi-Fu Du¹ Yuan Xiao¹ Rong-Gui Han¹ Hai-Hong Sun²

1. CIMC Yantai Raffles, Yantai, China;
2. American Bureau of Shipping, Houston, TX, USA

Model Test with a Vertical Pipe to Elevate Cold Sea Water OMAE2018-77927

Caio C. O. Trigo, Celso K. Morooka

University of Campinas/Center for Petroleum Studies, Campinas, SP, Brazil

Experimental Investigations of Hydroelastic Effects on Loads during Flat Water Entry OMAE2018-78692

Ould El Moctar, Simon Toedter, Jens Neugebauer, Thomas Schellin

University of Duisburg-Essen, Duisburg, Germany

REFRESHMENT BREAK

10:00 – 10:30

Location: **Venecia / Milán / Roma**

CONCURRENT SESSIONS

10:30 – 12:00

Offshore Technology

1-3-3 Platform/Ship Motions

Thursday June 21

Room: **Bonn** | 10:30 – 12:00

Session Chair: Zhenjia (Jerry) Huang, Exxonmobil Upstream Research Company, USA

Session Co-Chair: Wenhua Zhao, University of Western Australia, Australia

Float-over Installation Analysis of Semi-Submersible Production Platform Topside OMAE2018-77347

Chen Gang, Zhang Huan, Wang Yuhuan, Wang Chao, Zhang Wei, Yin Yan

Shanghai Waigaoqiao Shipbuilding Co., Ltd., Shanghai, China

Seakeeping Behavior of an Innovative, Twin-Hull LNG-FPSO Design during Side by Side Offloading Operations: a Numerical and Experimental Investigation OMAE2018-78030

Georgios Gkikas

SBM Offshore, Schiedam, Netherlands

Reliable Estimation of Low-Frequency Viscous Damping for a Turret-Moored FLNG in Current OMAE2018-78711

Zhenjia (Jerry) Huang¹ Sam Ryu² Donghwan Lee³ Charles Hughes²

1. Exxonmobil Upstream Research Company, Spring, TX, USA;
2. Esso Petroleum Korea, Ltd.;
3. ExxonMobil, Spring, TX, USA

Hydraulic Analytical Model of the BOP Control System to Estimate Related Response Times OMAE2018-78274

José Luis Quispe¹ Segen Estefen¹ Nilo de Moura Jorge² Marcelo Igor Lourenço Souza²

1. COPPE/UF RJ, Rio de Janeiro, RJ, Brazil;
2. Universidade Federal do Rio de Janeiro, Rio de Janeiro, RJ, Brazil

Structures, Safety and Reliability

2-10-2 Collision and Crashworthiness II

Thursday June 21

Room: **Dusseldorf** | 10:30 – 12:00

Session Chair: Zhiqiang Hu, Newcastle University, Newcastle upon Tyne, United Kingdom

Session Co-Chair: Sören Ehlers, Technical University of Hamburg, Hamburg, Germany

Numerical Simulation of a Pre-swirl Stator Collision with Sea Ice Incorporating Various Material Model based on Experimental Study OMAE2018-77239

Jae Woo Ahn, Joong Hyo Choi, Sung-Gun Park, Sung-Kon Han

Daewoo Shipbuilding & Marine Engineering Co. Ltd., Seoul, Korea

Collisions Between Ship and Platforms in Brazilian Waters OMAE2018-78199

Diogo Do Amaral M. Amante¹ Segen Estefen²

1. Petrobras, Rio de Janeiro, RJ, Brazil;
2. COPPE/UF RJ, Rio de Janeiro, RJ, Brazil

An Evaluation of Submarine Collisions to a TLP OMAE2018-78364

Martin Storheim¹ Cato Dørum²

1. Moss Maritime AS, Lysaker, Norway;
2. Statens vegvesen, Hamar, Norway

Kinematic Formulation of Mooring Platform during Collisions based on Multi-body Dynamic Theory OMAE2018-78634

Qiuwan Duan, Yang Yang

Dalian University of Technology, Dalian, China

Pipelines, Risers, and Subsea Systems

4-2-2 Rigid Risers – Analysis

Thursday June 21

Room: **Frankfurt** | 10:30 – 12:00

Session Chair: Knut Vedeld, DNV GL A/S, Norway

Session Co-Chair: Olav Fyrileiv, DNVGL, Norway

Dynamic Characteristics of Deep-Water Risers Carrying Multiphase Flows OMAE2018-77381

Bowen Ma, Narakorn Srinil

Newcastle University, Newcastle upon Tyne, United Kingdom

A Steel Lazy Wave Riser for Turret vs. Spread-Moored FPSO in Extreme and Wave-induced Fatigue Conditions OMAE2018-78736

David Szczepanski¹ Cheslav Balash¹ Marius Martens²

1. Edith Cowan University, Perth, WA, Australia;
2. INTECSEA, Perth, WA, Australia

Fatigue Assessment of Dented Rigid Risers OMAE2018-78173

Elvis J Osorio Santander¹ Carlos Magluta² Ney Roitman² Bianca Pinheiro²

1. Universidad Federal de Rio de Janeiro, Rio de Janeiro, RJ, Brazil;
2. Coppe/Universidade Federal do Rio de Janeiro, Rio de Janeiro, RJ, Brazil

Pipelines, Risers, and Subsea Systems

4-5-1 Flow Assurance I

Thursday June 21

Room: **Berlin** | 10:30 – 12:00

Session Chair: Doug Swanek, C-FER Technologies, Canada

Session Co-Chair: Duane DeGeer, INTECSEA, USA

Wax Deposition Prediction and Control in Waxy Crude Oil Tieback Flowlines for South China Sea Deepwater Oil Development OMAE2018-77129

Xichong Yu¹ Chunsheng Wang¹ Qingping Li¹ Yan Li¹ Xiaosong Zhu¹

Qing Wang¹ Cheng Bing¹ Yaqi Qing²

1. CNOOC Research Institute, Beijing, China; 2. China University of Petroleum (East China), Beijing, China

Hydrodynamics on Circular Cylinder Close to a Wall: Effects from Wall Boundary Layers OMAE2018-77518

Feifei Tong¹ Liang Cheng² Hongwei An¹ Terry Griffiths¹

1. The University of Western Australia, Crawley, WA, Australia;

2. The University of Western Australia, Perth, WA, Australia

Optimization of Pipe Insulation Volume for a Subsea Production System OMAE2018-77681

Cheng Hong¹ Yuxi Wang¹ Jiankun Yang¹ Segen Estefen² Marcelo Igor Lourenço Souza¹

1. Federal University of Rio de Janeiro, Rio de Janeiro, RJ, Brazil; 2. COPPE/UFRJ, Rio de Janeiro, RJ, Brazil

A Pragmatic Approach to Sizing and Selection of Pipeline Systems in Concept Design of Deepwater Gas Development OMAE2018-78187

Akachidike Kanu, Corina Ruiz Briceño

Repsol, Madrid, Spain

Ocean Space Utilization

5-9-1 Coastal Zone Utilization and Management

Thursday June 21

Room: **Colonia** | 10:30 – 12:00

Session Chair: Shigeru Tabeta, The University of Tokyo, Japan

A Preliminary Study on Site Selection for Tidal Current Power Plants in Seto Inland Sea OMAE2018-77339

Koki Kikukawa¹ Shigeru Tabeta²

1. The University of Tokyo, Tokyo, Japan; 2. The University of Tokyo, Kashiwa, Japan

Survey and Analysis on Safety of Ship Mooring Operations in Japanese Ports Facing Open Seas OMAE2018-77387

Kenji Sasa¹ Masao Mitsui² Masahiko Tamura²

1. Kobe University, Kobe, Japan; 2. Sonic Corporation Ltd., Tachikawa, Japan

Study about Maintenance and Management on an Artificial Beach in Okinawa-honto OMAE2018-78282

Yoshiyuki Tajima¹ Akio Kuroyanagi² Ryo Sugahara²

1. Japan Port Consultants, Ltd., Okinawa, Japan; 2. Nihon University, Funabashi-shi, Japan

A Study on Laws and Regulations of Floating Residence and Water Utilization and Management in the United States OMAE2018-77835

Daisuke Dobashi¹ Akio Kuroyanagi² Ryo Sugahara²

1. Nihon University, Chiba, Japan; 2. Nihon University, Funabashi-shi, Japan

Ocean Engineering

6-1-4 Seakeeping – Motions and Added Resistance in Waves

Thursday June 21

Room: **Burdeos** | 10:30 – 12:00

Session Chair: Jeffrey Falzarano, Texas A&M University, USA

Instantaneous Center of Rotation in Pitch Response of a FPSO Submitted to Head Waves OMAE2018-78098

Daniel de Oliveira Costa¹ Antonio Carlos Fernandes² Joel S. Sales Junior¹ Peyman Asgari²

1. Laboratory of Waves and Current - LOC - Universidade Federal do Rio de Janeiro, Rio de Janeiro, RJ, Brazil; 2. Universidade Federal do Rio de Janeiro, Rio de Janeiro, RJ, Brazil

The Routing Optimization of Transoceanic Voyages by Incorporating Particle Swarm Optimization Algorithm into Weather Routing System OMAE2018-78280

Yu-Hsien Lin

National Cheng Kung University, Tainan, Taiwan

Prediction of Hydrodynamic Coefficients of Coupled Heave and Pitch Motions of Heeled Planing Boats by Asymmetric 2D+T Theory OMAE2018-78327

Sasan Tavakoli¹ Abbas Dashtimanesh² Prasanta K Sahoo³

1. Amirkabir University of Technology, Tehran, Iran; 2. Persian Gulf University, Bushehr, Iran; 3. Florida Institute of Technology, Melbourne, FL, USA

CFD Study of Added Resistance and Motion of DTC in Short and Long Waves OMAE2018-78380

Cong Liu, Gang Chen, Decheng Wan

Shanghai Jiao Tong University, Shanghai, China

Ocean Engineering

6-8-5 Fluid-Structure, Multi-Body and Wave-Body Interaction V

Thursday June 21

Room: **Marsella** | 10:30 – 12:00

Session Chair: Pierre Ferrant, École Centrale de Nantes, LHEEA Lab. (ECN/CNRS), France

Numerical Prediction of Bow-flared Slamming on ULCS in Oblique Waves OMAE2018-77782

Hang Xie, Huilong Ren, Hui Li, Kaidong Tao

Harbin Engineering University, Harbin, China

Characteristics of BRAGG Reflection of Water Waves by Multiple Vertical Flexible Membranes OMAE2018-77066

Wei-Wei Ding¹ Zao-Jian Zou¹ Jing-Ping Wu²

1. Shanghai Jiao Tong University, Shanghai, China;

2. Wuhan University of Technology, Wuhan, China

Use of Clement's Odes for the Speedup of Computation of the Green Function and its Derivatives for Floating or Submerged Bodies in Deep Water OMAE2018-78295

Chunmei Xie¹ Aurélien Babarit² Francois Rongère¹ Alain Clément¹

1. Ecole Centrale de Nantes, Nantes, France;

2. LHEEA - Ecole Centrale de Nantes, Nantes, France

Polar and Arctic Sciences and Technology

7-9-1 SKT Project I

Thursday June 21

Room: **Munich** | 10:30 – 12:00

Session Chair: Gesa Ziemer, HSVA, Germany

Session Co-Chair: Walter Kuehnlein, sea2ice, Germany

Introduction to Station Keeping Project OMAE2018-78786

Pavel Liferov

Statoil ASA, Trondheim, Norway

Station-keeping Trials in Ice: Project Overview OMAE2018-78588

Pavel Liferov¹ Tom McKeever² Francesco Scibilia³ Sigurd Teigen³

Andreas Kjoel⁴ Erik Almkvist⁴ Joakim K. Lindvall⁵

1. Statoil ASA, Trondheim, Norway; 2. Statoil Canada Ltd, St. John's, NL, Canada; 3. Statoil ASA, Bergen, Norway; 4. Viking Ice Consultancy, Kristiansand, Norway; 5. Viking Ice Consultancy, Norrköping, Sweden

Station-keeping Trials in Ice: Test Scenarios OMAE2018-78587

Pavel Liferov¹ Nicolas Serre² Sofien Kerkeni³ Robert Bridges⁴ Fengwei Guo⁵

1. Statoil ASA, Trondheim, Norway; 2. Multiconsult, Tromsø, Norway; 3. D-ICE Engineering, Nantes, France; 4. Total S.A., Paris, France; 5. DNV GL, Høvik, Norway

Station Keeping Trials in Ice: Overview of Ice Management

Support OMAE2018-78583

Michael Neville¹ Erik Almkvist² Francesco Scibilia³ Joakim K. Lindvall⁴ Pavel Liferov⁵

1. Aker Arctic Canada Inc., St. John's, NL, Canada; 2. Viking Ice Consultancy, Kristiansand, Norway; 3. Statoil ASA, Trondheim, Norway; 4. Viking Ice Consultancy, Norrköping, Sweden

CFD and FSI

8-2-3 Particle-Based Free Surface Modeling

Thursday June 21

Room: **Stuttgart** | 10:30 – 12:00

Session Chair: Csaba Pakozdi, SINTEF Ocean, Norway

Session Co-Chair: Hans Bihs, NTNU Trondheim, Norway

CFD-Dem Simulation of Particulate Flow in Dam Break OMAE2018-77763

Min Il Kim, Hyun Sik Yoon

Pusan National University, Busan, Korea

GPU based Acceleration of MPS Method for Three-dimensional

Dam-Break Flows OMAE2018-78369

Xiang Chen, Decheng Wan

Shanghai Jiao Tong University, Shanghai, China

Numerical Simulations of Three-Layer-Liquid Sloshing by MPS

Multiphase Method OMAE2018-78387

Xiao Wen, Decheng Wan

Shanghai Jiao Tong University, Shanghai, China

Effect of the Free Surface on the Drag Forces on a Flat Plate Translating

Normal to the Flow OMAE2018-77646

Sukruth Satheesh¹ Clément Haeck² Francisco Huera-Huarte¹

1. Universitat Rovira i Virgil, Tarragona, Spain; 2. ENS Paris Saclay, Paris, France

CFD and FSI

8-4-3 VIV Suppression I

Thursday June 21

Room: **Dresden** | 10:30 – 12:00

Session Chair: Jungao Wang, University of Stavanger, Norway

Session Co-Chair: Michael Tognarelli, BP America Production Co., USA

Vim-Suppression for a FSR with a Co-Centric Porous Sheath around the Buoyancy Can: Effects of Mesh Orientation and Diameter Ratio OMAE2018-77251

Jessica Crosswell¹ Cheslav Balash²

1. University of Tasmania, Launceston, TAS, Australia; 2. Edith Cowan University, Perth, WA, Australia

Experimental Investigation on the Hydrodynamic Responses and Coefficients of Straked Flexible Pipe in Oscillatory Flow OMAE2018-78010

Haojie Ren¹ Shixiao Fu¹ Mengmeng Zhang¹ Jingyun Cheng² Peimin Cao²

1. Shanghai Jiao Tong University, Shanghai, China; 2. SBM Offshore, Houston, TX, USA

Full Scale Reynolds Number VIV Testing of Tri-Helically Grooved Drill Riser Buoyancy Module OMAE2018-78605

Collin Gaskill¹ Jie Wu² Decao Yin²

1. Trelleborg Offshore, Houston, TX, USA; 2. SINTEF Ocean, Trondheim, Norway

Simulations on Hydrodynamic Coefficients of Stationary

Cactus-Shaped Cylinders at a Low Reynolds Number OMAE2018-78472

Jialu Wang, Chen Shi, Yang Liu, Xingxian Bao

China University of Petroleum (East China), Qingdao, China

Suppression of Vortex Shedding with Rotating Wake-Control Cylinders: Numerical Investigation at a Moderate Reynolds Number OMAE2018-78316

Gustavo R. S. Assi¹ Reinaldo Orselli¹ Mariana Silva-Ortega²

1. University of Sao Paulo, Sao Paulo, SP, Brazil;

2. Universidad Veracruzana, Xalapa Enríquez, VER, Mexico

Ocean Renewable Energy

9-3-3 Model Development, Verification and Validation

Thursday June 21

Room: **Estrasburgo** | 10:30 – 12:00

Session Chair: Senu Sirmivas, NREL, USA

Session Co-Chair: Chen-Chou Lin, National Taiwan Ocean University, Taiwan

Numerical Model Development and Validation for the WECCOMP Control Competition OMAE2018-78094

Nathan Tom¹ Kelley Ruehl² Francesco Ferri³

1. National Renewable Energy Laboratory (NREL), Golden, CO, USA;

2. Sandia National Laboratories, Albuquerque, NM, USA;

3. Dept. of Civil Engineering, Aalborg University, Aalborg, Denmark

The Impact of a High-Fidelity Wave-to-Wire Model in Control Parameter Optimisation and Power Production

Assessment OMAE2018-77501

Markel Penalba¹ John V. Ringwood²

1. Centre for Ocean Energy Research, Maynooth University, Maynooth, Ireland;

2. Maynooth University, Maynooth, Ireland

Numerical Analysis on Hydraulic PTO for Wave Energy Converter and Power Smoothing Methods OMAE2018-78176

Yi-Hsiang Yu, Nathan Tom, Dale Jenne

National Renewable Energy Laboratory (NREL), Golden, CO, USA

Non-Linear Simulation of a Wave Energy Converter with Multiple Degrees of Freedom using a Harmonic Balance Method OMAE2018-78067

Riccardo Novo¹ Alexis Merigaud² Giovanni Bracco¹ Sergej A. Sirigu¹
Giuliana Mattiazzo¹ John V. Ringwood³
1. Politecnico di Torino, Torino, Italy; 2. Centre for Ocean Energy Research, Maynooth University, Maynooth, Ireland; 3. Maynooth University, Maynooth, Ireland

Ocean Renewable Energy

9-6-1 Thermal, Hybrid and Others: Analysis and Design

Thursday June 21 Room: **Paris** | 10:30 – 12:00

Session Chair: Imanol Touzón, Tecnalia R&I / University of the Basque Country EHU-UPV, Spain
Session Co-Chair: Marc Cahay, Technip, France

Effects of Misaligned Wave and Wind Action on the Response of the Combined Concept WindWEC OMAE2018-77078

Madjid Karimirad¹ Constantine Michailides²
1. Queen's University Belfast, Belfast, United Kingdom;
2. Cyprus University of Technology, Limassol, Cyprus

A Fourier Approximation Method for the Multi-Pump Multi-Piston Power Take-off System OMAE2018-77498

Yanji Wei, J.J. Barradas-Berglind, M. Zaki Almuzakki, Marijn van Rooij, Ruoqi Wang, Bayu Jayawardhana, Antonis I. Vakis
University of Groningen, Groningen, Netherlands

Performance Characteristics of Vertical-Axis Off-Shore Savonius Wind and Savonius Hydrokinetic Turbines OMAE2018-78497

Parag K. Talukdar¹ Vinayak Kulkarni² Ujjwal K. Saha²
1. Indian Institute of Technology Guwahati, Assam, India;
2. Indian Institute of Technology Guwahati, Guwahati, India

Performance Simulation of Solar-Ocean Thermal Energy Conversion OMAE2018-78551

Juan Yue¹ Dashu Li¹ Zhichuan Li¹ Gang Xiao² Li Zhang¹ Yonghu Wu² Ting Yu²
1. China National Offshore Oil Corp. Research Institute, Beijing, China;
2. CNOOC Research Institute, Beijing, China

Offshore Geotechnics

10-7-1 Pipelines

Thursday June 21 Room: **Londres** | 10:30 – 12:00

Session Chair: Yuzhu Li, University of Stavanger, Norway

Two-Phase Model for Simulating Current-Induced Scour Beneath Subsea Pipelines at Different Initial Elevations OMAE2018-77245

Jun Y. Lee¹ Jasmin B.T. McInerney² Fauzi A. Hardjanto¹ Shuhong Chai¹
Remo Cossu³ Zhi Q. Leong¹ Alexander L. Forrest²
1. University of Tasmania, Newnham, TAS, Australia; 2. University of California - Davis, Davis, CA, USA; 3. The University of Queensland, Brisbane, QLD, Australia

Simulating the Response of Untrenched Flowlines due to Iceberg-Flowline-Soil Interaction OMAE2018-78128

Kenton Pike, Andrew Blundon
TechnipFMC, St. John's, NL, Canada

Benchmark of Erosion Criteria in a High-Rate Gas Condensate Field OMAE2018-77477

Susana Gomez-Alvarez¹ Fernando Garcia Ruiz² Daniel Merino-Garcia¹
1. Repsol Technology Centre, Móstoles, Spain;
2. Repsol Sinopec Brazil, Rio de Janeiro, RJ, Brazil

Evaluation of Existing Semi-Empirical Models of Scour at a Submarine System OMAE2018-78157

Valeria Souza Rego, Claudia M. P. M. Santos
Petroleo Brasileiro SA - Petrobras, Rio de Janeiro, RJ, Brazil

Petroleum Technology

11-1-1 Multiphase Flow for Offshore Production

Thursday June 21 Room: **Potsdam** | 10:30 – 12:00

Session Chair: Stephen Butt, Memorial University of Newfoundland, Canada
Session Co-Chair: Mohammad Aziz Rahman, Texas A&M University at Qatar, Qatar

Multiphase Flow in a Subsea Hilly Terrain OMAE2018-77190

Mohamed Odan¹ Mohammad Aziz Rahman² Amer Aborig¹
Yan Zhang¹ Syed Imtiaz¹ Faraj Ben Rajeb¹
1. Memorial University of Newfoundland, St. John's, NL, Canada; 2. Texas A&M University at Qatar, Doha, Qatar

Carbon Dioxide and Water Mixture in Pipeline Flow Systems OMAE2018-77722

Faraj Ben Rajeb¹ Mohamed Odan¹ Syed Imtiaz¹ Yan Zhang¹
Amer Aborig¹ Mohammad Aziz Rahman²
1. Memorial University of Newfoundland, St. John's, NL, Canada; 2. Texas A&M University at Qatar, Doha, Qatar

CFD and Experimental Studies of Yield Power Law Fluids in Turbulent Pipe Flow OMAE2018-77996

Abdalsalam Ihmoudah¹ Mohammad Aziz Rahman² Stephen Butt¹
1. Memorial University of Newfoundland, St. John's, NL, Canada; 2. Texas A&M University at Qatar, Doha, Qatar

Comparison of Oil Recovery and Carbonate Rock's Properties Alterations by CO₂ Miscible Flooding OMAE2018-78723

Jinju Han, Youngsoo Lee, Sunlee Han, Youngjin Seo, Juhyun Kim
Chonbuk National University, Jeonju, Korea

Petroleum Technology

11-4-2 Integrity of Well Barriers II

Thursday June 21 Room: **Baden Baden** | 10:30 – 12:00

Session Chair: Jan David Ytrehus, SINTEF, Norway

Numerical Integration of the AUSMV Scheme with a Dynamic Wellbore Temperature Model OMAE2018-77493

John Emeka Udegbumam, Kjell Kåre Fjelde, Dan Sui
University of Stavanger, Stavanger, Norway

On Technologies for Shale Barrier Evaluation in the North Sea OMAE2018-78309

Geir-Ove Strand
NTNU, Trondheim, Norway

New Revision of DNVGL-RP-E104 Wellhead Fatigue Analysis OMAE2018-78777

Andreas Aardal, Erling Katla, Torfinn Horte
DNV GL, Hovik, Norway

Cement Hydration in the Presence of Nano Magnesium Oxides with Controlled Reactivity OMAE2018-78254

Narjes Jafariefad, Pål Skalle, Mette R. Geiker
Norwegian University of Science and Technology, Trondheim, Norway

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-3-2 Ship Maneuvering and Control II

Thursday June 21

Room: **Bristol** | 10:30 – 12:00

Session Chair: Jasna Prpic-Orsic, Faculty of Engineering, University of Rijeka, Croatia

Session Co-Chair: Lokukaluge Prasad Perera, UiT

The Arctic University of Norway, Norway

A Field Monitoring System for Dynamic Positioning

Floatover Installation OMAE2018-77572

Peng Wang, Xiao Wu, Wenyue Lu, Xinliang Tian, Xin Li

Shanghai Jiao Tong University, Shanghai, China

An Overview of Data Variety Issue in Ship Performance and Navigation Monitoring

OMA2018-77669

Lokukaluge Prasad Perera¹ Brage Mo²

1. UiT The Arctic University of Norway, Tromsø, Norway; 2. SINTEF Ocean, Trondheim, Norway

Hybrid Tool to Prevent Ship Propeller Erosion

OMA2018-78237

T. Llull, A. Mujal-Colilles, M. Castells, X. Gironella,

X. Martínez de Osés, A. Martín, A. Sánchez Arcilla

UPC, Barcelona, Spain

Energy Efficiency of Ship under Real Weather Conditions

OMA2018-78514

Jasna Prpic-Orsic¹ Kenji Sasa² Odd Faltinsen³ Marko Valcic⁴

1. Faculty of Engineering, University of Rijeka, Rijeka, Croatia; 2. Kobe University, Kobe, Japan; 3. Centre of Excellence AMOS, Norwegian University of Science and Technology, Trondheim, Norway; 4. Faculty of Maritime Sciences, University of Rijeka, Rijeka, Croatia

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-9-2 Strength of Offshore Structures and Equipment

Thursday June 21

Room: **Oxford** | 10:30 – 12:00

Session Chair: Celso K. Morooka, University of Campinas/Faculty of Mechanical Engineering/Center for Petroleum Studies, Brazil

Session Co-Chair: Ould El Moctar, University of Duisburg-Essen, Germany

Strength Assessment of Jacket Offshore Wind Turbine Support Structure Accounting for Rupture

OMA2018-77101

Baran Yeter¹ Yordan Garbatov² Carlos Guedes Soares³

1. Centre for Marine Technology and Ocean Engineering (CENTEC), University of Lisbon, Instituto Superior, Lisbon, Portugal; 2. University of Lisbon, Lisboa, Portugal; 3. Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

Drilling String Vibration: Modelling and Simulation

OMA2018-77685

María J. Legaz¹ Sergio Amat² Gustavo E. Henriquez Velez³

1. University of Cádiz, Cádiz, Spain; 2. Polytechnic University of Cartagena, Cartagena, Spain; 3. International University of La Rioja, Logroño, Spain

Code-to-Code Verification of End-Anchored Floating Bridge

OMA2018-77902

Thomas Viuff¹ Xiang Xu² Bernt Leira¹ Ole Øiseth¹

1. Norwegian University of Science and Technology, Trondheim, Norway; 2. Norwegian Public Roads Administration, Leikanger, Rogaland, Norway

Numerical Simulation of the Complex Impact Behavior of Float-Over Deck Installation based on an Efficient Two-Body Heaving Impact Model

OMA2018-78029

Meiyan Zou, Ling Zhu, Mingsheng Chen

Wuhan University of Technology, Wuhan, China

Technical Session Organizers' Lunch

12:00 – 13:30

Location: Buffet Madrid / France-Madrid Gallery / Lyon / Toulouse

CONCURRENT SESSIONS

13:30 – 15:00

Structures, Safety and Reliability

2-6-1 Well Integrity and Reliability Assessment

Thursday June 21

Room: **Dusseldorf** | 13:30 – 15:00

Session Chair: Max Russon, Kongsberg, Norway

Analysis Approach for Estimating Wellhead Fatigue

OMA2018-77214

Kristoffer Hoyem Aronsen¹ Sergey Kuzmichev¹ Guttorm Grytoyr¹

Kathrine Gregersen¹ Finn Kirkemo² Lorents Reinas³

1. Statoil, Fornebu, Norway; 2. Statoil, Tranby, Norway; 3. Statoil, Stavanger, Norway

Instrumented Wellhead Load Relief System for Shallow Water Arctic Conditions: Paper 1 – System Design, Installation and Preliminary Results

OMA2018-78102

Max Russo¹ Scott Benson² Eivind Rasten³ Ward Avery⁴ Michael Ash² Paul LeGrow²

1. Kongsberg Maritime, Houston, TX, USA; 2. Suncor Energy, St. John's, NL, Canada;

3. Subsea Design, Drammen, Norway; 4. Frontier Subsea, Paradise, NL, Canada

The Development of an Enhanced Riser Management System including Dynamic Watch Circles and Dynamic WSOG for Drilling Operations in Harsh and Ultra-Deepwater Environments

OMA2018-78110

Max Russo¹ Martin Poirier² Rohit Srikonda¹ Martin Karlstad³ Kjetil Abelsen³ Curt Kling⁴

1. Kongsberg Maritime, Houston, TX, USA; 2. Total Exploration & Production, Rio de Janeiro, RJ, Brazil; 3. Kongsberg Maritime, Asker, Norway; 4. NOV, Houston, TX, USA

Learnings from Strain Measurements on an In-field Conductor and Wellhead System

OMA2018-78521

Rohit Shankaran¹ Alexander Rimmer¹ Alan Haig²

1. 2H Offshore Engineering Ltd., Woking, United Kingdom; 2. Total E&P UK, Westhill, United Kingdom

Real-time Wellhead Bending Moment Measurement using Motion Reference Unit (MRU) Sensors and Machine Learning

OMA2018-78301

Rohit Srikonda¹ Rune Haakonsen¹ Max Russo¹ Peri Periyasamy²

1. Kongsberg Maritime, Houston, TX, USA; 2. Kongsberg Digital, Houston, TX, USA

Pipelines, Risers, and Subsea Systems

4-2-3 Rigid Risers – VIV and Fatigue

Thursday June 21 Room: **Frankfurt** | 13:30 – 15:00

Session Chair: Vishnu Vijayaraghavan, Aker Solutions Inc., USA

Session Co-Chair: Knut Vedeld, DNV GL A/S, Norway

Finite Element Analysis of Seafloor-SCR Interaction in Touchdown Zone OMAE2018-77250

Zhang Wei, Peng Peng
Tianjin University, Tianjin, China

Strouhal Number for VIV Excitation of Long Slender Structures OMAE2018-77433

Andrew E. Potts, Douglas A. Potts, Hayden Marcollo, Kanishka Jayasinghe
AMOG Consulting, Notting Hill, VIC, Australia

Assessing the Impact of Riser-Soil Interaction Model on the Fatigue Life of Large Diameter SCRs OMAE2018-78713

Rasoul Hejazi¹ Andrew Grime¹ Mark F. Randolph² Mike Efthymiou¹
1. The University of Western Australia, Perth, WA, Australia;
2. The University of Western Australia, Crawley, WA, Australia

Basin Tests and Numerical Simulations of Wake-Induced Oscillations of Inline Risers in Subcritical/Critical Regime OMAE2018-77842

Vincent Levasseur¹ Charles Leca¹ Francois Petrie² Benjamin Rousse²
1. LEMMA, Biot, France; 2. Oceanide, La Seyne sur Mer, France

Pipelines, Risers, and Subsea Systems

4-5-2 Flow Assurance II

Thursday June 21 Room: **Berlin** | 13:30 – 15:00

Session Chair: Doug Swanek, C-FER Technologies, Canada

Session Co-Chair: Chris Timms, C-FER Technologies, Canada

State of the Art Erosion Control Technology OMAE2018-78033

Prasad Kane, Dominic Pliszka
Intecsea UK Ltd (Worleyparsons Group), Woking, United Kingdom

New Flow Assurance System with High Speed Subsea Fiber Optic Monitoring of Pressure and Temperature OMAE2018-78079

John D. Hedengren¹ David V. Brower² J. Conrad Wilson² Geoff High³ Karl Witherow³
1. Brigham Young University, Provo, UT, USA; 2. Astro Technology Inc., Houston, TX, USA;
3. Ocean Flow International, LLC, Houston, TX, USA

Parametric Model of Dead Leg Steady-State Thermal Performance OMAE2018-78407

Arnaud Sanchis¹ Sonny Andersson¹ Atle Jensen²
1. TechnipFMC, Lysaker, Norway; 2. University of Oslo, Oslo, Norway

Ocean Engineering

6-1-5 Seakeeping – Parametric Roll and Error Statistics

Thursday June 21 Room: **Burdeos** | 13:30 – 15:00

Session Organizer: Sanne van Essen, MARIN, Netherlands

Prediction Error Statistics in Deterministic Linear Ship Motion Forecasting OMAE2018-77456

Fabio Fucile¹ Gabriele Bulian¹ Claudio Lugni²
1. Department of Engineering and Architecture - University of Trieste, Trieste, Italy;
2. CNR-INSEAN - Marine Technology Institute, Rome, Italy

Numerical Prediction and Experimental Validation of Slamming Load for Large Container Ship undergoing Parametric Rolling Motion OMAE2018-77631

Yuan Lin, Ning Ma, Deyu Wang, Xie-chong Gu
Shanghai Jiao Tong University, Shanghai, China

Uncertainty Quantification in Numerical Simulations of Parametric Roll OMAE2018-77801

Bulent Duz, Egbert Ypma
Maritime Research Institute in the Netherlands (MARIN), Wageningen, Netherlands

Irregular Frequency Effects in the Calculations of the Drift Forces OMAE2018-78779

Jeffrey Falzarano
Texas A&M University, College Station, TX, USA

Ocean Engineering

6-3-2 Wave Loads

Thursday June 21 Room: **Stuttgart** | 13:30 – 15:00

Session Chair: David Molyneux, Memorial University of Newfoundland, Canada

Session Co-Chair: P Krishnankutty, Indian Institute of Technology Madras, India

Green Water Flow on a Fixed Model Structure in a Large Wave Basin under Random Waves OMAE2018-77184

Wei-Liang Chuang, Kuang-An Chang, Richard Mercier
Texas A&M University, College Station, TX, USA

Experimental Study of Wave Force Distribution on a Monopile Structure OMAE2018-77509

Malene Hovgaard Vested, Stefan Carstensen, Erik Damgaard Christensen
Technical University of Denmark, Kgs Lyngby, Denmark

Experimental Study for the Effect of Appendages on Vortex-Induced Motions of Tension Leg Platform OMAE2018-77329

Chenling Tian¹ Mingyue Liu¹ Shisheng Wang² Xinru Wang¹ Haobo Li¹
1. Shanghai Jiao Tong University, Shanghai, China;
2. CNOOC Research Institute Ltd., Beijing, China

Ocean Engineering

6-3-4 Ship Dynamics

Thursday June 21 Room: **Colonia** | 13:30 – 15:00

Session Chair: David Molyneux, Memorial University of Newfoundland, Canada

Session Co-Chair: P Krishnankutty, Indian Institute of Technology Madras, India

Experimental Study of Ship Response due to Internal Viscous Cargo Motions OMAE2018-77502

Virginie Baudry¹ Jean-Marc Rousset²
1. Centrale Nantes, Nantes, France; 2. Ecole Centrale Nantes, Nantes, France

Experimental and Numerical Evaluation of Manoeuvring Capability of an AHTS using Free-running Tests OMAE2018-77637

Caio Swan de Freitas¹ Vinicius Vileti² Paulo de Tarso T. Esperança³ Sergio H. Sphaier⁴
1. LabOceano/UFRJ, Rio de Janeiro, RJ, Brazil; 2. LabOceano - COPPE - Federal University of Rio de Janeiro, Rio de Janeiro, RJ, Brazil; 3. LabOceano COPPE/Federal University of Rio de Janeiro, Rio de Janeiro, RJ, Brazil; 4. Federal University of Rio de Janeiro, Niteroi, RJ, Brazil

Controller Analysis in Real-time Hybrid Model Testing of an Offshore Floating System OMAE2018-77859

Stefan Vilsen¹ Thomas Sauder² Martin Føre³ Asgeir J. Sørensen²
1. SINTEF Ocean/NTNU AMOS, Trondheim, Norway; 2. Norwegian University of Science and Technology, Trondheim, Norway; 3. SINTEF Ocean, Trondheim, Norway

Experimental Investigation on Resistance Reduction by Means of Air-Bubbling Technique OMAE2018-77980

Enrico Ravina, Sofia Guidomei
University of Genoa, Genoa, Italy

Ocean Engineering

6-14-1 Coastal Engineering I

Thursday June 21 Room: **Marsella** | 13:30 – 15:00
Session Chair: Mohammad-Reza Alam, University of California, Berkeley, USA

Uniaxial Capacities of Sand-Filled Large Cylindrical Structures in Soft Foundation OMAE2018-77204

Zhong Xiao, Zongquan Li, Ying Liu
Tianjin University, Tianjin, China

Numerical Simulation of Wave Transformation over Deep-sea Platform Reef using SPH Method OMAE2018-77325

Xiang Zhang¹ Bing Ren¹ Yongxue Wang¹ Hongjie Wen²
1. Dalian University of Technology, Dalian, China; 2. Tsinghua University, Beijing, China

Large Scale Physical Modelling for a Floating Concrete Caisson in Marine Works OMAE2018-77585

Lucia Meneses¹ Javier Sarmiento¹ Daniel de los Dolores¹ David Blanco¹ Raul Guanache¹
Inigo Losada¹ Maria F. Rodriguez de Segovia² Manuel J. Ruiz² Miguel A. Martin²
Maria J. Conde² Francisco Esteban²
1. Environmental Hydraulics Institute of Cantabria - Universidad de Cantabria, Santander, Spain; 2. FCC Citizen Services, Madrid, Spain

Detection of Plunging Breaking Waves based on Machine Learning OMAE2018-77671

Ying Tu, Zhengshun Cheng, Michael Muskulus
Norwegian University of Science and Technology, Trondheim, Norway

Polar and Arctic Sciences and Technology

7-9-2 SKT Project II

Thursday June 21 Room: **Munich** | 13:30 – 15:00
Session Chair: Pavel Liferov, Statoil ASA, Norway
Session Co-Chair: Walter Kuehnlein, sea2ice, Germany

Station-Keeping Trials in Ice: Numerical Simulations OMAE2018-78552

Nicolas Serre¹ Sofien Kerkeni² Dmitry Sapelnikov¹ Cyrille Akuetevi²
Sergiy Sukhorukov³ Fengwei Guo⁴ Ivan Metrikin⁵ Pavel Liferov⁶
1. Multiconsult, Tromsø, Norway; 2. D-ICE Engineering, Nantes, France;
3. Kværner, Lysaker, Norway; 4. DNV GL, Høvik, Norway;
5. Statoil, Stavanger, Norway; 6. Statoil ASA, Trondheim, Norway

Data Acquisition, Post-Processing, Storage and Visualization OMAE2018-78555

Erik Almkvist¹ Andreas Kjoel¹ Claes Tisel¹ Joakim K. Lindvall²
Claes Ingers³ Anders Hansson⁴ Maxime Dupuy⁵
1. Viking Ice Consultancy, Kristiansand, Norway; 2. Viking Ice Consultancy, Norrköping, Sweden; 3. EIVA, Skanderborg, Denmark; 4. DNV GL, Høvik, Norway; 5. D-ICE Engineering, Nantes, France

Station-Keeping Trials in Ice: Marine Spread OMAE2018-78553

Andreas Kjoel¹ Erik Almkvist¹ Tom McKeever² Pavel Liferov³ Joakim K. Lindvall⁴
1. Viking Ice Consultancy, Kristiansand, Norway; 2. Statoil Canada Ltd, St. John's, NL, Canada; 3. Statoil ASA, Trondheim, Norway; 4. Viking Ice Consultancy, Norrköping, Sweden

Ice Load Measurement System OMAE2018-78709

Håvard Nyseth, Anders Hansson, Johan Ileskär
DNV GL, Høvik, Norway

CFD and FSI

8-6-1 Advanced Computations & Software Development

Thursday June 21 Room: **Dresden** | 13:30 – 15:00
Session Chair: Guilherme Vaz, MARIN, Netherlands
Session Co-Chair: Madhusuden Agrawal, BP, USA

FSI Analysis the Dynamic Performance of Composite Propeller OMAE2018-77108

Fanchen Zhang, Jianjun Ma
Wuhan Second Ship Design and Research Institute, Wuhan, China

Bubble Breakup and Coalescence Modelling for Subsea Gas Releases using Computational Fluid Dynamics OMAE2018-77293

Kejia Wu¹ Johnathan Green¹ Subajan Sivandran²
1. BMT, Teddington, United Kingdom; 2. BMT, Singapore, Singapore

Development of a Lifting-Line-based Method for Preliminary Propeller Design OMAE2018-77995

Jose Rodolfo Chreim¹ Joao Lucas Dozzi Dantas² Eduardo Tadashi Katsuno¹ Gustavo R. S. Assi¹ Marcos Pimenta¹
1. Universidade de Sao Paulo, Sao Paulo, SP, Brazil;
2. Institute for Technological Research, Sao Paulo, SP, Brazil

A 3D Coupled Fluid-Flexible Multibody Solver for Offshore Vessel-Riser System OMAE2018-78281

Vaibhav Joshi¹ Pardha Saradhi Gurugubelli¹ Yun Zhi Law¹ Rajeev Kumar Jaiman¹ Peter Francis Bernad Adaikalaraj²
1. National University of Singapore, Singapore, Singapore;
2. Keppel Offshore and Marine Technology (KOMtech), Singapore, Singapore

Physics-based Data-Driven Models (PBDDM) for Coupled Numerical and Physical Simulations OMAE2018-78515

My Ha Dao
Institute of High Performance Computing, Singapore, Singapore

Ocean Renewable Energy

9-3-5 Control and New Design Concept

Thursday June 21 Room: **Estrasburgo** | 13:30 – 15:00
Session Chair: Ryan Coe, Sandia National Laboratories, USA
Session Co-Chair: Annie Dallman, Sandia National Laboratories, USA

Energy Harvesting from Waves using Piezoelectric Floaters OMAE2018-78395

Daniele Dessi¹ Giorgia Leonardi¹ Fabio Passacantilli²
1. CNR-INSEAN, Rome, Italy; 2. CNR-ISTEC, Rome, Italy

Kinematic Analysis of the Motion of a Six Degrees of Freedom Wave Energy Converter based on the Concept of the Stewart-Gough Platform OMAE2018-78601

Diego E. Galván-Pozos, Francisco J. Ocampo-Torres
Centro de Investigación Científica y de Educación Superior de Ensenada, Baja California (CICESE), Ensenada, BCN, Mexico

Model Scale Testing of the Tupperwave Device with Comparison to a Conventional OWC OMAE2018-78611

Pierre Benreguig¹ Jimmy Murphy¹ Wanan Sheng²
 1. MaREI Center, University College Cork, Ringaskiddy, Ireland; 2. UCC, Cork, Ireland

Ocean Renewable Energy

9-5-2 Turbine and Efficiency II

Thursday June 21 Room: **Paris** | 13:30 – 15:00

Session Chair: Madjid Karimirad, Queen's University Belfast, United Kingdom
 Session Co-Chair: Efstathios Konstantinidis, University of Western Macedonia, Greece

Dynamic Modeling of Flow Induced Vibration Power-Plants

OMA2018-78163
 Nikolaos I. Xiros¹ Michael Bernitsas² Hai Sun² Ralph Saxton¹ Juliette W. Loup¹
 1. University of New Orleans, New Orleans, LA, USA; 2. University of Michigan, Ann Arbor, MI, USA

Optimal Damping for Energy Extraction from Drag-Aided

Vortex-Induced Motions OMAE2018-78394
 Iro Malefaki, Efstathios Konstantinidis
 University of Western Macedonia, Kozani, Greece

Turbulence and Wake Effects Tidal Stream Turbine Arrays OMAE2018-77507

Martin Nuernberg, Longbin Tao
 University of Strathclyde, Glasgow, United Kingdom

Offshore Geotechnics

10-8-1 Anchors II

Thursday June 21 Room: **Londres** | 13:30 – 15:00

Session Chair: Horst Brandes, University of Hawaii At Manoa, USA

Penetration of Ship Anchors and the Influence of Submarine Cables

OMA2018-78314
 Jürgen Grabe, Evelyn Heins
 Hamburg University of Technology, Hamburg, Germany

Experimental Study on Gravity Anchor for Optimum Design of Shear Key

OMA2018-78390
 Yunsu Han, Jeong woo Hong, Min han Oh, Jong jin Jung
 Hyundai Heavy Industries, Ulsan, Korea

Numerical Investigation into the Keying Process of a Plate Anchor

Vertically Installed in Cohesionless Soil OMAE2018-78617
 Nabil Al Hakeem, Charles Aubeny
 Texas A&M University, College Station, TX, USA

A Method to Predict Embedded Trajectory based on the Finite Element

Analyses of Bearing Capacity of Drag Anchor OMAE2018-77167
 Dongsheng Qiao, Muren Bao, Jun Yan, Daocheng Zhou, Yugang Li
 Dalian University of Technology, Dalian, China

Petroleum Technology

11-1-3 Drilling Technology Evaluation

Thursday June 21 Room: **Potsdam** | 13:30 – 15:00

Session Chair: Stephen Butt, Memorial University of Newfoundland, Canada
 Session Co-Chair: Mohammad Aziz Rahman, Texas A&M University at Qatar, Qatar

Drilling Data Quality Management: Case Study with a Laboratory Scale

Drilling Rig OMAE2018-77510
 Suranga Geekiyana, Dan Sui, Bernt Aadnoy
 University of Stavanger, Stavanger, Norway

PFC-2D Numerical Study of the Influence of Passive Vibration

Assisted Rotary Drilling Tool (pVARD) on Drilling Performance Enhancement OMAE2018-78057
 Abourawi Alwaar, Abdelsalam Abugharara, Stephen Butt
 Memorial University of Newfoundland, St. John's, NL, Canada

CFD Numerical Simulation for Downhole Thruster

Performance Evaluation OMAE2018-78101
 Bashir Mohamed¹ Abdelsalam Abugharara¹ Mohammad Aziz Rahman² Stephen Butt¹
 1. Memorial University of Newfoundland, St. John's, NL, Canada; 2. Texas A&M University at Qatar, Doha, Qatar

Time-Dependent CFD Simulations of a Closing Blowout Preventer (BOP)

OMA2018-78001
 Daniel Barreca¹ Matthew Franchek² Mayank Tyagi¹
 1. Louisiana State University, Baton Rouge, LA, USA; 2. University of Houston, Houston, TX, USA

Petroleum Technology

11-5-2 Petroleum Production Systems Design and Operation II

Thursday June 21 Room: **Baden Baden** | 13:30 – 15:00

Session Chair: Sergio Bordalo, Unicamp - University of Campinas, Brazil
 Session Co-Chair: Celso K. Morooka, University of Campinas/Faculty of Mechanical Engineering/Center for Petroleum Studies, Brazil

Surface Facilities for a Thermal EOR Project: Thermal EOR for Extra

Heavy Oil OMAE2018-77792
 Gilberto A. Peña Villegas¹ María del Carmen Echeverrias²
 1. Repsol Exploration, Madrid, Spain; 2. Repsol YPF, Madrid, Spain

Proposition of Operational Maps as Tools for Evaluating Safety during

the Emergency Disconnection of Risers OMAE2018-77073
 Marcelo Jaculli¹ José Ricardo P. Mendes¹ Kazuo Miura² Marcio Yamamoto²
 1. University of Campinas - UNICAMP, Campinas, SP, Brazil; 2. The University of Tokyo, Kashiwa-shi, Japan

Experimental Study of Two-phase Flow in an Oscillating Vertical Pipe

OMA2018-78323
 Sergio N. Bordalo¹ Elinaldo S. Silva²
 1. UNICAMP - University of Campinas, Campinas, SP, Brazil;
 2. Consultant (Private Practice), Campo dos Goytacazes, RJ, Brazil

Experimental Study and Modeling of Heating Effect in Electrical

Submersible Pump Operating with Ultra-Heavy Oil OMAE2018-78565
 Jorge L. Biazussi¹ Cristhian Porcel Estrada¹ William Monte Verde¹ Antonio C. Bannwart¹
 Valdir Estevam¹ Paulo S. M. V. Rocha² Salvador J. Alves Neto² Alexandre Tavares²
 1. University of Campinas, Campinas, SP, Brazil; 2. Queiroz Galvão Exploração e Produção S.A., Rio de Janeiro, RJ, Brazil

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-3-3 Ship Maneuvering and Control III

Thursday June 21 Room: **Bristol** | 13:30 – 15:00

Session Chair: Massimo Figari, University of Genova, Italy

Session Co-Chair: Lokukaluge Prasad Perera, UiT

The Arctic University of Norway, Norway

Algorithm for Auto-Piloting Efficient Seismic Line-Change Turning Maneuvers OMAE2018-77226

Jan Vidar Grindheim¹ Inge Revhaug² Ken Welker¹ Peder Solheim¹ Egil Pedersen³
 1. Geograf AS, Sandnes, Norway; 2. Faculty of Science and Technology (IMT), Norwegian University of Life Sciences (NMBU), Aas, Norway; 3. Department of Engineering Science and Safety, UiT - The Arctic University of Norway, Tromsø, Norway

Autonomous Ship Navigation under Deep Learning and the Challenges in COLREGs OMAE2018-77672

Lokukaluge Prasad Perera, UiT The Arctic University of Norway, Tromsø, Norway

All Round Approach for the Design of a New Escort Tug Family

OMAE2018-77914

Massimo Figari¹ Luca Martinelli² Michele Viviani¹ Diego Villa¹

Benedetto Piaggio¹ Lucia Enoizi²

1. University of Genova, Genova, Italy; 2. Rosetti Marino SpA, Ravenna, Italy

Motion Planning, Guidance and Control System for Autonomous Surface Vessel OMAE2018-78537

Miguel Hinostroza¹ Haitong Xu² Carlos Guedes Soares²

1. CENTEC, Lisbon, Portugal; 2. Instituto Superior Técnico, Universidade de Lisboa, Lisbon, Portugal

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-6-1 Collision and Crashworthiness I

Thursday June 21 Room: **Oxford** | 13:30 – 15:00

Session Chair: Sang-Rai Cho, University of Ulsan, Korea

Session Co-Chair: Zhiqiang Hu, Newcastle University, United Kingdom

Experimental and Numerical Analysis on the K-Joint Laterally Impacted by a Knife Edge Indenter OMAE2018-77123

Kun Liu^{1,2} Zili Wang² Wenyong Tang²

1. Shanghai Jiao Tong University, Shanghai, China;

2. Jiangsu University of Science and Technology, Zhenjiang, China

A New Method in Identifying Critical Void Volume Fraction of GTN Model for NVA Mild Steel in Ship Collision and Grounding Scenario OMAE2018-77182

Zijie Song¹ Zhiqiang Hu²

1. Shanghai Jiao Tong University, Shanghai, China;

2. Newcastle University, Newcastle upon Tyne, United Kingdom

Grounding Experiments of a Ship Model in Water Tank OMAE2018-78049

Ling Zhu, Qingwen Zhou, Mingsheng Chen, Xiaoqi Chen

Wuhan University of Technology, Wuhan, China

Ductile Fracture Modeling of DH36 Grade Steels OMAE2018-78681

Burak Can Cerik, Sung-Ju Park, Joonmo Choung

Inha University, Incheon, Korea

REFRESHMENT BREAK

15:00 – 15:30

Location: Venecia / Milán / Roma

CONCURRENT SESSIONS

15:30 – 17:30

Structures, Safety and Reliability

2-12-5 Structural Analysis and Optimization V

Thursday June 21

Room: **Dusseldorf** | 15:30 – 17:30

Session Chair: Paulo Videiro, UFRJ, Rio de Janeiro, Brazil

Session Co-Chair: Shan Wang, Centre for Marine

Technology and Ocean Engineering, Portugal

Processing of Ambient Vibration Response for Modal Parameters Identification of a Jacket-type Offshore Platform: Sea Test Study

OMAE2018-77018

Xingxian Bao, Zhihui Liu, Chen Shi

China University of Petroleum (East China), Qingdao, China

Optimization of the Vibration Response of a Longitudinal-Transverse Stiffened Conical Shell based on an Ensemble of Surrogates

OMAE2018-77334

Jiachang Qian¹ Enen Yu¹ Jinlan Zhang² Dawei Zhan¹ Yuansheng Cheng¹

1. Huazhong University of Science and Technology, Wuhan, China; 2. Wuhan Second Ship Design and Research Institute, Wuhan, China

Analysis of Local Vibration and Strength of Water Jet Propulsion Unit of High Speed Ship OMAE2018-77340

Xin Zhang, Huilong Ren, Guoqing Feng, Yifu Liu, Zhaonian Wu

Harbin Engineering University, Harbin, China

The Investigation on Cabin Noise Control of Ship Structure based on SEA Graph Method OMAE2018-78675

Zeyu Shi, Yao Xiongliang, Guoxun Wu, Yue Tian

Harbin Engineering University, Harbin, China

CUDA based Parallel Computation for Gauss Elimination Method

OMAE2018-78479

Xiao Liu, Lei Xu

South China University of Technology, Guangzhou, China

Pipelines, Risers, and Subsea Systems

4-4-1 Subsea Structures and Equipment

Thursday June 21

Room: **Berlin** | 15:30 – 17:30

Session Chair: Duane DeGeer, INTECSEA, USA

Session Co-Chair: Doug Swanek, C-FER Technologies, Canada

Numerical Simulation of Subsea Cluster Manifold by the Sheave Installation Method in Deepwater OMAE2018-77336

Yu Zhao¹ Yingying Wang¹ Liwei Li² Chao Yang¹ Yang Du¹ Haoran Chen¹ Menglan Duan¹

1. China University of Petroleum (Beijing), Beijing, China; 2. CNOOC Research Institute, Beijing, China

Large Scale Earthquake Analysis of Integrated Subsea Facilities

OMAE2018-78090

Majid Hesar

Subsea 7, Sutton, United Kingdom

Behavior Evaluation of Subsea Jumpers Exposed to Current by Experiments and FEM OMAE2018-78138

Mohammad Mobasheramini, Luciene Alves, Antonio Carlos Fernandes, Gilberto Bruno Ellwanger
Universidade Federal of Rio de Janeiro, Rio de Janeiro, RJ, Brazil

Modal Identification of an Electrical Submersible Pump Installed in a Mock Well using Drop Tests OMAE2018-78140

Ulisses A. Monteiro¹ Ricardo S. Minette² Ricardo H. Gutiérrez³ Luiz A. Vaz⁴
1. Fundação COPPETEC, Rio de Janeiro, RJ, Brazil; 2. Petrobras, Rio de Janeiro, RJ, Brazil;
3. LEDAV/COPPE/UFRJ, Rio de Janeiro, RJ, Brazil; 4. Departamento de Engenharia Naval e Oceânica - DEnO/UFRJ, Rio de Janeiro, RJ, Brazil

Pipelines, Risers, and Subsea Systems

4-6-1 Innovative Technologies for Deepwater Low-Cost Production

Thursday June 21 Room: **Frankfurt** | 15:30 – 17:30

Session Chair: Segen Estefen, COPPE/UFRJ, Brazil

Session Co-Chair: Theodoro Netto, UFRJ, Brazil

Qualification of Thermoplastic Composite Pipes OMAE2018-77014

Jonathan Wilkins
Magma Global Limited, Portsmouth, United Kingdom

Full-Scale Testing of a Friction-based, Post-installable, Fiber-Optic Strain Sensor for Subsea Monitoring Systems OMAE2018-77117

David V. Brower¹ Nicole L. Bentley² John D. Hedengren³ Robert M. Kipp¹
Suy Q. Le² Calvin H. Seaman¹ Henry H. Tang⁴ J. Conrad Wilson¹
1. Astro Technology Inc., Houston, TX, USA; 2. NASA - Johnson Space Center, Houston, TX, USA; 3. Brigham Young University, Provo, UT, USA; 4. Aerodyne Industries, LLC, Houston, TX, USA

Insulation Performance of Sandwich Pipe OMAE2018-77180

Jiankun Yang¹ Segen Estefen² Marcelo Igor Lourenço Souza¹ Yuxi Wang¹ Cheng Hong¹
1. Federal University of Rio de Janeiro, Rio de Janeiro, RJ, Brazil; 2. COPPE/UFRJ, Rio de Janeiro, RJ, Brazil

Numerical Simulation and Innovative Structure of Drainage Cover

OMA2018-77197
S.B Zhang, Z.D Wang, Yan Yan, G.F. Sun, Z.H. Ni
Southeast University, Nanjing, China

Development of a New Methodology for Riser Deformed Shape Estimation OMAE2018-78645

Junho Choi, Joseph Moo-Hyun Kim
Texas A&M University, College Station, TX, USA

Ocean Engineering

6-6-1 Unsteady Hydrodynamics Vibrations, Acoustics, and Propulsion

Thursday June 21 Room: **Colonia** | 15:30 – 17:30

Session Chair: Jon Mikkelsen, University of British Columbia, Canada

Numerical Study the Wake behind an Inclined Prolate Spheroid at Re=10000 using LES OMAE2018-77363

Hongyu Zhou, Hao Liu, Zhiguo Zhang, Xianzhou Wang, Dakui Feng
Huazhong University of Science and Technology, Wuhan, China

An Optimization Framework for PBCF Energy Saving Devices Design

OMA2018-77921
Stefano Gaggero, Diego Villa
University of Genoa, Genoa, Italy

Analysis of Hydrophobic Painting in Model-scale Marine Propeller

OMA2018-78209
Eduardo Tadashi Katsuno¹ Joao Lucas Dozzi Dantas² Emilio Carlos Nelli Silva¹
1. University of Sao Paulo, Sao Paulo, SP, Brazil;
2. Institute for Technological Research, Sao Paulo, SP, Brazil

Numerical Analysis of Scale Effect on Propeller E1619

OMA2018-78213
Xi Chen, Yushen Huang, Zhiguo Zhang, Peng Wei, Fengfu Jin
Huazhong University of Science and Technology, Wuhan, China

Numerical Investigation of Energy Saving Device Effects on Ships with Propeller-Hull Interactions OMAE2018-78600

Vinh-Tan Nguyen, Ravi Chaithanya Mysa, Quang Tuyen Le, Shengwei Ma
Institute of High Performance Computing, A*STAR, Singapore, Singapore

Ocean Engineering

6-7-2 Hydrodynamics and Welded Joints

Thursday June 21 Room: **Stuttgart** | 15:30 – 17:30

Session Chair: Joel S. Sales Junior, Laboratory of Waves and Current - LOC - Universidade Federal do Rio de Janeiro, Brazil

Semi-Submersible Floater's VIM Simulation Method for Mooring Line Safety Assessment OMAE2018-77238

Toshifumi Fujiwara
National Maritime Research Institute, Tokyo, Japan

Hydroelastic Analysis of a Submerged Horizontal Plate using a Coupled SPH-FEM Model OMAE2018-77431

Xifeng Gao, Ming He, Wanhai Xu, Hongshu Wang
State Key Laboratory of Hydraulic Engineering Simulation and Safety, Tianjin University, Tianjin, China

Numerical Study on the Hydrodynamic performance of Integrated Interceptor-Flap Fitted to the Transom of Planing Vessels OMAE2018-78038

Suneela Jangam, Anantha Subramanian V, P Krishnankutty
Indian Institute of Technology Madras, Chennai, TN, India

Estimation of Residual Stresses in Steel Welded Joints using Three Dimensional Finite Element Analyses OMAE2018-78628

Shivdayal Patel¹ Suhail Ahmad² B. P. Patel²
1. IIITDM Jabalpur, Jabalpur, India; 2. Indian Institute of Technology Delhi, New Delhi, India

Numerical Modelling of a Variable-Pitch, Vertical Axis Tidal Turbine Incorporating Flow Acceleration OMAE2018-77100

Brian Mannion¹ Stephen Nash¹ Sean Leen¹ Vincent McCormack²
1. NuiGalway, Galway, Ireland; 2. GKinetic, Limerick, Ireland

Ocean Engineering

6-9-1 Environment, Aquaculture and Very Large Structures

Thursday June 21

Room: **Burdeos** | 15:30 – 17:30

Session Chair: Lin Li, University of Stavanger, Norway

Session Co-Chair: Shuzheng Sun, Harbin Engineering University, China

Optimization of Heave Motions for a Four Column Semi-Submersible based on Genetic Algorithm OMAE2018-77289

Suji Zhu

7waves AS, Son, Norway

Dynamic Response Analysis of a Floating Bridge subjected to Environmental Loads OMAE2018-77590

Zhengshun Cheng¹ Zhen Gao² Torgeir Moan³

1. NTNU, Trondheim, Norway; 2. Norwegian University of Science and Technology, Trondheim, Norway; 3. Centre For Ships & Ocean Structures, Trondheim, Norway

Metocean Conditions in a Norwegian Fjord OMAE2018-78031

Jungao Wang, Lin Li, Jasna B. Jakobsen, Sverre K. Haver

University of Stavanger, Stavanger, Norway

Experimental & Numerical Modelling of an Offshore Aquaculture Cage for Open Ocean Waters OMAE2018-77600

Alfonso Jurado, Patricia Sanchez, Jose Armesto, Raul

Guanche, Bárbara Ondiviela, Jose Antonio Juanes

Environmental Hydraulics Institute - IH Cantabria, University of Cantabria, Santander, Spain

Drag Coefficients of Vertically-Mounted Full-scale Blue Mussel Dropper Lines OMAE2018-78534

Arndt Hildebrandt¹ Jannis Landmann¹ Thorsten Ongsiek¹ Nils Goseberg²

1. Ludwig-Franzius-Institut für Wasserbau, Hannover, Germany; 2. Leichtweiß-Institut, Braunschweig, Germany

Ocean Engineering

6-14-2 Coastal Engineering II

Thursday June 21

Room: **Marsella** | 15:30 – 17:30

Session Chair: Kuang-An Chang, Texas A&M University, USA

Applied Research on the Performance of Flexible-Membrane Floating Breakwater in Waves OMAE2018-77917

Youde Feng¹ Fenghua Xiong² Sheng Peng¹ Xiandao Feng¹ Ziyu Xia³

1. CCCC Second Harbour Engineering Co.Ltd., Wuhan, China;
2. Third Company, CCCC Second Harbour Engineering Co.Ltd., Zhenjiang, China;
3. Wuhan University of Technology, Wuhan, China

Numerical Study on the Effect of a Submerged Breakwater Seaward of an Existing Breakwater for Climate Change Adaptation using REEF3D OMAE2018-77965

Athul Sasikumar¹ Arun Kamath² Onno Musch³ Arne Erling Lothe¹ Hans Bihs²

1. Norconsult, Trondheim, Norway; 2. NTNU, Trondheim, Norway; 3. Norconsult AS, Trondheim, Norway

Large-scale Experiments of Wave-Overtopping Loads on Walls: Layer Thicknesses and Velocities OMAE2018-78104

Lorenzo Cappiotti¹ Andrea Esposito¹ Maximilian Streicher² Andreas Kortenhaus²

Babette Scheres³ Holger Schuettrumpf³ Matthias Hirt³

Bas Hofland⁴ Irene Simonetti¹ Xuexue Chen⁴

1. University of Florence, Florence, Italy; 2. Ghent University, Ghent, Belgium;
3. Aachen University, Aachen, Germany; 4. Delft University, Delft, Netherlands

Compassion Study on the Flow Characteristics of Rope and Cylinder with Large-Eddy Simulation OMAE2018-78212

Hui Cheng¹ Liu Yi Huang¹ Yi Ni¹ Fenfang Zhao¹ Xinxin Wang¹ Zhenlin Liang² Yan Li Tang¹

1. Ocean University of China, Qingdao, China; 2. Shan Dong University, Weihai, China

Polar and Arctic Sciences and Technology

7-9-3 SKT Project III

Thursday June 21

Room: **Munich** | 15:30 – 17:30

Session Chair: Sören Ehlers, Technical University of Hamburg, Germany

Session Co-Chair: Walter Kuehnlein, sea2ice, Germany

SKT 2017 – Full Scale Dynamic Positioning in Ice – Results & Learnings OMAE2018-78556

Sofien Kerkeni¹ Pavel Liferov² Nicolas Serre³ Robert Bridges⁴ Finn Jorgensen⁵

1. D-ICE Engineering, Nantes, France; 2. Statoil ASA, Trondheim, Norway; 3. Multiconsult, Tromsø, Norway; 4. Total S.A., Paris, France; 5. Viking supply ships, Stenungsund, Sweden

Distributed Sensing of Loads Acting Against the Hull of a Stationkeeping Vessel in Ice OMAE2018-78579

Hans-Martin Heyn¹ Francesco Scibilia² Roger Skjetne¹

1. Norwegian University of Science and Technology, Trondheim, Norway;
2. Statoil ASA, Trondheim, Norway

Station-Keeping Trials in Ice: Ice and Metocean Conditions OMAE2018-78620

Sigurd Teigen¹ Joakim K. Lindvall² Ilija Samardzija³ Roar I. Hansen⁴

1. Statoil ASA, Bergen, Norway; 2. Viking Ice Consultancy, Norrköping, Sweden; 3. SAMCoT, NTNU, Trondheim, Norway; 4. StormGeo, Bergen, Norway

Closing Remarks OMAE2018-78787

Walter Kuehnlein

sea2ice, Hamburg, Germany

CFD and FSI

8-7-1 Verification, Validation and Best Practices

Thursday June 21

Room: **Dresden** | 15:30 – 17:30

Session Chair: Guilherme Vaz, MARIN, Netherlands

Session Co-Chair: Luis Eca, Técnico Lisboa, Portugal

A Semi-Lagrangian Particle FEM Method for Fluid Flows: Analysis of Flow around the KVLCC Hull OMAE2018-78043

Jonathan Colom Cobb, Borja Serván Camas, Julio García Espinosa

International Centre for Numerical Methods in Engineering, Barcelona, Spain

A Study on Fluid-Structure Interaction Performance of a Flexible Hydrofoil OMAE2018-78522

Zheng Huang, Ying Xiong, Ye Xu, Shancheng Li

NUE, Wuhan, China

Boundary Layer Effects in the Modeling of Semi-Submersible Columns OMAE2018-78531

Sam Holmes

RedWing Eng, Palo Alto, CA, USA

Validation Exercises for a Free Falling Wedge into Calm Water OMAE2018-78598

Joao Muralha¹ Luis Eca¹ Antonio Maximiano² Guilherme Vaz³

1. IST, Lisboa, Portugal; 2. WaVec Offshore Renewables, Lisboa, Portugal;
3. MARIN, Wageningen, Netherlands

Ocean Renewable Energy

9-4-1 Analytical, Numerical and Experimental Studies I

Thursday June 21

Room: **Estrasburgo** | 15:30 – 17:30

Session Chair: Masoud Hayatdavoodi, University of Dundee, United Kingdom

Session Co-Chair: Senu Sirnivas, National Renewable Energy Laboratory, USA

Experimental Assessment of the Performance of CECO Wave Energy Converter in Irregular Waves OMAE2018-77686

Claudio A. Rodríguez¹ Francisco de Almeida Taveira-Pinto² Paulo Jorge Rosa Santos²

1. LabOceano/COPPE Federal University of Rio de Janeiro, Rio de Janeiro, RJ, Brazil;

2. Faculty of Engineering of the University of Porto (FEUP), Porto, Portugal

Experimental Study on Model Predictive Control for a Point Absorber Type Wave Energy Converter with a Linear Generator OMAE2018-77724

Jun Umeda¹ Hiroki Goto² Toshifumi Fujiwara¹ Tomoki Taniguchi¹ Shunji Inoue¹

1. National Maritime Research Institute, Mitaka, Japan; 2. Utsunomiya University, Utsunomiya, Japan

On the Development of an Efficient Surrogate Model for Predicting Long-term Extreme Loads on a Wave Energy Converter OMAE2018-78766

Lance Manuel¹ Phong Nguyen¹ Ryan Coe²

1. University of Texas at Austin, Austin, TX, USA;

2. Sandia National Laboratories, Albuquerque, NM, USA

Mooring System Design Approach, a Case Study for MARMOK-A Floating OWC Wave Energy Converter OMAE2018-77634

Imanol Touzón¹ Borja de Miguel² Vincenzo Nava³ Victor Petuya⁴

Iñigo Mendikoa⁵ Francesco Boscolo⁵

1. Tecnalia R&I / University of the Basque Country EHU-UPV, Derio, Spain; 2. Oceantec Energías Marinas, Derio, Spain; 3. Tecnalia R&I, Derio, Spain; 4. University of the Basque Country, Vizcaya, Spain; 5. Tecnalia Research & Innovation, Derio, Spain

Performance Assessment of the Overset Grid Method for Numerical Wave Tank Experiments in the Openfoam Environment OMAE2018-77564

Christian Windt¹ Josh Davidson¹ Akram Benazzou² John V. Ringwood³

1. Centre for Ocean Energy Research, Maynooth University, Maynooth, Ireland; 2. École des mines de Nantes, Nantes, France; 3. Maynooth University, Maynooth, Ireland

Ocean Renewable Energy

9-6-2 Thermal, Hybrid and Others: Novel Concepts

Thursday June 21

Room: **Paris** | 15:30 – 17:30

Session Chair: Rafael d'Amore-Domenech, Universidad Politécnica de Madrid, Spain

Session Co-Chair: Antonio Villalba-Herreros, Universidad Politécnica de Madrid, Spain

Design Optimization of Floating Structure for a 100 MW-Net Ocean Thermal Energy Conversion (OTEC) Power Plant OMAE2018-77539

Ristiyanto Adiputra, Tomoaki Utsunomiya

Kyushu University, Fukuoka, Japan

Proof of Concept of a Novel Hybrid Wind-Wave Energy Converter OMAE2018-78150

Carlos Perez-Collazo, Deborah Greaves, Gregorio Iglesias

University of Plymouth, Plymouth, United Kingdom

Alkaline Electrolysis at Sea for Green Hydrogen Production: a Solution to Electrolyte Deterioration OMAE2018-77209

Rafael d'Amore-Domenech, Emilio Navarro, Eleuterio Mora, Teresa J. Leo

Universidad Politécnica de Madrid, Madrid, Spain

Durability of Polymers and Composites: The Key to Reliable Marine Renewable Energy Production OMAE2018-77558

Peter Davies, Pierre-Yves Le Gac, Maelenn Le Gall, Mael Arhant, Corentin Humeau

IFREMER (French Ocean Research Institute), Plouzané, France

MAESTRALE: The implementation of Blue Energy in the Mediterranean Sea OMAE2018-77593

Javier Abanades¹ Juan Pablo Torregrosa²

1. TYPSA, Valencia, United Kingdom; 2. CEEI Valencia, Valencia, Spain

Offshore Geotechnics

10-4-1 Pile Foundations II

Thursday June 21

Room: **Londres** | 15:30 – 17:30

Session Chair: Manuela Kanitz, Hamburg University of Technology, Germany

The Enhanced Kinematic Hardening Model for Load Dependent Stiffness and Damping of Jack-up Foundations OMAE2018-77285

Maas Hoogeveen¹ Hugo Hofstede¹ Amir M. Kaynia²

1. GustoMSC, Schiedam, Netherlands; 2. Norwegian Geotechnical Institute, Oslo, Norway

Numerical Simulation on Residual Responses of Adjacent Jacket Platform Piles after Spudcan Penetration and Extraction OMAE2018-77788

Jianhua Wang, Yifei Fan, Haibo Ji

Tianjin University, Tianjin, China

Experimental Study of Water Cutoff Performance of Steel Pipe Sheet Piles with Interlocked Joint OMAE2018-78124

Youngho Hong¹ Daesung Lim² Doowon Seo² Jaeku Jeon² Kwangseok Chae³ Jongsub Lee¹

1. Korea University, Seoul, Korea; 2. Sambo E&C, Seoul, Korea; 3. GS Engineering & Construction Co., Seoul, Korea

Field Study on the Effects of Impact Frequency on the Axial and Lateral Capacity of Driven Pipe Piles in Sand OMAE2018-78428

Ivana Anusic¹ Barry Michael Lehane² Gudmund Eiksdun³ Morten Albjerg Liingaard⁴

1. Department of Civil and Environmental Engineering, Norwegian University of Science and Technology, Trondheim, Norway; 2. School of Civil, Environmental and Mining Engineering, The University of Western Australia, Perth, WA, Australia; 3. NTNU, Trondheim, Norway; 4. Wind Power, Ørsted, Fredericia, Denmark

Decommissioning of Offshore Monopiles, Occurring Problems and Alternative Solutions OMAE2018-78577

Nils Hinzmann, Philipp Stein, Jörg Gattermann

Technische Universität Braunschweig, Institute of Foundation Engineering and Soil Mechanics, Braunschweig, Germany

Petroleum Technology

11-8-1 Innovations in Drilling, Production and Transportation

Thursday June 21

Room: **Potsdam** | 15:30 – 17:30

Session Chair: Wenting Qin, Chongqing University of Science and Technology, China

Session Co-Chair: Ming Feng, Chongqing University of Science and Technology, China

Virtual Subsea Flow Metering Technology for Gas Condensate Fields and its Application in Offshore China OMAE2018-77120

Cheng Bing, Li Qingping, Wang Jue, Qing Wang

CNOOC Research Institute, Beijing, China

The Investigations of Two Analytical Heat Transfer Modelings to Predict the Temperature Profile in the Wellbore OMAE2018-77550

Ming Feng¹ Catalin Teodoru²

1. Chongqing University, Chongqing, China; 2. Mewbourne School of Petroleum and Geological Engineering, Norman, OK, USA

Quantification of Multiple Factor and Interaction Effects on Drilling Fluids Invasion OMAE2018-78328

Chinedum Ezeakacha¹ Saeed Salehi² Raj Kiran¹

1. University of Oklahoma, Norman, OK, USA; 2. Mewbourne School of Petroleum and Geological Engineering, Norman, OK, USA

The Reservoir Characteristics and Fluid Damage Relation – a Case from Chang-7 Formation in Ordos Basin OMAE2018-78341

Baoshan Guan, Li Liang, Minglei Wang, Yuting Liu

China National Petroleum, Langfang, China

Investigations on the Mud Pumps Valves Repair using Hard Metal Depositing by Welding OMAE2018-78541

Marius Badicioiu¹ Mihaela Caltaru¹ Mihail Minescu¹ Catalin Teodoru²

1. UPG Ploiesti, Ploiesti, Romania; 2. Mewbourne School of Petroleum and Geological Engineering, Norman, OK, USA

A Novel Approach for Mitigation of Shocks & Vibration and Achieving Drilling Performance in Carbonate Reservoirs OMAE2018-78655

Muhammad Sarfraz Balka¹ Ayman Ghazzawi² Hernan Melgares Escalera³

1. Schlumberger, Al-Khobar, Saudi Arabia; 2. Schlumberger, Khobar, Saudi Arabia; 3. Schlumberger, Abudhabi, United Arab Emirates

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-3-4 Ship Maneuvering and Control IV

Thursday June 21

Room: **Bristol** | 15:30 – 17:30

Session Chair: Jialun Liu, Wuhan University of Technology, China

Session Co-Chair: Xueqian Zhou, Harbin Engineering University, China

Rans Study on Hydrodynamic Characteristics of Flapped Rudders

OMA2018-77424

Jialun Liu¹ Robert Hekkenberg² Bingqian Zhao³

1. Wuhan University of Technology, Wuhan, China; 2. TU Delft, Delft, Netherlands; 3. Wuhan Rules and Research Institute, China Classification Society, Wuhan, China

Analysis of Numerical Errors of the Hess Smith Panel Method with Asymmetric Meshes OMAE2018-77772

Huilong Ren¹ Chen Xu¹ Xueqian Zhou¹ Serge Sutulo² Carlos Guedes Soares³ Chenfeng Li¹

1. Harbin Engineering University, Harbin, China; 2. Centre for Marine Tech & Ocean Energy, IST, Lisbon University, Lisboa, Portugal; 3. Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

Escort Tug Hydrodynamic Forces Estimation in a Design Framework: from Model Test to Manoeuvrability Simulation OMAE2018-78052

Benedetto Piaggio, Michele Viviani, Michele Martelli

University of Genova, Genova, Italy

Quantifying the Uncertainty of the Crabbing Capability OMAE2018-78429

Victor Ferrari, Anton Kisjes, Frans H. H. A. Quadvlieg

MARIN, Wageningen, Netherlands

Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-6-2 Collision and Crashworthiness II

Thursday June 21

Room: **Oxford** | 15:30 – 17:30

Session Chair: Bin Liu, School of Transportation, Wuhan University of Technology, China

Session Co-Chair: Jorgen Amdahl, Norwegian University of Science and Technology, Norway

Finite Element Analysis of a Container Ship Struck by Rigid and Deformable Bows OMAE2018-77149

Bin Liu¹ Lin Chen² Xianting Liao² Ling Zhu³ Carlos Guedes Soares⁴

1. School of Transportation, Wuhan University of Technology, Wuhan, China; 2. China Ship Development and Design Center, Wuhan, China; 3. Wuhan University of Technology, Wuhan, China; 4. Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

Residual Longitudinal Strength of Damaged Box Girder Structures

OMA2018-77379

Sang-Rai Cho, Sang-Hyun Park, May Thu Cho, Hyun Kyoung Shin

University of Ulsan, Ulsan, Korea

Numerical Analysis on the Response of Deck Plates Laterally Impacted by a Rectangular Indenter OMAE2018-78023

Ling Zhu, Junying Gao, Yinggang Li

Wuhan University of Technology, Wuhan, China

Numerical Investigation of the Collision Damage and Residual Strength of a Floating Bridge Girder OMAE2018-78728

Yanyan Sha¹ Jorgen Amdahl¹ Cato Dørum² Zhaolong Yu¹

1. Norwegian University of Science and Technology, Trondheim, Norway; 2. Statens Vegvesen, Hamar, Norway

Accuracy of Failure Criteria Commonly Used for Ship Collision Simulations OMAE2018-77377

Richard Villavicencio¹ Bin Liu² Kun Liu³

1. Royal IHC, Kindrijk, Netherlands; 2. School of Transportation, Wuhan University of Technology, Wuhan, China; 3. Shanghai Jiao Tong University/ Jiangsu University of Science and Technology, Zhenjiang, China

Farewell Reception

17:30 – 19:30

Location: **Venecia / Milán / Roma**

See Social Events, page 15 for more details.

Hosted by OMAE 2019

ASME 2018 IOWTC

1st International Offshore Wind Technical Conference

November 4-7, 2018 | San Francisco, California
Sheraton Fisherman's Wharf Hotel

ASME presents a new 3-day conference, focusing on the technical aspects of Offshore Wind. *More than 80 technical papers will be presented at the conference in the following two tracks:*

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- New Fixed Offshore Concepts
- New Floating Concepts
- Mooring & Foundations
- Offshore Turbines Modeling
- Aero-Hydro Modeling
- Structural Analysis
- Metocean
- Model Testing
- Field Data
- Farms / Layout

PROJECT DEVELOPMENT TRACK

- Permits
- Environmental Issues
- Fabrication & Industrialization
- Installation / Commissioning
- O&M
- Decommissioning
- Asian Projects
- American Projects
- European Projects
- Financial Challenges & PPAs

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Email: iowtc@seatoskymeetings.com

www.iowtc2018.com



Technical Tour: Friday, June 22



Technical Tour to CEHIPAR Ocean Basin and Visit to Segovia

Registration: Pre-purchased tickets for the tour are provided with your name badge. Additional tickets will be for sale at the Registration Desk if space is still available.

Technical Tour Ticket: €105 (includes lunch)

Half-day Segovia Tour Ticket: €95 (includes lunch at same restaurant with the Technical Tour group) – Enquire at the Registration Desk for more details about the half-day tour.

Technical Tour Departure: 08:30 from Group Reception Entrance of the Marriott

Half-day Segovia Tour Departure: 11:15 from Group Reception Entrance of the Marriott

Approximate Return Time: 18:00

The Technical Tour for OMAE 2018 combines industry expertise and sightseeing together in one full day. Join us for a full-day tour that begins with a visit to the CEHIPAR ocean basin, an internationally recognized hydrodynamic center for model tests, projects and research, and one of the largest basins in the world.

After the morning visit to CEHIPAR, you will stop for lunch in El Pardo at Restaurante El Torreón, situated high on the hills of Monte de El Pardo. Enjoy a three-course meal amongst

the oak forests and be treated to panoramic views of the surrounding countryside.

After lunch, the group will embark on a half-day tour of Segovia, a historic city to the northwest of Madrid and a UNESCO World Heritage site. Segovia is famous for its picturesque setting amongst the plains of Old Castile in the autonomous region of Castile and León. During the tour of Segovia, attendees will see a variety of sites including one of the best preserved Roman Aqueducts, believed to have been built during the 1st Century AD, and the Segovia Cathedral whose 90-metre-high bell towers can be seen towering over the town. Built in the mid-16th Century, the Segovia Cathedral is dedicated to the Virgin Mary and is one of the last Gothic temples to be built in Europe. Other stops include the Alcázar Castle with its ship like shape, and a walk through a genuine Jewish Quarter, where attendees will learn about the days of the Spanish Inquisition when the Jewish families living in Segovia were forced to abandon their homes.

Technical tour attendees – **remember to bring your PASSPORT with you.**



PIV system in action in the calm water tank



Towing test experiment in the calm water tank



CNC machine milling a mould



Experiment in waves in the ocean basin

Photos courtesy of CEHIPAR

12th Annual Outreach for Engineers Specialty Forum

“I have learned a lot on so many levels and I am so thankful to the Committee for having granted me a scholarship for this event. The forum has given me great insights on what working in industry could represent and thanks to that I am now considering new stimulating options for my future career.”

—Comment from an Outreach attendee.

Overview

The Ocean, Offshore and Arctic Engineering Division (OOAE) of ASME is hosting a specialty forum at the 2018 International Conference on Ocean, Offshore and Arctic Engineering (OMAЕ) in Madrid, Spain. The specialty forum is designed for students and early professionals who may not be familiar with the industry as well as those who have already specialized in this area.

This is the twelfth year of the Outreach for Engineers Forum. Highlights of the Forum will include presentations of the various technologies required (e.g. from ocean and/or offshore engineering, civil engineering, petroleum engineering, aerospace engineering, mechanical/structural engineering and project management), types of job opportunities, possible career paths and a team building activity. As each year is different, a site tour or job fair may be included.

In addition, Outreach for Engineers Specialty Forum delegates will be provided with the opportunity to participate at OMAE 2018 as full conference delegates. This conference will showcase over 900 technical papers from engineers and scientists from around the world, with 13 Symposia representing the range of technologies.

Attendee Profile

- Senior Undergraduate Students enrolled in Engineering or Science Curricula
- Graduate Students (both Master and Doctoral levels) with specialization in fields such as ocean and/or offshore engineering, civil engineering, mechanical engineering, petroleum engineering, and aerospace engineering
- Early professionals with an interest in the oil & gas industry and ocean, offshore & arctic engineering

Scholarships

Through funding provided by the OOAE Division of ASME and corporate sponsors, the organizers of the Outreach to Engineers Specialty Forum will be offering scholarships to cover registration costs and a limited number of travel subsidies. The scholarships are open to students and early professionals from around the world. If you qualify and have not been a recipient yet, please feel free to apply for OMAE 2019 on the conference website.

Sponsored by Repsol



Conference Schedule with Outreach Events

Date	Event	Time	Location
Saturday, June 16	Outreach Team Building Exercise	17:00 – 19:00	Dusseldorf
Saturday, June 16	Outreach Welcome Dinner	19:00	Off-site
Sunday, June 17	Outreach Welcome & Introductions Plus Industry Presentations	08:30 – 17:00	Estrasburgo
	OMAЕ 2018 Conference Registration	13:00 – 20:00	Italy-Germany Gallery
	OMAЕ 2018 Conference Welcome Reception	19:00 – 20:30	Venecia / Milán / Roma
Monday, June 18	OMAЕ 2018 Conference	See detailed program for session locations and times.	
Tuesday, June 19	OMAЕ 2018 Conference	See detailed program for session locations and times.	
Wednesday, June 20	OMAЕ 2018 Conference	See detailed program for session locations and times.	
	OMAЕ 2018 Conference Banquet	20:00 – 24:00	Palacio del Negralejo
Thursday, June 21	Outreach Breakfast / Feedback Session	07:30 – 10:00	Paris
	OMAЕ 2018 Conference	See detailed program for session locations and times.	
Friday, June 22	OMAЕ Technical Tour (Optional)	See Technical Tour on page 94 for locations and times.	

Note: Outreach only events are bolded.



Prof. Atilla Incecik

Invitation to OMAE 2019

I am very pleased to extend an invitation to you to join the 38th International Conference on Ocean, Offshore and Arctic Engineering (OMAE 2019) in Glasgow, Scotland, UK, June, 9 – 14, 2019.

Glasgow is the hub of the UK's shipbuilding industry

The offshore oil and gas industry in the UK has grown and evolved over the last 60 years and last year capital investment in the industry was £5.6 billion. The industry also spent £7 billion operating its assets. Over 300,000 jobs in the UK continue to be supported by oil and gas production and the oil and gas industry services domestic activities and exports £12 billion of goods and services to other offshore oil and gas basins around the world. Oil and gas provide more than 75% of the UK's total primary energy and the UK Continental Shelf provides more than half of the UK's oil and gas demand.

The UK has the largest installation programme for offshore wind turbines and marine renewable energy devices, with many of the largest offshore renewable companies located in and around Glasgow. The Offshore Renewable Energy Catapult centre funded by the UK Government is based in the Strathclyde University Campus in Glasgow.

All the major classification societies have branches in Glasgow, and many marine and offshore engineering consultancy companies also have offices in Glasgow. Glasgow houses the second highest number of ship management companies after London, and has the largest shipyard in the UK, BAE Systems. Babcock has the UK's largest engineering dockyard facilities in Rosyth, only 45 minutes from Glasgow. A large number of modules of the two new aircraft carriers for the Royal Navy are built in two of BAE Systems shipyards in Glasgow and are assembled in Babcock in Rosyth. In summary, Glasgow remains the hub of the UK's shipbuilding industry.

Glasgow is one of the world's top ten must see cities

Glasgow is a port city on the River Clyde in Scotland's western Lowlands. It is famed for its Victorian and reformist architecture, a rich legacy of the city's 18th-to-20th-Century prosperity due to trade and shipbuilding. Glasgow was named one of the world's *top ten must see cities* in 2014 by various publications including Rough Guide, Fodors, The Guardian, Telegraph and Wanderlust. Glasgow was voted 'Friendliest City in the World' in Rough Guide 2014. There are over 20 museums and galleries in Glasgow, which is home to the Scottish Opera, the Royal Scottish National Orchestra, the BBC Scottish Symphony Orchestra and the Scottish Ballet. There are over 90 parks and several golf courses.

Your host – Department of Naval Architecture, Ocean and Marine Engineering, University of Glasgow

OMAE 2019 will be hosted by the Department of Naval Architecture, Ocean and Marine Engineering at the University of Glasgow which is one of the premier providers of teaching and research in marine technology. Established in 1883, the Department is one of the oldest Naval Architecture Departments in the world, and it has strong links with the maritime and offshore industry in the UK and worldwide in research, education and knowledge exchange activities related to marine and offshore hydrodynamics, ship stability and safety, marine and offshore structures, offshore engineering, marine and offshore structures, marine renewable energy, marine engineering and emerging technologies.

The conference programme includes visits to BAE Systems shipyard in Glasgow, the Falkirk Wheel and a Wind Farm.

I am very much looking forward you welcoming you to OMAE 2019 in Glasgow.

—Professor Atilla Incecik
Conference Chair, OMAE 2019
Professor of Offshore Engineering
Associate Principal and Executive Dean
of the Faculty of Engineering
University of Strathclyde, UK

OMAE



2019

Glasgow



38th

International
Conference on
Ocean, Offshore and
Arctic Engineering

Glasgow, Scotland
June 9–14, 2019

**ABSTRACT
SUBMISSION DATE:**
October 15, 2018



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#OMAE2019



OMAE 2019 Glasgow Call for Papers

We welcome you to the 38th ASME International Conference on Ocean, Offshore and Arctic Engineering (OMAE 2019) to be held in Glasgow, Scotland from June 9-14, 2019.

Abstract Submission is now open!

Please visit the OMAE 2019 conference website (www.asme.org/events/omae) to view the conference details. Following OMAE 2018, we anticipate another successful conference showcasing the excellent technical content that OMAE has become known for internationally.

Abstract/Paper Submission Guidelines

Authors should submit a title/abstract to begin the paper submission process. Prior to the date noted below, authors should then submit full-length manuscripts for peer review. Draft manuscripts and final-paper submissions must conform to ASME publication guidelines.

Important Dates and Information

- **Monday, October 15, 2018 – Deadline for Abstract Submission**
NOTE: Abstracts submitted to individual topics will be automatically accepted by the system and assigned a paper number. Submission of the draft paper should begin immediately upon submission of your abstract.
- **Monday, December 17, 2018 – Full-length Draft Paper Submission**
- **Monday, February 4, 2019 – Notification of Paper Acceptance / Rejection**
- **Monday, March 25, 2019 – Final Paper Submission**

For the full publications schedule and to submit your Abstract and Draft Paper, please visit www.asme.org/events/omae.

PLEASE NOTE THAT THESE DEADLINES ARE FIRM AND WILL NOT BE EXTENDED. Due to the tremendous success of the OMAE conferences, the number of papers has increased steadily over the years hence we need to uphold firm deadlines to ensure proper management of the review and publication process. Your cooperation in adhering to the publication schedule and making OMAE 2019 a success will be greatly appreciated.

We ask that you return home from OMAE 2018 and start working on your Abstract and Full-length Draft Paper soon! We look forward to your contribution to a very successful OMAE 2019.

Sincerely,

Professor Atilla Incecik
Conference Chair, OMAE 2019
Professor of Offshore Engineering
Associate Principal and Executive Dean
of the Faculty of Engineering
University of Strathclyde, UK

Professor Krish Thiagarajan Sharman
OMAE 2019 Technical Chair
OOAE Executive Division Chair
Endowed Chair in Renewable Energy and Professor,
Department of Mechanical and Industrial Engineering,
University of Massachusetts Amherst

**To submit your abstract, visit:
www.asme.org/events/omae**

Listing of Committees & Organizers

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Dr. Antonio Souto-Iglesias,
Conference Chair
Dr. Solomon C. Yim,
Technical Program Chair

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The Conference Organizing Committee would like to express their gratitude to all the OMAE 2018 volunteers. We sincerely appreciate all the support they provide!

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Symposium Coordinator: R. Cengiz Ertekin,
Harbin University

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Symposium Coordinators: Carlos Guedes Soares, *Instituto Superior Técnico, University of Lisbon*

SYMP 3: Materials Technology

Symposium Coordinator: Mamdouh Salama,
Conoco Phillips Company

SYMP 4: Pipelines, Risers, and Subsea Systems

Symposium Coordinators: Theodoro A. Netto, *UFRJ*; Duane DeGeer, *INTECSEA*

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Symposium Coordinators: Tomoki Ikoma, *Nihon University*; Dominique Roddier, *Principle Power*

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Symposium Coordinators: Jon Mikkelsen, *University of British Columbia*; Solomon Yim, *Oregon State University*

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Symposium Coordinators: Walter Kuehnlein, *sea2ice Ltd. & Co. KG*; Sören Ehlers, *Technical University of Hamburg*

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Symposium Coordinators: Krish Thiagarajan Sharman, *University of Massachusetts Amherst*; Charles Smith, *Consulting*

SYMP 10: Offshore Geotechnics

Symposium Co-Coordinator: Horst Brandes, *University of Hawaii at Manoa*

SYMP 11: Petroleum Technology

Symposium Coordinator: Andrew Wojtanowicz, *Louisiana State University*

SYMP 12: Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

Symposium Coordinators: Yordan Garbatov, *University of Lisbon*; Antonio Souto-Iglesias, *Universidad Politécnica de Madrid (UPM)*

SYMP 13: Honoring Symposium for Professor Bernard Molin on Marine and Offshore Hydrodynamics

Symposium Coordinators: Yves-Marie Scolan, *ENSTA Bretagne*; Pierre Ferrant, *École Centrale de Nantes, LHEEA Lab. (ECN/ CNRS)*

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1-2: Station Keeping: Allan Ross Magee, *National University of Singapore*

1-3: Hydrodynamics: Longbin Tao, *University of Strathclyde*

1-4: Design & Analysis: Olaf Waals, *MARIN*; Masoud Hayatdavoodi, *University of Dundee*

1-5: FLNG Technology: Wenhua Zhao, *University of Western Australia*

1-6: CFD Modeling Practice & Verification: Zhenjia Huang, *Exxonmobil Upstream Research Company*; Jang Kim, *TechnipFMC*; Guangyu Wu, *Chevron*

1-7: Wave Loading and Motions in Extreme Seas: Nuno Fonseca, *SINTEF Ocean*

SYMP 2: Structures, Safety and Reliability

2-1: Abnormal or Rogue Waves: Alexander V. Babanin, *University of Melbourne*; Elzbieta M. Bitner-Gregersen, *DNV GL AS*

2-2: Probabilistic and Spectral Wave Models: Carlos Guedes Soares, *Instituto Superior Técnico, Universidade de Lisboa*; Felice Arena, *University Mediterranea*

2-3: Probabilistic Response Models: Lance Manuel, *University of Texas at Austin*

2-4: Fatigue and Fracture Reliability: Yordan Garbatov, *University of Lisbon*

2-5: Reliability of Marine Structures: Carlos Guedes Soares, *Instituto Superior Técnico, Universidade de Lisboa*; Srinivas Srinamula, *University of Aberdeen*

2-6: Well Integrity and Reliability Assessment: Max Russo, *Kongsberg Maritime*; Guttorm Grytoyr, *Statoil*

2-7: Reliability of Mooring and Riser Systems: Ying Min Low, *National University of Singapore*; Luis V. S. Sagrilo, *Coppe/Federal University of Rio De Janeiro*

2-8: Reliability of Renewable Energy Systems: Zhen Gao, *Norwegian University of Science and Technology*; John Sorensen, *Aalborg University*

2-9: Extreme Loading and Responses: Carlos Guedes Soares, *Instituto Superior Técnico, Universidade de Lisboa*; Srinivas Srinamula, *University of Aberdeen*

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2-12: Structural Analysis and Optimization: Jonas W. Ringsberg, *Chalmers University of Technology*; Paulo Videiro, *UFRJ*

2-13: Risk Analysis and Management: Marcelo Ramos Martins, *University of Sao Paulo*; Ângelo Teixeira, *Centre for Marine Technology and Ocean Engineering (CENTEC)/Instituto Superior Técnico*

2-14: Risk Based Maintenance: Bernt Leira, *NTNU*; Nianzhong Chen, *Harbin Engineering University*

SYMP 3: Materials Technology

3-1: Fracture Assessment - Analytical methods: Xin Wang, *Carleton University*

3-2: Fatigue Performance and Improvement: Carol Johnston, *TWI Ltd*

3-3: Fatigue and Fracture assessment: Koji Gotoh, *Kyushu University*

3-4: Fatigue and fracture performance in corrosive environments: Pedro Vargas, *Chevron Energy Technology Company*

3-5: Materials Selection & Performance for Arctic Application: Agnes Marie Horn, *DNV GL*

3-6: Impact of Steel and Construction Technologies on Structural Integrity: Shuwen Wen, *University of Leicester*

3-7: Inspection Methods and Application of Data Analytics: Sheng Bao, *Zhejiang University*

3-8: Advances in Life Extension Analysis: Jens Tronskar, *Det Norske Veritas Pte Ltd*

3-9: Engineering Critical Assessment - Guidelines and Applications: Yanhui Zhang, *TWI Limited*

3-10: Application and Integrity of High Strength Steels: Alex Stacey, *Offshore Safety Division, Health & Safety Executive*; Gerhard Ersdal, *Petroleum Safety Authority*

3-11: Structural Integrity Management Standards and Calibration: Gerhard Ersdal, *Petroleum Safety Authority*; Alex Stacey, *Offshore Safety Division; Health & Safety Executive*; Morten Langøy, *Petroleum Safety Authority*

SYMP 4: Pipelines, Risers, and Subsea Systems

- 4-1:** Flexible Pipes and Umbilicals: Zhimin Tan, *BHGE, Wellstream*; Svein Saevik, *NTNU*
4-2: Rigid Risers: Basim Mekha, *Cuneiform Offshore Consulting, LLC*; Olav Fyrileiv, *DNVGL*
4-3: Rigid Pipelines: Julian Hallai, *ExxonMobil*; Theodoro Netto, *UFRJ*
4-4: Subsea Structures and Equipment: Duane Degeer, *Intecsea Engineering*; Ana Paula Souza, *COPPE/UFRJ*
4-5: Flow Assurance: Celso K. Morooka, *University of Campinas/Faculty of Mechanical Engineering/Center for Petroleum Studies*; Arturo Ortega, *Universidad Nacional de Ingeniería (UNI)*
4-6: Innovative Technologies for Deepwater Low-Cost Production: Segen Estefen, *COPPE/UFRJ*; Menglan Duan, *China University of Petroleum (Beijing)*

SYMP 5: Ocean Space Utilization

- 5-1:** New Concepts for Ocean Space Utilization: Kazuhiro Iijima, *Dept of NAOE, Osaka University*; Bai Wai, *National University of Singapore*
5-2: Aquaculture and Related Technology: Pål Furset Lader, *Norwegian University of Science and Technology*; Shixiao Fu, *Shanghai Jiao Tong University*
5-3: Deepsea Mining and Ocean Resources: Sotaro Masanobu, *National Maritime Research Institute of Japan*
5-4: Underwater Development and Technology: Tomoya Inoue, *JAMSTEC*
5-5: Floating Systems for Renewable Energy: Motohiko Murai, *Yokohama National University*
5-6: High Tide and Tsunamis: Koichi Masuda, *Nihon University*; Koji Takahashi, *Japan Port Consultants, Ltd.*
5-7: Environmental Assessment for Marine Renewable Energy: Daisuke Kitazawa, *Institute of Industrial Science, University of Tokyo*
5-8: Utilization of Seawater: TBA
5-9: Coastal Zone Management: Shigeru Tabet, *University of Tokyo*

SYMP 6: Ocean Engineering

- 6-1:** Advanced Ship Hydromechanics and Marine Technology: Sanne van Essen, *MARIN*; Ye Li, *Shanghai Jiaotong University*; Jeffrey Falzarano, *Texas A&M University*
6-2: Wave Mechanics and Wave Effects: Kostas Belibassakis, *National Technical University of Athens*; Simen Ellingsen, *Norwegian University of Science and Technology*; Solomon Yim, *Oregon State University*
6-3: Model Tests: P. Krishnankutty, *Indian Institute of Technology Madras*; David Molyneux, *Memorial University of Newfoundland*
6-4: Towed and Undersea Cables and Pipes, Mooring, and Buoy Technology: TBA
6-5: Advanced Underwater Vehicles and Design Technology: TBA

- 6-6:** Unsteady Hydrodynamics, Vibrations, Acoustics and Propulsion: Mohammad Rahmati, *Northumbria University*; Jon Mikkelsen, *University of British Columbia*
6-7: Computational Mechanics and Design Applications: Wei Qiu, *Memorial University of Newfoundland*; Antonio Carlos Fernandes, *UFRJ*
6-8: Fluid-Structure, Multi-Body and Wave-Body Interaction: Torgeir Kirkhorn Vada, *DNV GL*; Pierre Ferrant, *École Centrale de Nantes, LHEEA Lab. (ECN/CNRS)*
6-9: Marine Environment and Very Large Structures: Muk Chen Ong, *University of Stavanger*; Shuzheng Sun, *Harbin Engineering University*; Lin Li, *University of Stavanger*
6-10: Offshore Industry: Aquaculture, Mining, etc.: Muk Chen Ong, *University of Stavanger*; Lin Li, *University of Stavanger*; Shuzheng Sun, *Harbin Engineering University*
6-11: Offshore Industry: Structures and Design: TBA
6-12: Ocean Engineering Technology: Jon Mikkelsen, *University of British Columbia*
6-13: Metocean: Gus Jeans, *Oceanalysis Ltd*
6-14: Coastal Engineering: Kuang-An Chang, *Texas A&M University*; Mohammad-Reza Alam, *University of California, Berkeley*
6-15: Advanced Underwater Vehicles and Design Technology Workshop: José-Fernán Martínez-Ortega, *Universidad Politécnica de Madrid*; Raul Mario del Toro Matamoros, *Universidad Politécnica de Madrid*; Pedro Castillejo, *Universidad Politécnica de Madrid*

SYMP 7: Polar and Arctic Sciences and Technology

- 7-1:** Arctic Frontier Regions: Sören Ehlers, *Technical University of Hamburg*; Walter Kuehnlein, *sea2ice*
7-2: Arctic Sea Transportation: Sören Ehlers, *Technical University of Hamburg*; Walter Kuehnlein, *sea2ice*
7-3: Structures in Ice: Sören Ehlers, *Technical University of Hamburg*; Walter Kuehnlein, *sea2ice*
7-4: Vessels in Ice including Maneuvering: Sören Ehlers, *Technical University of Hamburg*; Walter Kuehnlein, *sea2ice*
7-5: Full Scale Measurements and Ice Model Tests: Walter Kuehnlein, *sea2ice*; Sören Ehlers, *Technical University of Hamburg*
7-6: Ice Management and Operations in Ice & Evacuation in Ice: Walter Kuehnlein, *sea2ice*; Sören Ehlers, *Technical University of Hamburg*
7-7: Oil Spill Prevention/Recovery, Evacuation and Rescue in Ice: Walter Kuehnlein, *sea2ice*; Sören Ehlers, *Technical University of Hamburg*
7-8: Numerical Ice Modeling including Structure-Ice-Interactions: Sören Ehlers, *Technical University of Hamburg*; Walter Kuehnlein, *sea2ice*
7-9: SKT project: Walter Kuehnlein, *sea2ice*; Sören Ehlers, *Technical University of Hamburg*

SYMP 8: CFD and FS1

- 8-1:** Ship & Floating Systems: Stephen Cosgrove, *Altair*; Sam Holmes, *RedWing Eng*; Rajeev Kumar Jaiman, *National University of Singapore*
8-2: Free Surface Flows: Hans Bihs, *NTNU Trondheim*; Tim Bunnik, *MARIN*
8-3: Risers & Pipelines: Michael Tognarelli, *BP American Production Co.*; Partha Sharma, *DNV*; Rene Gabbai, *Pratt and Whitney*; Madhusuden Agrawal, *BP*; Aravind Nair, *DNV GL*; Mike Campbell, *2H Offshore Inc.*
8-4: VIV Physics & Suppression: Muk Chen Ong, *University of Stavanger*; Jie Wu, *SINTEF Ocean*; Jungao Wang, *University of Stavanger*
8-5: Advanced Computation - Hardware: Guilherme Vaz, *MARIN*
8-6: Advanced Computation - Software: Guilherme Vaz, *MARIN*
8-7: Advanced Computation - Verification, Validation and Best Practices: Guilherme Vaz, *MARIN*; Luis Eca, *IST*
8-8: Advanced Computation - Optimization, Big Data, Machine Learning: Rajeev Kumar Jaiman, *National University of Singapore*

SYMP 9: Ocean Renewable Energy

- 9-1:** Wind Energy – Concepts, Design and Analysis: Erin Bachynski, *NTNU*; Tonio Sant, *Dept of Mechanical Engineering, University of Malta*
9-2: Wind Energy – Applications and Operations: Amy Robertson, *NREL*; Maurizio Collu, *Cranfield University*
9-3: Wave Energy – Concepts, Design and Analysis: Yi-Hsiang Yu, *National Renewable Energy Laboratory (NREL)*; Annie Dallman, *Sandia National Laboratories*
9-4: Wave Energy – Applications and Operations: Kelley Ruehl, *Sandia National Laboratories*; Masoud Hayatdavoodi, *University of Dundee*
9-5: Current Energy – Concepts, Design, Analysis and Applications: Madjid Karimirad, *Queen's University Belfast*; Marc Cahay, *TechnipFMC*
9-6: Ocean Renewable Energy – Thermal, Hybrid and Others: Pasquale Dinoi, *Oceantec Marine Energy*; Claudie Benoit, *Bureau Veritas*

SYMP 10: Offshore Geotechnics

- 10-1:** Seabed Interaction, Processes and Properties: Dongsheng Qiao, *Dalian University of Technology*
10-2: Anchors I: Ogul Doygun, *University of Hawaii*
10-3: Pile Foundations I: Gudmund Eiksund, *NTNU*
10-4: Pile Foundations II: Manuela Kanitz, *Hamburg University of Technology*
10-5: Bucket Foundations and Suction Caissons: Run Liu, *Tianjin University*
10-6: Spudcans and Shallow Foundations: Xiaowei Feng, *University of Western Australia*
10-7: Pipelines: Yuzhu Li, *University of Stavanger*

10-8: Anchors II: Horst Brandes, *University of Hawaii At Manoa*

SYMP 11: Petroleum Technology

11-1: General Petroleum Technology: Stephen Butt, *Memorial University of Newfoundland*; Mohammad Aziz Rahman, *Texas A&M University at Qatar*

11-2: Drilling Mechanics: Jorge H B Sampaio Jr, *Colorado School of Mines*

11-3: Inflow control technology in reservoir management: Bernt Aadnoy, *University of Stavanger*

11-4: Integrity of Well Barriers: Jan David Ytrehus, *SINTEF*

11-5: Petroleum Production Systems Design and Operation: Celso K. Morooka, *University of Campinas/Faculty of Mechanical Engineering/Center for Petroleum Studies*; Sergio Bordalo, *Unicamp - University of Campinas*

11-6: Well Drilling Fluids and Hydraulics: Ergun Kuru, *University of Alberta*; Vassilios Kelessidis, *Khalifa University of Science and Technology*

11-7: Well Plugging and Abandonment: Babak Akbari, *Louisiana State University*; Mahmoud Khalifeh, *UIS*

11-8: Innovations in Drilling, Production and Transport: Wenting Qin, *Chongqing University of Science and Technology*; Ming Feng, *Chongqing University*

11-9: Managed Pressure Drilling: Yuanhang Chen, *LSU*

11-10: Drilling Geomechanics: Arash Dahi Taleghani, *Pennsylvania State University*

11-11: Human Factors in Oil and Gas Operations: Saeed Salehi, *Mewbourne School of Petroleum and Geological Engineering*; Catalin Teodoriu, *Mewbourne School of Petroleum and Geological Engineering*

SYMP 12: Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering

12-1: Wave Spectral and Probabilistic Models: Sonia Ponce de Leon, *Universidade de Lisboa, Instituto Superior Técnico, Centre for Marine Technology and Ocean Engineering (CENTEC)*; Sofia Caires, *Deltares*

12-2: Floater Dynamics and Hydrodynamics: José Miguel Rodrigues, *SINTEF Ocean*; Antonio Souto-Iglesias, *Universidad Politécnica de Madrid (UPM)*

12-3: Ship Maneuvering and Control: Lokukaluge Prasad Perera, *UiT The Arctic University of Norway*; Xueqian Zhou, *Harbin Engineering University*

12-4: Renewable Energy Offshore: Debabrata Karmakar, *National Institute of Technology Karnataka*; Vincenzo Nava, *Tecnalia R&I*

12-5: Ultimate and Fatigue Strength: Jose Gordo, *University of Lisbon*; Nianzhong Chen, *Harbin Engineering University*

12-6: Collision and Crashworthiness: Richard Villavicencio, *Royal IHC*; Bin Liu, *School of Transportation, Wuhan University of Technology*

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European Safety and Reliability Association	Portugal	Carlos Guedes Soares
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National Association of Corrosion Engineers	USA	
Norwegian Society of Chartered Engineers	Norway	Ketill Borge-Ask
Office of Science and Technology, Australia	Australia	
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Society of Danish Engineers	Denmark	Kristian Smestad
Society of Naval Architects and Marine Engineers	USA	Michael Bernitsas
Society of Naval Architects and Marine Engineers	Taiwan, China	Chang New Chen
Society for Underwater Technology	UK	Ian Gallett
TWI (formerly The Welding Institute)	UK	Carol Johnston

12-7: Structural Reliability and Risk-Based Maintenance: Yordan Garbatov, *University of Lisbon*; Josko Parunov, *University of Zagreb, Faculty of Mechanical Engineering and Naval Architecture*

12-8: Maritime Safety and Human Factors: Ângelo Teixeira, *Centre for Marine Technology and Ocean Engineering (CENTEC)/Instituto Superior Técnico*; Pedro Antão, *Glintt*

12-9: Offshore Structures: João Mendonça Santos, *Principle Power Inc, Portugal*; Manuel Laranjinha, *Wood Group*

SYMP 13: Honoring Symposium for Professor Bernard Molin on Marine and Offshore Hydrodynamics

Pierre Ferrant, *LHEEA Ecole Centrale de Nantes*

Olivier Kimmoun, *Ecole Centrale Marseille*
Yves-Marie Scolan, *ENSTA Bretagne*

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Project Director: Ian Holliday

Project Manager: Bernadette Gessler

Registration Manager: Christina Gonzalez
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PAST & FUTURE CONFERENCES

Past Conferences



1982 New Orleans, USA
 1983 Houston, USA
 1984 New Orleans, USA
 1985 Dallas, USA
 1987 Houston, USA
 1988 Houston, USA



1986
 Tokyo, Japan



1989
 The Hague,
 Netherlands



Jin S. Chung
 Chair 1982–1989



Hisaaki Maeda
 Co-chair
 1986

Virgil Lunardini
 Co-chair
 1984 & 1985



1990
 Houston, USA



1991
 Stavanger, Norway



1992
 Calgary, Canada



1993
 Glasgow, U.K.



Mamdouh Salama
 Chair, 1990–1991



Bjorn Lian
 Co-chair



M. Idris Mansor
 Chair

R. Brawn
 Co-chair



Geoff Booth
 Chair



1994
 Houston, USA



1995
 Copenhagen,
 Denmark



1996
 Florence, Italy



1997
 Yokohama, Japan



James N. Brekke
 Chair



Christian Aage
 Chair



Daniela Mercati
 Chair



Hisaaki Maeda
 Chair



Koichiro Yoshida
 Co-chair



1998
 Lisbon, Portugal



1999
 St. John's, Canada



2000
 New Orleans, USA



2001
 Rio de Janeiro, Brazil



Carlos Guedes Soares
 Chair



Stephen Jones
 Chair



Terry Jones (1934–2005)
 Chair



Segen Farid Estefen
 Chair



2002
 Oslo, Norway



2003
 Cancun, Mexico



2004
 Vancouver, Canada



2005
 Halkidiki, Greece



Arvid Naess
 Chair



Oscar Valle Molina
 Chair



Sander Calisal
 Chair



Jon Mikkelsen
 Co-chair




Spyros A. Mavrakos
 Chair



Michael M. Bernitsas
 Co-chair

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 **2006**
Hamburg, Germany

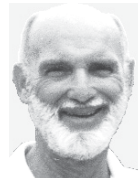


Walter L. Kuehnlein
Chair

 **2007**
San Diego, USA



John Halkyard
Chair



Richard Seymour
Co-chair




Barbara Fletcher
Co-chair

 **2008**
Estoril, Portugal



Carlos Guedes Soares
Chair

 **2009**
Honolulu, USA



R. Cengiz Ertekin
Chair



H. Ronald Riggs
Co-chair

 **2010**
Shanghai, China



Gang Chen
Chair



Jianmin Yang
Co-chair

 **2011**
Rotterdam,
Netherlands



Bas Buchner
Chair

 **2012**
Rio de Janeiro, Brazil



Segen F. Estefen
Chair



Antonio C. Fernandes
Co-chair

 **2013**
Nantes, France



Pierre Ferrant
Chair


 **2014**
San Francisco, USA



Ronald W. Yeung
Chair



Dominique Roddier
Co-chair


 **2015**
St. John's, Canada



Wei Qiu
Chair



Charles Smith
Co-chair

 **2016**
Busan, South Korea



Jeom Kee Paik
Chair

 **2017**
Trondheim, Norway




Bernt J. Leira
Chair



Atle Minsaas
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4-6-1	Innovative Technologies for Deepwater Low-Cost Production	Thursday June 21

Ocean Space Utilization

5-1-1	New Concepts for Ocean Space Utilization	Tuesday June 19
5-2-1	Aquaculture Structures in Waves and Current	Tuesday June 19
5-2-2	Aquaculture Technology I	Tuesday June 19
5-2-3	Aquaculture Technology II	Tuesday June 19
5-3-1	Deepsea Mining and Underwater Technology	Wednesday June 20
5-5-1	Floating Offshore Wind Turbine	Wednesday June 20
5-5-2	Wave Energy Converter and Others	Wednesday June 20
5-6-1	Behaviours of Structure in Tsunami and Port Management	Wednesday June 20
5-7-1	Environmental Assessment for Marine Renewable Energy	Thursday June 21
5-9-1	Coastal Zone Utilization and Management	Thursday June 21

Ocean Engineering

6-1-1	Manoeuvring	Tuesday June 19
6-1-2	Powering	Thursday June 21
6-1-4	Seakeeping - Motions and Added Resistance in Waves	Thursday June 21
6-1-5	Seakeeping - Parametric Roll and Error Statistics	Thursday June 21
6-2-1	Wave-structure Interactions I	Wednesday June 20
6-2-2	Nonlinear and Extreme Waves, Waves from Wind	Tuesday June 19
6-2-3	Wave-structure Interactions II	Wednesday June 20
6-3-1	Modeling Techniques	Monday June 18
6-3-2	Wave Loads	Thursday June 21
6-3-4	Ship Dynamics	Thursday June 21
6-4-1	Towed and Undersea Cables and Pipes, Mooring, and Buoy Technology	Monday June 18
6-6-1	Unsteady Hydrodynamics Vibrations, Acoustics, and Propulsion	Thursday June 21
6-7-2	Hydrodynamics and Welded Joints	Thursday June 21
6-8-1	Fluid-Structure, Multi-Body and Wave-Body Interaction I	Tuesday June 19
6-8-2	Fluid-Structure, Multi-Body and Wave-Body Interaction II	Wednesday June 20
6-8-3	Fluid-Structure, Multi-Body and Wave-Body Interaction III	Wednesday June 20
6-8-4	Fluid-Structure, Multi-Body and Wave-Body Interaction IV	Thursday June 21
6-8-5	Fluid-Structure, Multi-Body and Wave-Body Interaction V	Thursday June 21
6-9-1	Environment, Aquaculture and Very Large Structures	Thursday June 21
6-12-1	Ocean Engineering Technology I	Tuesday June 19
6-12-2	Ocean Engineering Technology II	Tuesday June 19
6-13-1	Metocean I: Measurement and Modelling of Currents and Solitons	Wednesday June 20
6-13-2	Metocean II: Joint Probability and Environmental Loads	Wednesday June 20
6-13-3	Metocean III: Impact of Cyclones Typhoons or Hurricanes	Wednesday June 20
6-13-4	Metocean IV: Waves and Long Term Climate Trends	Wednesday June 20
6-14-1	Coastal Engineering I	Thursday June 21
6-14-2	Coastal Engineering II	Thursday June 21
6-15-1	Session I Development Methodologies and Novel Designs	Monday June 18
6-15-2	Session II: Embedded Architecture for Robotic Vehicles and Underwater Communication Systems Session III: Sensors, Processing Algorithms, Distributed Platform and Software Architecture	Monday June 18

- 6-15-3 Session IV Dynamic and Kinematic Issues in Robotic Vehicles, Modelling, and Control Tuesday June 19
- 6-15-4 Session IV (cont.) Dynamic and Kinematic Issues in Robotic Vehicles, Modelling, and Control Tuesday June 19
- Polar and Arctic Sciences and Technology**
- 7-2-1 Arctic Sea Transportation Tuesday June 19
- 7-3-1 Structures in Ice Tuesday June 19
- 7-4-1 Vessels in Ice including Manoeuvring Tuesday June 19
- 7-5-1 Full Scale Measurements and Ice Model Tests Tuesday June 19
- 7-6-1 Ice Management and Operations in Ice Wednesday June 20
- 7-8-1 Numerical Ice Modeling I Wednesday June 20
- 7-8-2 Numerical Ice Modeling II Wednesday June 20
- 7-8-3 Numerical Ice Modeling III Wednesday June 20
- 7-9-1 SKT Project I Thursday June 21
- 7-9-2 SKT Project II Thursday June 21
- 7-9-3 SKT Project III Thursday June 21
- CFD and FSI**
- 8-1-1 Maneuvering Tuesday June 19
- 8-1-2 CFD, Waves Tuesday June 19
- 8-1-3 Multi-hull Wednesday June 20
- 8-1-4 Radiation, Cavity Wednesday June 20
- 8-1-5 Application Wednesday June 20
- 8-2-1 Free Surface Loading and Structure Interaction Wednesday June 20
- 8-2-2 Free Surface Modeling Thursday June 21
- 8-2-3 Particle-Based Free Surface Modeling Thursday June 21
- 8-3-1 Risers and Pipelines I Tuesday June 19
- 8-3-2 Risers and Pipelines II Tuesday June 19
- 8-4-1 VIV Physics I Wednesday June 20
- 8-4-2 VIV Physics II Thursday June 21
- 8-4-3 VIV Suppression I Thursday June 21
- 8-6-1 Advanced Computations & Software Development Thursday June 21
- 8-7-1 Verification, Validation and Best Practices Thursday June 21
- 8-8-1 CFD and FSI Opening Session and Keynote on Digitalization and Machine Learning Monday June 18
- 8-8-2 Optimization, Big Data and Machine Learning Monday June 18
- Ocean Renewable Energy**
- 9-1-1 Floating Wind Turbines: Numerical Modelling I Tuesday June 19
- 9-1-2 Floating Wind Turbine Experimental Testing and Validation II Tuesday June 19
- 9-1-4 Floating Wind Turbines: Numerical Modelling II Monday June 18
- 9-1-5 Offshore Wind Turbine Hydrodynamics Wednesday June 20
- 9-1-6 Floating Wind Turbine Experimental Testing and Validation I Tuesday June 19
- 9-2-1 Verification and Validation Monday June 18
- 9-2-2 Numerical and Experimental Studies Wednesday June 20
- 9-2-3 Design/Siting Methods and Analysis I Wednesday June 20
- 9-2-4 Design/Siting Methods and Analysis II Wednesday June 20
- 9-2-6 Installation, O&M, and Case Studies Tuesday June 19
- 9-3-1 Heaving and Pitching Wave Energy Converters Monday June 18
- 9-3-2 Oscillating Water Column Monday June 18
- 9-3-3 Model Development, Verification and Validation Thursday June 21
- 9-3-5 Control and New Design Concept Thursday June 21
- 9-4-1 Analytical, Numerical and Experimental Studies I Thursday June 21
- 9-4-2 Case Studies and Field Tests Tuesday June 19
- 9-4-4 Site Selection, Hybrid Devices and Farms Thursday June 21
- 9-4-5 Analytical, Numerical and Experimental Studies II Tuesday June 19
- 9-5-1 Turbine and Efficiency I Tuesday June 19
- 9-5-2 Turbine and Efficiency II Thursday June 21
- 9-5-3 Design and Resources Tuesday June 19
- 9-6-1 Thermal, Hybrid and Others: Analysis and Design Thursday June 21
- 9-6-2 Thermal, Hybrid and Others: Novel Concepts Thursday June 21
- Offshore Geotechnics**
- 10-1-1 Seabed Interaction, Processes and Properties Wednesday June 20
- 10-2-1 Anchors I Wednesday June 20
- 10-3-1 Pile Foundations I Wednesday June 20
- 10-4-1 Pile Foundations II Thursday June 21
- 10-5-1 Bucket Foundations and Suction Caissons Wednesday June 20
- 10-6-1 Spudcans and Shallow Foundations Thursday June 21
- 10-7-1 Pipelines Thursday June 21
- 10-8-1 Anchors II Thursday June 21
- Petroleum Technology**
- 11-1-1 Multiphase Flow for Offshore Production Thursday June 21
- 11-1-2 Arctic Exploration and Drilling Challenges Wednesday June 20
- 11-1-3 Drilling Technology Evaluation Thursday June 21
- 11-2-1 Drilling Mechanics I Thursday June 21
- 11-3-1 Inflow Control Technology in Reservoir Management Wednesday June 20
- 11-4-1 Integrity of Well Barriers I Thursday June 21
- 11-4-2 Integrity of Well Barriers II Thursday June 21
- 11-5-1 Petroleum Production Systems Design and Operation I Monday June 18
- 11-5-2 Petroleum Production Systems Design and Operation II Thursday June 21
- 11-6-1 Well Drilling Fluids and Hydraulics I Monday June 18
- 11-6-2 Well Drilling Fluids and Hydraulics II Monday June 18
- 11-6-3 Well Drilling-Fluids and Hydraulics III Tuesday June 19
- 11-6-4 Well Fluids and Hydraulics IV Tuesday June 19
- 11-6-5 Well Drilling Fluids and Hydraulics V Wednesday June 20
- 11-6-6 Well Fluids and Hydraulics VI Wednesday June 20
- 11-7-1 Well Plugging and Abandonment Tuesday June 19
- 11-8-1 Innovations in Drilling, Production and Transportation Thursday June 21
- 11-10-1 Drilling Geomechanics Tuesday June 19
- 11-11-1 Human Factor in Oil and Gas Operations Monday June 18
- Honoring Symposium for Professor Carlos Guedes Soares on Marine Technology and Ocean Engineering**
- 12-1-1 Wave Spectral and Probabilistic Models Monday June 18
- 12-1-2 Wave Spectral and Probabilistic Models and Engineering Applications II Tuesday June 19
- 12-1-3 Wave Spectral and Probabilistic Models and Engineering Applications I Monday June 18
- 12-2-1 Floater Dynamics and Hydrodynamics I Wednesday June 20
- 12-2-2 Floater Dynamics and Hydrodynamics II Wednesday June 20
- 12-2-3 Floater Dynamics and Hydrodynamics III Wednesday June 20
- 12-2-4 Floater Dynamics and Hydrodynamics IV Wednesday June 20
- 12-3-1 Ship Maneuvering and Control I Thursday June 21
- 12-3-2 Ship Maneuvering and Control II Thursday June 21
- 12-3-3 Ship Maneuvering and Control III Thursday June 21
- 12-3-4 Ship Maneuvering and Control IV Thursday June 21
- 12-4-1 Renewable Energy Offshore I Tuesday June 19
- 12-4-2 Renewable Energy Offshore II Tuesday June 19
- 12-4-3 Renewable Energy Offshore III Tuesday June 19
- 12-5-1 Ultimate Strength I Monday June 18
- 12-5-2 Ultimate Strength II Wednesday June 20
- 12-5-3 Fatigue Strength Wednesday June 20
- 12-5-4 Structural Integrity and Monitoring Wednesday June 20
- 12-5-5 Ultimate Strength III Wednesday June 20
- 12-6-1 Collision and Crashworthiness I Thursday June 21
- 12-6-2 Collision and Crashworthiness II Thursday June 21
- 12-7-1 Structural Reliability and Risk-Based Maintenance I Tuesday June 19
- 12-7-2 Structural Reliability and Risk-Based Maintenance II Tuesday June 19
- 12-7-3 Structural Reliability and Risk-Based Maintenance III Tuesday June 19
- 12-7-4 Structural Reliability and Risk-Based Maintenance IV Tuesday June 19
- 12-8-1 Maritime Safety and Human Factors I Monday June 18
- 12-9-1 Offshore Floating Structures Thursday June 21
- 12-9-2 Strength of Offshore Structures and Equipment Thursday June 21
- Honoring Symposium for Professor Bernard Molin on Marine and Offshore Hydrodynamics**
- 13-1-1 Wave Body Interaction I Monday June 18
- 13-1-2 Wave Body Interaction II Monday June 18
- 13-1-3 Wave Body Interaction III Tuesday June 19
- 13-3-1 Second-order Loads and Response Tuesday June 19
- 13-4-1 Floating Foundations for Wind Turbines Tuesday June 19
- 13-5-1 Hydroelasticity Tuesday June 19
- 13-7-1 Gap and Moonpool Resonance I Wednesday June 20
- 13-7-2 Gap and Moonpool Resonance II Wednesday June 20
- 13-9-1 Sloshing in Tanks Wednesday June 20
- 13-10-1 Seakeeping Wednesday June 20



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