OMAE 2018

Madrid

37th International Conference on Ocean, Offshore and Arctic Engineering

Madrid, Spain
June 17–22, 2018

Hosted by:

OOAE

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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 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

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

Basque County Presentation
16:00 – 18:00
Marsella

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

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 Extenstion 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, Cavity
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 Hydromechanics, 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 Offhore 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.

Madrid Marriott Auditorium Hotel & Conference Centre

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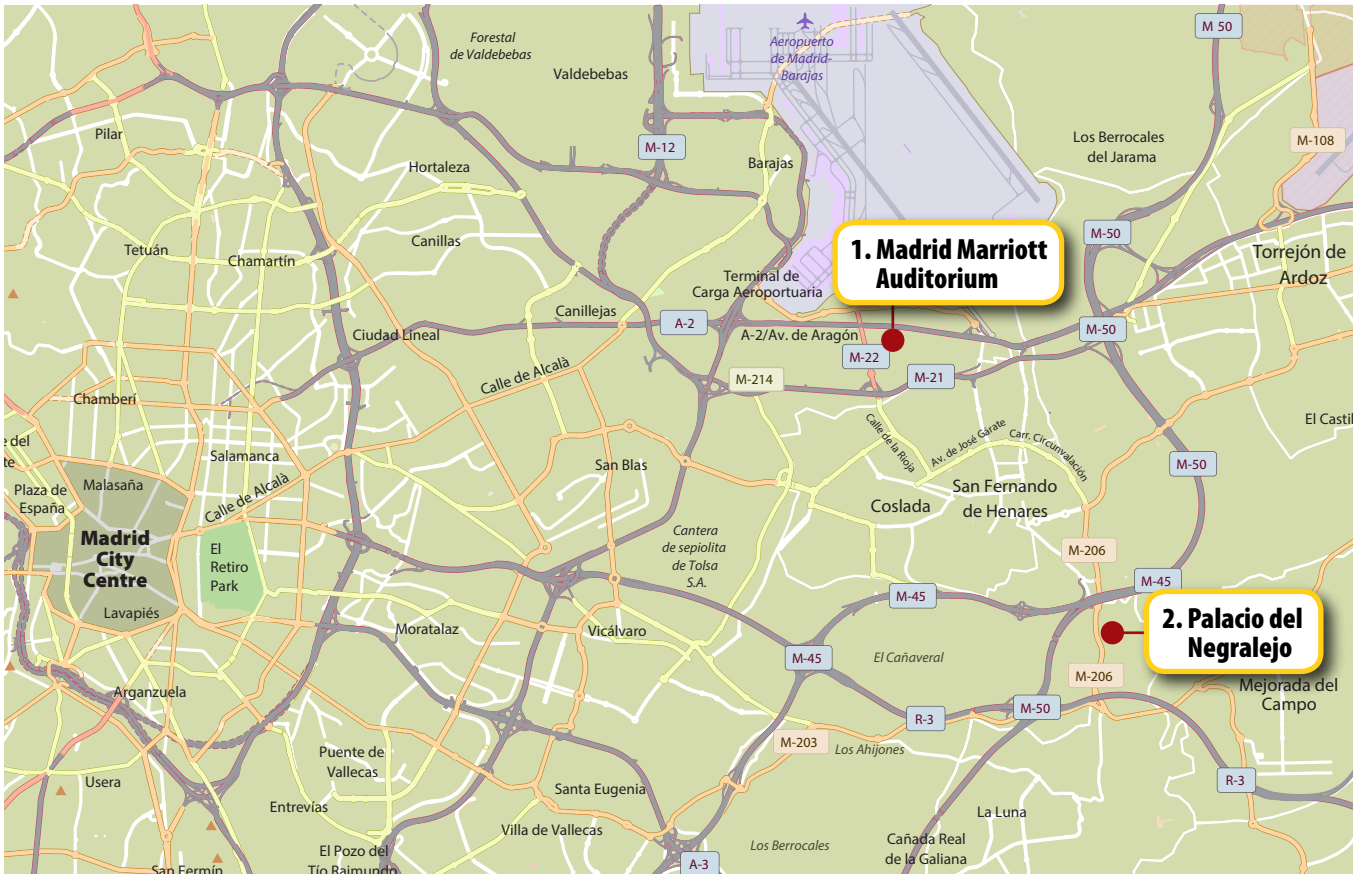
- **Opening Ceremony** (Londres, Bristol, Oxford)
- **Exhibits, Refreshment Breaks, Opening & Farewell Receptions** (Roma, Milán & Venecia)
- **Concurrent Sessions** (various rooms)
- **Lunch** (Buffet Madrid, France-Madrid Gallery, Toulouse, Lyon)

Madrid



1 **Madrid Marriott Auditorium Hotel & Conference Centre**
Avenida de Aragon 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, Artic 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 H_2S Content in the Annulus" by Li Ke, Carol Taravel-Condat, 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…

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.

Social Events

Welcome Reception

Welcome Reception sponsored by Repsol

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.*

Refreshment Breaks

Monday morning's Refreshment Break sponsored by Tubacex Group

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.

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

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

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.

Madrid Marriott Auditorium Hotel & Conference Centre

Conference Banquet

Conference Banquet sponsored by Repsol

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

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 Negrales", 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

Hosted by OMAE 2019

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.

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.


Plaza de Castilla

Sponsors & Exhibitors

HOSTS

Instituto de Hidráulica Ambiental de Cantabria (IHCantabria)
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

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
www.urv.cat

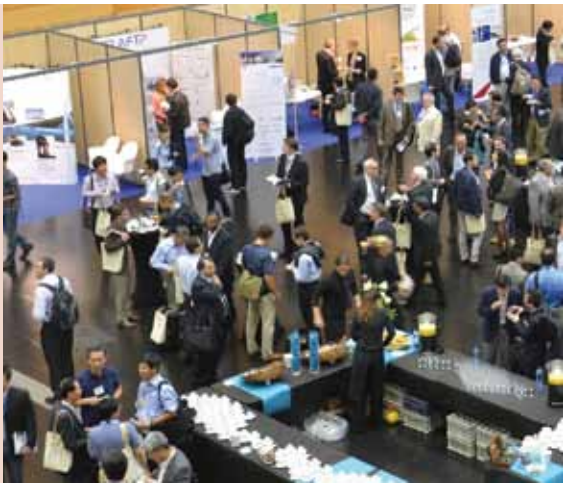
Universitat Rovira i Virgili (URV) is a young and dynamic institution located on the Mediterranean coast of Southern Catalonia. It is the centre of a strategic union of different structures involved in teaching, research and knowledge transfer, all combining at the Campus of International Excellence 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
www.repsol.com

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.

Repsol satisfies growing energy demands sustainably, by applying the most rigorous project planning and execution processes.

SILVER

Oil&Gas Basque Industry
www.clusterenergia.com/oil-gas-4

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.

BRONZE

Tubacex Group
www.tubacex.com

TUBACEX is an industrial Group devoted to manufacturing seamless tubes in stainless steel and high-nickel alloys and superalloys.

The company has its own industrial facilities in Europe, Asia and America, a global distribution network (TSS) as well as sales offices around the world.

The main sectors of activity are Oil&Gas, Power-Generation and Refinery&Petrochemical.

Sponsors (Continued)

SYMPOSIA SPONSORS

SYMP 1: Offshore Technology Symposium
VICINAY MARINE

VICINAY marine
World Class Mooring

SYMP 4: Pipelines, Risers, and Subsea Systems Symposium
Tubacex Group

TUBACEX GROUP

SYMP 9: Ocean Renewable Energy Symposium
Principle Power Inc.

PRINCIPLE POWER

SYMP 12: Professor Carlos Guedes Soares Honoring Symposium
CoreMarine

CoreMarine

SYMP 13: Professor Bernard Molin Honoring Symposium
Bureau Veritas

BUREAU VERITAS

MEDIA SUPPORTERS

Journal of Marine Science and Engineering

Journal of *Marine Science and Engineering*
an Open Access Journal by MDPI

Ship & Offshore

Ship&Offshore

Springer

Springer

Taylor & Francis Group

Taylor & Francis
Taylor & Francis Group

NAME BADGE SPONSOR

Repsol

REPSOL

Exhibitors

ARCWIND.EU
www.centec.tecnico.ulisboa.pt/arcwind

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.

DNV GL
www.dnvgl.com/services/hydrodynamic-and-structural-analysis-sesam-for-floating-structures-2410

Driven by our purpose of safeguarding life, property and the environment, DNV GL enables organizations to advance the safety and sustainability of their business. Operating in more than 100 countries, our professionals are dedicated to helping our customers in the maritime, oil & gas, energy and other industries to make the world safer, smarter and greener. DNV GL is the world-leading provider of software for managing risk and improving asset performance in the energy, process and maritime industries. Our solutions support a variety of business critical activities including design and engineering, risk assessment, asset integrity and optimization, QHSE, and ship management.

Dynamic Systems Analysis Ltd.
www.dsa-ltd.ca

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.

Instituto de Hidráulica Ambiental de Cantabria (IHCantabria)
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.

NUMECA International
www.numeca.com

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.

Oil&Gas Basque Industry
www.clusterenergia.com/oil-gas-4

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Exhibitors (Continued)

Repsol
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Repsol satisfies growing energy demands sustainably, by applying the most rigorous project planning and execution processes.

Siemens PLM Software
www.plm.automation.siemens.com/global/en

Siemens PLM Software, a business unit of the Siemens Digital Factory Division, is a leading global provider of product lifecycle management (PLM) and manufacturing operations management (MOM) software, systems and services. Within Siemens PLM Software, the Simcenter™ solutions portfolio helps engineering departments develop today's smart products. Simcenter uniquely combines system simulation, 3D computer-aided engineering (CAE) and test to help you predict performance across all critical attributes earlier and throughout the entire product lifecycle. By combining physics-based simulations with insights gained from data analytics, Simcenter helps you optimize design and deliver innovations faster and with greater confidence.

Simulaciones y Proyectos, Flow3D
www.flow3d.es

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.

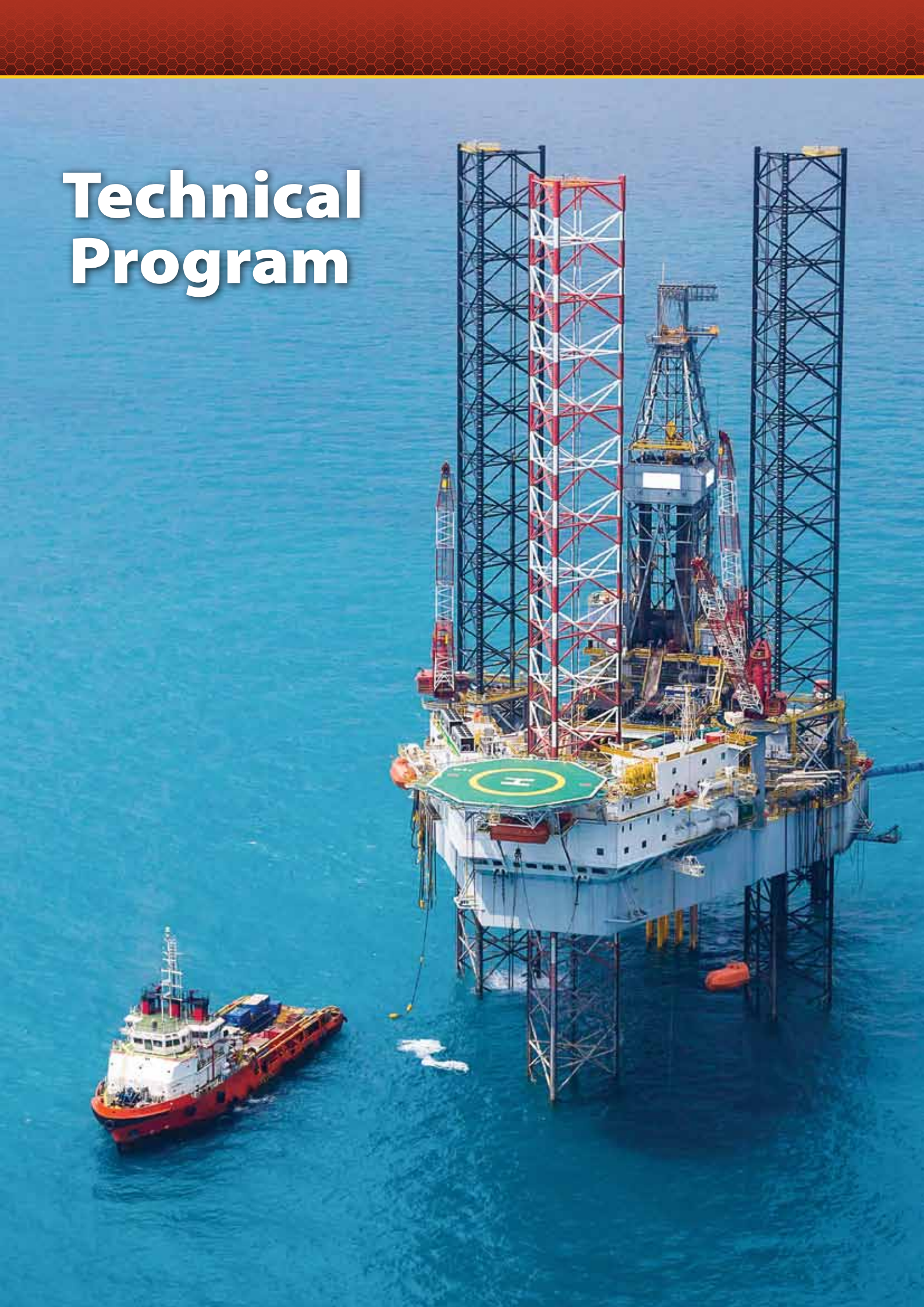
Springer
www.springer.com/engineering/civil+engineering/journal/40722

Springer is a leading global scientific, technical and medical portfolio, providing researchers in academia, scientific institutions and corporate R&D departments with quality content through innovative information, products and services. Springer has one of the strongest STM and HSS eBook collections and archives, as well as a comprehensive range of hybrid and open access journals. Springer is part of Springer Nature - www.springernature.com.

+D (masdediagram s.l.)
www.masde.net

+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

OMAE 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

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 Francais du Petrole (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

Dr. Walter Kuehnlein

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

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

Dr. Yi-Hsiang Yu

Kelley Ruehl

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*

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

Prof. Bernt Johan Leira

Short Course

Dynamics and Vibrations in Offshore Structures

09:00 – 17:30
Location: Munich

Instructors:

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

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

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 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.

Welcome Reception

19:00 – 20:30
Location: Venecia / Milán / Roma

Welcome Reception sponsored by Repsol

REPSOL

See Social Events, pg. 14 for more details.

Monday, June 18

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

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 Corrignan
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 Wang[1] Xin Wang[1] Wai Lok Woo[2]
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 Haselsteiner[1] Jan-Hendrik Ohlendorf[1] Stephan Oelker[1] Lena Ströer[1] Klaus-Dieter Thoben[1] Katharina Wiedemann[2] Emmanuel De Ridder[3] Sven Lehmann[4]
1. University of Bremen, Bremen, Germany; 2. Amasus Offshore BV, GD Delfzijl, Netherlands; 3. Jan de Nul NV, Hofstade-Aalst, Belgium; 4. Senvion 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, Huifen 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 Bakhtiari[1] Hamed Ameryoun[2] Franck Schoefs[1]
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 Guan[1] Knut Erik Knutsen[2] Øystein Åsheim Alnes[2]
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 Babaleye[1] *Rafet E. Kurt*[1] *Mahdi Khorasanchi*[2]
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-Garcia[1] Philippe Darcis[2] Mauricio Pelcastre[3] Enrique Garcia[1] Guangqiang Yang[4] Desmond Bourgeois[4] Tyler Visco[4]

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 Horn[1] Inge Lotsberg[2] Oddvin Orjaseater[3]

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 Drumond[1] Bianca Pinheiro[1] Ilson Pasqualino[1] Francine Roudet[2] Didier Chicot[2]

1. COPPE/UFRJ, Rio de Janeiro, RJ, Brazil; 2. Université Lille 1, Villeneuve d'Asq, 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 Yang[1] Jun Yan[1] Svein Saevik[2] Luqing Zhen[1] Naiquan Ye[3] Jinlong Chen[1] Qianjin Yue[1]

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 Miranda[1] Fred Turner[1] Nigel Barltrop[2]

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/UFRJ, Brazil

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

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

Shan Jin[1] Shuai Yuan[2] Yong Bai[3]

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 Han[1] Soo-Chang Kang[2] Jiwoon Yi[3] Ho-Kyung Kim[1]

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 DeGeer[1] Ping Liu[2] Arjen Meijer[2] Erich Jurdik[3] Jay Chaudhuri[3] Shirley Zhou[2]

1. INTECSEA, Houston, TX, USA; 2. INTECSEA, Delft, Netherlands; 3. South Stream Transport BV, Amsterdam, Netherlands

TurkStream Collapse Test Program OMAE2018-78454

Chris Timms[1] Doug Swanek[1] Duane DeGeer[2] Arjen Meijer[3] Ping Liu[3] Erich Jurdik[4] Jay Chaudhuri[4]

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 Oishi[1] Hiroshi Yamaguchi[1] Kiyoshi Shimada[1] Kouichi Kayajima[2]

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 Wei[1] Longfei Xiao[2] Xin Li[2] Yufeng Kou[2]

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 Wehner[1] Nicolas Richter[1] Pia-Maria Haselberger[1] Marc Schiemann[1] Sebastian Ritz[2] Matthias Golz[2] Florin Boeck[2]
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 Poranen[1] Giancarlo Marafioti[2] Gorm Johansen[2] Eivind Sæter[1]
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 Cermelli[1] Charlotte Leroux[1] Sandra Díaz Domínguez[1] Antoine Peiffer[2]
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 OC5 Phase III OMAE2018-77589
Wojciech Popko[1] *Matthias L. Huhn*[1] *Amy Robertson*[2] *Jason Jonkman*[2] *Fabian Wendt*[3] *Kolja Müller*[4] *Matthias Kretschmer*[5] *Fabian Vorpahl*[6] *Torbjørn Ruud Hagen*[7] *Christos Galinos*[8] *Jean-Baptiste Le Dreff*[9] *Philippe Gilbert*[10] *Bertrand Auriac*[11] *Francisco Navarro Villora*[12] *Paul Schünemann*[13] *Ilmas Bayati*[14] *Marco Belloli*[15] *Sho Oh*[16] *Yoshitaka Totsuka*[17] *Jacob Qvist*[18] *Erin Bachynski*[19] *Stian H. Sørum*[19] *Paul E. Thomassen*[20] *Hyun Kyoung Shin*[21] *Felipe Vittori*[22] *Josean Galvan*[23] *Climent Molins*[24] *Paul Bonnet*[25] *Tjeerd van der Zee*[26] *Roger Bergua*[27] *Kai Wang*[27] *Pengcheng Fu*[28] *Jifeng Cai*[28]
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 Wuillaume[1,2] Aurélien Babarit[1] Francois Rongère[3] Adrien Combourieu[2] Mattias Lynch[2] Pierre Ferrant[1]
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 Serret[1] Carlos Rodriguez[2] Tahsin Tezdogan[3] Tim Stratford[4] Philipp Thies[5]
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 Giorgi[1] *John V. Ringwood*[2]
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 Tay[1] *Yanji Wei*[2] *Antonis I. Vakis*[2]
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, Shaiw-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 Castilho[1] *Ilson Pasqualino*[2] *Alan M. Duarte*[1] *Vinicius de A. Waldow*[3] *Maira P. de Sousa*[3] *Lucy Seldin*[1] *Denise M. G. Freire*[1]
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 Victorino[2] **João C.V. Hohendorff Filho**[2] Denis J. Schiozer[3]
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 Wei[1] Lihui Zheng[1] Mingzheng Yang[2] Yuanhang Chen[2]
1. China University of Petroleum (Beijing), Beijing, China; 2. Louisiana State University, Baton Rouge, LA, USA

Eco-Friendy Drilling Fluid Deflocculant for Drilling High Temperature Well: A Review OMAE2018-78149
Nurul Aimi Ghazali[1] Shigemi Naganawa[2] Yoshihiro Masuda[3] Wan Asma Ibrahim[4] Noor Fitrah Abu Bakar[5]
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 Petersen[1] Milad Khatibi[2] Rune Wiggo Time[2] Hardy Siahaan[1]
1. IRIS, Bergen, Norway; 2. University of Stavanger, Stavanger, Norway

Cuttings Bed Removal in Deviated Wells OMAE2018-77832
Jan David Ytrehus[1] Bjørnar Lund[1] Ali Taghipour[1] Birgitte Ruud Kosberg[2] Knud Richard Gyland[3] Luca Carazza[4] Arild Saasen[5]
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 Santoro[1] Felice Arena[1] Carlos Guedes Soares[2]
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 Leon[1] Joao Bettencourt[2] Gerbrant Van Vledder[3] Patrick Doohan[4] Christopher Higgins[5] Frederic Dias[5] Carlos Guedes Soares[6]
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. Gordo[1] *Carlos Guedes Soares*[2]
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 Romanoff[1] Heikki Remes[1] Petri Varsta[2] Bruno Reinaldo Goncalves[1] Ingrit Lillemäe-Avi[3] Mihkel Korgesaar[4] Jasmin Jelovica[5] Sami Liinalampi[1]
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 Xu[1] **Xiaobin Li**[2] Jin Pan[2] Meng Jia Ren[3] Bo Wen Zhang[3]
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 LI[1] Benjamin Bouscasse[1] Lionel Gentaz[1] Guillaume Ducrozet[2] Pierre Ferrant[2]
1. Ecole Centrale de Nantes, Nantes, France; 2. École 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 Monteserin[1] **Allan P. Engsig-Karup**[2] *Claes Gunnar Eskilsson*[3]
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 Toro[1] *Alfredo Salcines Tudela*[1] *Simon Reid*[2] *Duncan Graham*[2]
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 Lim[1] Manoj Jegannathan[1] Bonjun Koo[2] Johyun Kyoung[1] **Eleni Beyko**[1]
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 Abanades[1] Javier Ivars[1] Rafael Molina[2] Carlos García[1]
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 Leong[1] Ying Min Low[1] Youngkook Kim[2]
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 Zaman[1] Ayhan Akinturk[1] Andrew McGillis[2]
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 Yang[1] Chan Ghee Koh[2] **Ying Min Low**[2] Peter Francis Bernad Adaikalaraj[3]
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 Elosta[1] Atilla Incecik[2]
1. TechnipFMC, Lysaker, Norway; 2. University of Strathclyde, Glasgow, United Kingdom

Microbiologically Influenced Corrosion on Seabed Chain in the North Sea OMAE2018-77460
Øystein Gabrielsen[1] Turid Liengen[2] Solfrid Molid[2]
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 Chae[1] Jongsub Lee[2] Hyunsik Jin[3] Myounghak Oh[4]
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 Chreim[1] Alessandro Alberto de Lima[2] Joao Lucas Dozzi Dantas[3]
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 Castro[1] Terje Birkenes[1] Huib Oosterveld[2]
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 Cho[1] *Jong-Heon Park*[2] *Jung J. Kim*[3]
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 Takahashi[1] Shuichi Yamatoki[1] Tetsuya Namegawa[2]
Masahiko Kinoshita[3] Masaaki Fujioka[2]
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 Keprate[1] *R.M. Chandima Ratnayake*[1] *Shankar Sankararaman*[2]
1. University of Stavanger, Stavanger, Norway; 2. SGT Inc., Moffett Field, CA, USA

Background and New Revision of DNVGL-RP-F108 OMAE2018-78652
Asle Venås[1] Steinar Lindberg Bjerke[1] Steven Chong[2] Jens Petter Tronskar[2]
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 Connaire[1] Ruairi Nestor[1] Krassimir Doynov[2] Venkat Krishnan[3]
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 Jin[1] Shuai Yuan[2] Ting Liu[2] Peihua Han[2] Yong Bai[3]
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 Toni[1] Eduardo Ribeiro Malta[1]
Clovis Martins[1] Rafael Morini[2] Andre Freitas[3]
1. University of Sao Paulo, Sao Paulo, SP, Brazil; 2. Prysmian Surflex, 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 Socariceanu[1] Xiaoxue An[1] Alan Deighton[1] Alan Friday[2]
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 Carneiro[1] Andrew Rathbone[2]
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 Liu[1] C Cross[2] J McGrail[2]
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 Liu[1] C Cross[2]
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 Zhang[1] Yong Bai[1] Biao Jing[2] Keqiang Zhu[3] Guowei Sun[1]
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 Grindheim[1] Inge Revhaug[2] Ken Welker[1] Peder Solheim[1] Egil Pedersen[3]
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, Tromso, Norway

Numerical and Experimental Modelling of Mooring Systems: Effects of Wave Groupiness on Extreme Loads OMAE2018-77661
Carlos Barrera Sánchez, Raul Guanche, 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-Rawi[1] Tauvry Sebastien[2] Adrian Galdran[3] Alberto Isasi[3]
Joaquim Bastos[4] Jonathan Rodriguez[5] Fredrik Elmgren[6] Marc Pinto[2]
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, Linkoping, Sweden

A Generic and Modular Architecture for Maritime Autonomous Vehicles OMAE2018-78769
Magali Barbier[1] Eric Bensana[1] Xavier Pucel[1] Francesco Pacini[2] Johann Dreo[3] Sonia Bilbao[4]
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 Sucasas[1] Joaquim Bastos[2] Celestino Monteiro[3] Oleksiy Kebkal[4]
Ning Li[5] Henry Dol[6] Mohammed Al-Rawi[1]
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 Martínez[1] Sonia Bilbao[2] Jesús Rodríguez-Molina[3] Mirgita Frasheri[4] Baran Curuklu[4]
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 Pacini[1] Giacomo Paoli[2] Ivan Cayon[3] Tamara Rivera[3] Beatriz Sarmiento[3]
Konstantin Kebkal[4] Oleksiy Kebkal[4] Veronika Kebkal[4] Joost Geelhoed[5]
Bart Schipperijn[5] Henry Dol[6] Torstein Skogseth[7]
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-Wanton[1] Sonia Bilbao[2] Joaquim Bastos[3] Raul Mario del Toro Matamoros[4]
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
Shafiul 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 Li[1] Shuangxi Guo[2] Min Li[1] **Weimin Chen**[3] Yue Kong[4]
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 Armesto[1] Alfonso Jurado[1] Raul Guanche[1] Bernardino Couñago[2]
Joaquin Urbano[2] José Serna[2]
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 Builes 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 Qu[1] Yougang Tang[1] Zhen Gao[2] Yan Li[1] Liqin Liu[1]
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. Gomes[1] *Joao C C Henriques*[2] *Luís M. C. Gato*[3] *António F. O. Falcão*[3]
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, *Feargal 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 TiO_2 and CuO Commercial Nanoparticles be used for HP/HP Applications? A Comparison with the Very Well Performing Fe_3O_4 NP OMAE2018-77056
Zisis Vryzas[1] **Vassilios Kelessidis**[2] Lori Nalbandian[3] Vassilios Zaspalis[1]
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 Aadnoy*
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 Vralstad[1] Ragnhild Skorpa[1] Arild Saasen[2]
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 Shenold[1] Catalin Teodoriu[2] Saeed Salehi[2]
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 Kiran[1] Saeed Salehi[2] Catalin Teodoriu[2]
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 Hasan[1] Boyue Xu[1] Dave Fyfe[2]
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 Minescu[1] Catalin Teodoriu[2] Mihaela Caltaru[1] Marius Badicioiu[1]
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 Rodríguez[1] Carlos Guedes Soares[2] Jose Carlos Nieto Borge[3]
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 Alcala, Alcala de Henares, Spain

Equivalent Storm Model for Long-term Statistics of Sea Storms off Norway OMAE2018-78747
Valentina Laface[1] *Anne Karin Magnusson*[2] *Elzbieta M. Bitner-Gregersen*[3] *Magnar Reistad*[2] *Alessandra Romolo*[1] *Felice Arena*[1]
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 Berstad[1] Jan Vidar Aarsnes[2]
1. Aquastructures, Oslo, Norway; 2. CeFront, Arendal, Norway

Floating Moored Oscillating Water Column with Meshless SPH Method OMAE2018-77313
Alejandro J.C. Crespo[1] *Matthew Hall*[2] *José Domínguez*[1] *Corrado Altomare*[3] *Minghao Wu*[3] *Tim Verbrugghe*[3] *Vasiliki Stratigaki*[3] *Peter Troch*[3] *Moncho Gómez-Gesteira*[1]
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 Teixeira[1] Carlos Guedes Soares[2]
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 Banda[1] *Pentti Kujala*[1] *Pieter vanGelder*[2]
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. Maturana[1] *Marcelo Ramos Martins*[2]
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 Malenica[1] Byunghyuk Lee[2] Nikola Vladimir[3] Inno Gatin[3]
Charles Monroy[1] Jerome De Lauzon[1]
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, 0 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 Hongbing[1] Liping Sun[1] Huang Ao[2] Zhao Yipei[2] Chen Guoming[2]
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 Jacob[1] **Jeferson Araujo de Oliveira**[2] Ali Mehmanparast[1]
Foroogh Hosseinzadeh[2] Filippo Berto[3]
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 Pinheiro[1] Joao Santos[2] Conceição Fortes[1]
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 Holtam[1] Rajil Saraswat[2] Ramgopal Thodla[1] Feng Gui[1]
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 Sousa[1] Marcelo K. Protasio[1] Luis V. S. Sagrilo[2]
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 OMAE2018-77286
Fabien Caleyron[1] Marcelo Miyazaki[2] Laurent Paumier[3]
1. IFP Energies Nouvelles, Solaize, France; 2. TechnipFMC, Rio de Janeiro, RJ, Brazil;
3. TechnipFMC, Le Trait, France

Evaluation of AluminumCoated Flexible Pipe Armour Wires Exposed to a Sour Environment OMAE2018-78719
João Carlos Brancher Bertoncello[1] **Mariana dos Reis Tagliari**[1] Tiago Brun Coser[1]
Felippe Stefanowski Kerpen[1] Luciano Meirelles Santana[1]
Carlos Eduardo Fortis Kwietniewski[1] Marcelo Torres Piza Paes[2]
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 Besedin[1] **Ralf Peek**[2] Knut Vedeld[3] Olav Fyrileiv[4] Sze Yu Ang[5] Alexey Gulyaev[1]
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 Jayasinghe[1] Hayden Marcollo[1] Andrew E. Potts[1]
Craig Dillon-Gibbons[2] Phillip Kurts[1] Peter Pezet[3]
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 Vedeld[1] Håvar A. Sollund[1] Olav Fyrileiv[2]
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 Mikkola[1] Jaakko Heinonen[1] Markus Kankainen[2] Toni Hekkala[1] Juha Kurkela[1]
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 Eto[1] **Yoh Shikita**[2] Tomoki Ikoma[1] Koichi Masuda[1] Hiroaki Kihara[2]
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 Wan[1] Chi Zhang[2] Allan Ross Magee[2] Jingzhe Jin[3]
Mengmeng Han[2] Kok Keng Ang[2] Øyvind Hellan[3]
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 Hydroelasticiy of Two Types of Floating Bridges in Inhomogeneous Wave Conditions OMAE2018-78308
Shuai Li[1] Shixiao Fu[1] Wei Wei[1] Torgeir Moan[2]
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 Xu[1] **Thomas Viuff**[2] Bernt Leira[2] Ole Øiseth[2]
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 Lim[1] Kayvan Pazouki[1] Ben Zhang[2] Alan J Murphy[1]
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 Naaijen[1] Kees van Oosten[2] Karel Roozen[3] Riaan van 't Veer[1]
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. Xiros[1] Georgios Tsakyridis[2] Marco Scharringhausen[2] Lars Witte[2]
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 OMAE2018-77191
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 Vlasveld[1] Fons Huijs[1] Feike Savenije[2] Benoît Paillard[3]
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 Deng[1] Xifeng Gao[2] **Liqin Liu**[1] Haixiang Zhao[1]
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 Hall[1] Patrick Connolly[2]
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 Tetu[1] Jens Peter Kofoed[1] Francesco Ferri[1] Nathan Sonalier[1]
Tommy Larsen[2] Lucia Margheritini[1]
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 Arena[1] Luca Daniele[2] Vincenzo Fiamma[1] Marco Fontana[3] Giovanni Malara[1]
Giacomo Moretti[2] Alessandra Romolo[1] Gastone Pietro Rosati Papini[2]
Andrea Scialò[1] Rocco Vertechy[4]
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 Alvarellos Iglesias, Jose M Segura, M.R. Lakshmikantha
Repsol, Mostoles, Spain

Analysis of Wellbore Instability in an Offshore Field: a Case Study OMAE2018-77928
Nubia Aurora Gonzalez Molano, Jose Alvarellos Iglesias, Pablo Enrique Vargas Mendoza, M.R. Lakshmikantha
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 Alvarellos Iglesias, M.R. Lakshmikantha
Repsol, Mostoles, Spain

An Integrated Numerical and Mineralogical Study of a High Pressure High Temperature Well OMAE2018-78152
Jose M Segura[1] Miguel A. Caja[1] Laura García[1] Juan M. Jiménez[1] Jorge Díez[2]
Teresa Polo[3] Jose Alvarellos Iglesias[1] M.R. Lakshmikantha[1]
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 Huang[1] Shanshan Tao[1] Qiang Bai[2] Sheng Dong[2]
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, Høvik, Norway

The 2010 Oil Spill in the Gulf of Mexico – Flow-Rate Estimation based on Satellite-Images Analysis OMAE2018-78717
Diego Garcia Giraldo[1] Ronald W. Yeung[2]
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
OMAE2018-78569
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 Teixeira[1] Carlos Guedes Soares[2]
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
OMAE2018-78520
Jacob Hicks[1] Harry B. Bingham[1] Robert Read[2]
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 Housseine[1] Sime Malenica[1] Guillaume De Hauteclocque[1] Chen Xiao-Bo[2]
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: Xinshu Zhang, Shanghai Jiao Tong University, China

Maneuverability Towing Tank Experiments with Manifold Models – Part I: Static Drift Tests OMAE2018-77036
Felipe A.S. Kleine[1] Danyllo L. Guedes[1] **Felipe S. de Castro**[1]
Daniel Carvalho[2] Joao Lucas Dozzi Dantas[1]
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 Fonseca[1] Carl Trygve Stansberg[2] Kjell Larsen[3] Oddgeir Dalane[3]
Tjerand Vigesdal[4] Rune Bjørkli[4]
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. Guedes[1] Felipe A.S. Kleine[1] **Felipe S. Castro**[2]
Daniel Carvalho[3] Joao Lucas Dozzi Dantas[1]
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 Larsen[1] Tjerand Vigesdal[2] Rune Bjørkli[2] Oddgeir Dalane[1]
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 Ewans[1] Jason McConochie[2]
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 Zakharov[1] Donald Resio[2] **Andrei Pushkarev**[3]
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 Mohtat[1] **Solomon Yim**[1] Alfred Osborne[2]
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 Yamada[1] Kyoko Kameya[2]
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 Kim[1] Jung Min Sohn[2] Jeom Kee Paik[3] **Seung Jun Baek**[2]
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 Li[1] **Chao Gao**[1] Xueqian Zhou[1] Sen Dong[1] Peng Fu[1] Donghao Xu[2]
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. Haldorsen[1] Bård Nyhus[2] Gisle Rørvik[3]
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 Decuupere[1] David Charliac[1] Jean-Philippe Roques[2] Alexandre Karnikian[2] Muriel Amielh[3] Pierre-Olivier Mattei[4] Gaëtan Galeron[5]
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 Hameed[1] Guowei Sun[1] **Yong Bai**[2]
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 Zhang[1] Hamad Hameed[2] Yuxin Xu[2] Chonglin Zhang[1] **Yong Bai**[3]
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 Zhao[1] Zhimin Tan[2] Yucheng Hou[3] Y.J Yin[1] W.H. Meng[1]
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 Liu[1] Stig Olav Kvarme[1] Odd Einar Lindøe[2]
1. Aker Solutions AS, Trondheim, Norway; 2. Statoil ASA, Kårstø, Norway

ECAs, Probabilities and Axial Misalignment OMAE2018-77647
Andrew Cosham[1] Kenneth Macdonald[2]
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 Bezensek[1] Meng Luo[2] Carl Popelar[3] Graham Chell[4]
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 Kristiansen[1] Pål Furset Lader[2] Per C. Endresen[1] Vegard Aksnes[1]
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 Li[1] Zhiyu Jiang[2] Jungao Wang[1] Muk Chen Ong[1]
1. University of Stavanger, Stavanger, Norway; 2. NTNU, Trondheim, Norway

Irregular Wave and Current Loads on a Fish Farm System OMAE2018-77482
Arnt G. Fredriksen[1] Basile Bonnemaire[2] Øyvind Nilsen[1]
Leiv Aspelund[1] Andreas Ommundsen[1]
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 Yu[1] Takero Yoshida[2] Han Jialin[1] Yoichi Mizukami[3] Daisuke Kitazawa[2] Lili Liu[1]
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 Romero[1] Blas Zamora Parra[1] Julio García Espinosa[2]
Jerónimo Antonio Esteve Pérez[1] Antonio José Lorente López[1]
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 Fang[1] Yuxin Xu[1] Shuai Yuan[1] Yong Bai[2] Peng Cheng[1]
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 Kang[1] Tandiono Tandiono[1] Xin Lu[1] Cary Kenny Turangan[1]
Hafiiz Osman[2] Fannon Lim[3] Margaret Lucas[4] Matthew Tan[5]
*1. A*STAR Institute of High Performance Computing, Singapore, Singapore; 2. Sembcorp Marine Ltd, Singapore, Singapore; 3. University of Glasgow, Singapore, Singapore; 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 Li[1] **Jiajun Chen**[2] Yushen Huang[2] Liwei Liu[2] Xianzhou Wang[2]
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 OMAE2018-77436
Jiaming Wu[1] Dongjun Chen[1] Ying Xu[1] Yuqing Chen[2] Lihua Lu[2]
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 OMAE2018-77760
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 Aly[1] Rocky Taylor[1] Eleanor Bailey Dudley[2] Ian Turnbull[2]
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 OMAE2018-78409
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 Tsarau[1] Marnix van den Berg[2] Wenjun Lu[2] Raed Lubbad[2] Sveinung Løset[2]
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 Paolo[1] Javier Lara[1] Gabriel Barajas[1] Agnese Paci[2] Inigo Losada[1]
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 Veldman[1] Henk Seubers[1] Peter van der Plas[1] Matin Hosseini Zahraei[2] Peter Wellens[2] Rene Huijsmans[3]
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 Zhang[1] **Hang Zhang**[2] Xuanshu Chen[2] Hao Liu[2] Xianzhou Wang[2]
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: María L. Jalón, Cranfield University, United Kingdom

Iberdrola's Offshore Wind Pipeline: Technical Evolution and Challenges OMAE2018-77893
Alfonso Montero[1] Alejandro De Hoz[2]
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 OMAE2018-77176
Giovanni Rinaldi[1] Ajit Pillai[1] Philipp Thies[2] Lars Johanning[1]
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 OMAE2018-78218
Amrit Shankar Verma[1] Philipp Ulrich Haselbach[2] Nils Petter Vedvik[1] Zhen Gao[1]
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 OMAE2018-78648
Bruno Pereiras Garcia[1] **Celia Miguel González**[1] Ginés Rodríguez Fuertes[1] Manuel García Díaz[1] Jesus Manuel Fernandez Oro[1] Francisco Castro[2]
1. University of Oviedo, Gjión, 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, Gjión, Spain

Design Load Analysis for Wave Energy Converters OMAE2018-78178
Jennifer van Rij[1] Yi-Hsiang Yu[1] Ryan Coe[2]
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 Faÿ[1] James Kelly[2] Joao Henriques[3] Ainhoa Pujana[1] Mohammad Abusara[4] Markus Mueller[4] Imanol Touzón[5] Pablo Ruiz-Minguela[1]
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 Arnipally[1] Majid Bizhani[2] **Ergun Kuru**[1]
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 Saasen[1] Helge Hodne[1] Egil Ronæs[2] Simen A. Aarskog[1] Bente Hetland[1] Marie B. Løvereide[1] Rahmat Mohammadi[1]
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. Ringsberg[1] Hanna Jansson[1] Martin Örgård[1] Shun-Han Yang[1] Erland Johnson[2]
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-Barrio[2] Sergio Fernandez-Ruano[2] Adolfo Maron-Loureiro[2] Enrique Molinelli-Fernandez[2] Francisco Moreno-Buron[2] Julio Oria-Escudero[3] Jose Rios-Tubio[2] Cristina Soriano-Gomez[2] Alvaro Valea-Peces[2] **Carlos Lopez-Pavon**[4] Antonio Souto-Iglesias[1]
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 Neumann[1] **Sören Ehlers**[2] Ole Tom Vårdal[3]
1. Wood Group, Tønsberg, Norway; 2. Technical University of Hamburg, Hamburg, Germany; 3. AHPA, Loddefjord, Norway

Enhance Reliability of Structural Bonding: an Advance Solution of Repair for Corrosion Onboard Offshore Units OMAE2018-78523
Luc Mouton[1] Xabier Errotabehere[2] Stéphane Paboeuf[1] Firas Sayed Ahmad[2]
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 Garbatov[1] Carlos Guedes Soares[2]
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-Bo[1] **Sime Malenica**[2]
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 Riefolo[1] Fernando del Jesus[2] Raúl Guanche Garcia[2]
Giuseppe Roberto Tomasicchio[3] Daniela Pantusa[3]
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 Ibekwe[1] Kjeld Sorensen[1] Jonathan Fernandez[2]
Alberto Arredondo[2] Alexander Mena[2]
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 Hoyos[1] Erik Falkenberg[1] Petter Stuberg[2]
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 Han[1] Torgeir Kirkhorn Vada[1] Qing Wang[2]
1. DNV GL, Høvik, Norway; 2. DNV GL, Shanghai, China

Hydrodynamic Coefficients of Simplified Subsea Structures OMAE2018-78315
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 Huang[1] Yu Yan Li[1] Ji Qiang Xu[1] Qing Chang Xu[1] Ming Xiu Jia[1]
Zhen Lin Liang[2] Fenfang Zhao[1] Xinxin Wang[1] Yan Li Tang[1]
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 Leon[1] Alfred Osborne[2] Carlos Guedes Soares[3]
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 Waseda[1] Takehiko Nose[1] Adrean Webb[2]
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 Komoriyama[1] Daisuke Yanagihara[2]
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 Komoriyama[1] Yoshiteru Tanaka[1] Takahiro Ando[1] Yutaka Hashizume[1] Akira Tatsumi[2] Masahiko Fujikubo[3]
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 Gaiotti[1] **Cesare Mario Rizzo**[1] Montella Adriano[2] Nicole Ferrari[3]
1. University of Genoa, Genova, Italy; 2. FINCANTIERI S.p.A., Genova, Italy; 3. FINCANTIERI S.p.A. (Naval Vessels Business Unit, Hull Department), Genova, Italy

Stress Analysis of Post-buckled Sandwich Panels OMAE2018-78510
Jani Romanoff[1] Jasmin Jelovica[2] Bruno Reinaldo Goncalves[1] Heikki Remes[1]
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 Crippa[1] Lorenzo Motta[1] **Alessandro Paggi**[1] Emanuele Paravicini Bagliani[2] Alessandro Elitropi[1] Philippe Darcis[2]
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 Horn[1] Erling Østby[2] Mons Hauge[3] Odd Akselsen[4]
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 Venås[1] Erling Østby[1] David Baxter[2] Steven Chong[3]
1. DNV GL, Hovik, 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 Guo[1] Yilun Li[2] Min Li[2] **Weimin Chen**[3] Yue Kong[4]
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 Jiang[1] Ting Liu[1] Shuai Yuan[1] Yong Bai[2]
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 Zhou[1] Yoichi Mizukami[2] Takero Yoshida[3] Daisuke Kitazawa[3]
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 Turner[1] Dean Steinke[1] Ryan Nicoll[1] Patrik Stenmark[2]
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 Ahmed[1] **M A Hannan**[2] Iwan Mustaffa Kamal[1]
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 Aarsaether[1] Biao Su[2] David Kristiansen[2]
1. SINTEF Ocean, Tromsoe, 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 Zhang[1] **Harsha Cheemakurthy**[1] Sören Ehlers[2] R. U Franz von Bock Und Polach[2]
Karl Garme[1] Magnus Burman[1]
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 Karulin[1] **Mikhail Kazantsev**[1] Marina Karulina[1]
Alexander Proniashkin[1] Dmitry Zaikin[2]
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 Battistella[1] Daniel de los Dolores Paradinas[1]
Albert Meseguer Urbán[2] Raúl Guanche Garcia[1]
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 Bayati[1] Alan Facchinetti[2] Alessandro Fontanella[2] Marco Belloli[2]
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 Robertson[1] Erin Bachynski[2] Sebastien Gueydon[3]
Fabian Wendt[4] Paul Schünemann[5] Jason Jonkman[1]
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 Moreu[1] Ricardo Garcia-Morato[1] Jesus Valle[2] Santiago de Guzman[1] Miriam Terceño[1]
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 May[1] Yaroslav Ignatenko[2] Oleg Bocharov[2] Andrey Gavrilov[3]
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 Höhn[1] Roger Aragall[2] Michael Koppe[1] Joachim Oppelt[1]
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 Amaratunga[1] Roar Nybø[2] Rune Wiggo Time[1]
1. Unversity 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. Nejad[1] Lin Li[2] Wilson Ivan Guachamin Acero[3] Torgeir Moan[4]
1. Norwegian University of Science and Technology, Trondheim, Norway; 2. University of Stavanger, Stavanger, Norway; 3. Departamento de Ingenieria Mecanica, Escuela Politecnica 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. Portillo[1] Joao C C Henriques[2] Rui P. F. Gomes[3] Luís M. C. Gato[4] António F. O. Falcão[4]
1. Instituto Superior Técnico, Universidade de Lisboa, Lisbon, Portugal; 2. Instituto Superior Tecnico, 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 Sun[1] Hui Li[1] Muk Chen Ong[2]
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 Dong[1] Yordan Garbatov[1] Carlos Guedes Soares[2]
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 Yeter[1] Yordan Garbatov[2] Carlos Guedes Soares[3]
1. Centre for Marine Technology and Ocean Engineering (CENTEC), University of Lisbon, Instituto Superio, 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 Edalat[1] Bahram Mehrafrooz[1] Mojtaba Dyanati[2]
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 Belibassakis[1] Theodosios Papathanasiou[2]
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 Korobkin[1] Tatiana Khabakhpasheva[2]
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 Kristiansen[1] Petter Borvik[2]
1. NTNU, Trondheim, Norway; 2. TechnipFMC, Oslo, Norway

Elasto-Plastic Beam Afloat on Water Subjected to Waves OMAE2018-78646
Kazuhiro Iijima[1] Akira Tatsumi[2] Masahiko Fujikubo[3]
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. Huang[1] Felipe M. Moreno[1] Eduardo A. Tannuri[1] Joselito G. A. Câmara[2]
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 Andersen[1] Amelie Tetu[2] Henrik Stiesdal[3]
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 Vilameá[1] Allan C. De Oliveira[2] **Felipe Ruggeri**[3] Kazuo Nishimoto[4]
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 Santos[1] Alvaro Rodriguez[1] David Fernandez[1] Tomas Gintautas[2]
John Sorensen[2] Anand Natarajan[3] Wilfried Njomo[3]
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 Monteiro[1] Juliana Souza Baioco[2] Edivaldo Ramos Delgado[1] Carl Horst Albrecht[1] Beatriz Lima[1] **Breno P. Jacob**[3]
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 Coria[1] Iñigo Martin[2] Hakim Bouzid[3] Iker Heras[2] Josu Aguirrebeitia[2]
1. University of the Basque Country, Bilbao, Spain; 2. University of the Basque Country (UPV/EHU), Bilbao, Spain; 3. Ecole Technologie Superieure, 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 Gramstad[1] Elzbieta M. Bitner-Gregersen[1] Øyvind Breivik[2]
Anne Karin Magnusson[2] Magnar Reistad[2] Ole Johan Aarnes[2]
1. DNV GL, Høvik, Norway; 2. Norwegian Meteorological Institute, Bergen, Norway

Drifting Rogue Packets OMAE2018-77904
Amin Chabchoub[1] Norbert Hoffmann[2] Nail Akhmediev[3] Takuji Waseda[4]
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 Gao[1] Xin Li[1] Jing Zhou[1] Wenxing Zhou[2] Zengli Peng[1]
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 Yi[1] Soo-Chang Kang[2] Hyun-Moo Koh[3] Jinkyo F. Choo[4]
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 Davies[1] Nicolas Lacotte[1] Mael Arhant[1] Damien Durville[2]
Abderrahim Belkhabbaz[2] Michel Francois[3] Fabien Khouri[3] Kara Konaté[4] Stephen Mills[4]
Paul Smeets[5] Jean-Robert Philippe[6] Christophe DeFrance[6] Dennis Sherman[7]
Kurt Newboles[8] Alain Ledoux[9] Nicolas Chazot[10] Sebastien Saillard[10]
Ramesh Kante[11] David Cannell[11] Patrick Chevallier[12] Olivier Lodeho[12]
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 Valdes[1] Naoki Osawa[1] Sherif Rashed[2] Hidekazu Murakawa[3]
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 Li[1] Xiaoli Jiang[1] Zhiping Liu[2] Hans Hopman[1]
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, Subhajit Lahiri
Subsea 7, Westhill, United Kingdom

Reeled CRA Clad/Lined Pipeline Installation Seastate Optimisation from Fatigue and Fracture Perspective OMAE2018-78168
Daowu Zhou[1] Thurairajah Sriskandarajah[1] Heidi Bowlby[2] Ove Skorpen[2]
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 Guanche Garcia,
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 Zhang[1] Norikazu Masuda[2] Choong Sik Park[3] Shinichi Kitamura[1] Yasunori Nihei[1] Sharath Srinivasamurthy[1]
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 OMAE2018-77998
Thomas Adcock[1] Paul Taylor[2]
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 OMAE2018-77186
Mark McAllister[1] Thomas Adcock[1] Paul Taylor[2] **Ton van den Bremer**[1]
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 Shugan[1] Yana Saprykina[2] **Sergei Kuznetsov**[2] Yang - Yih Chen[3]
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 OMAE2018-78393
Dmitry Chalikov[1] **Alexander V. Babanin**[2]
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 OMAE2018-78367
Nicolas Desmars[1] Yves Pérignon[1] Guillaume Ducrozet[1] Charles-Antoine Guérin[2] Stephan T. Grilli[3] Pierre Ferrant[1]
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 OMAE2018-77043
Seong-Rak Cho[1] Jin-Ho Jang[1] Cheol-Hee Kim[1] Eun Jin Oh[2] Kuk Jin Kang[2] Sungsu Lee[3] Yong-Chul Lee[4]
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
Grigorii 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 OMAE2018-77638
Tak-Kee Lee[1] **Se-Jin Ahn**[1] Woo-Seong An[1] Kyungsik Choi[2]
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 OMAE2018-78440
Mingming Liu[1] **Ming Zhao**[2] Lin Lu[3]
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 OMAE2018-77305
David Gross[1] Yann Roux[2] Benjamin Rousse[3] Francois Petrie[3] Ludovic Assier[4] Matthieu Minguez[5]
1. K-Epsilon, Valbonne, France; 2. K-Epsilon, Sophia Antipolis, France; 3. Oceanide, La Seyne sur Mer, France; 4. TOTAL E&P Recherche & Developpement, Courbevoie, France; 5. SEAL Engineering (TechnipFMC subsidary), 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 OMAE2018-77840
Alessandro Fontanella[1] Ilmas Bayati[2] **Marco Belloli**[1]
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 Vittori[1] Faisal Bouchotrouch[2] Frank Lemmer[3] Jose Azcona[4]
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 Lemmer[1] Wei Yu[1] Po Wen Cheng[1] Antonio Pegalajar-Jurado[2] Michael Borg[3] Robert F Mikkelsen[3] Henrik Bredmose[4]
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. Hallowell, 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 Aoki[1] Sharath Srinivasamurthy[1] Kazuhiro Iijima[2] Naoyuki Hara[1] Tomoki Ikoma[3] Yasunori Nihei[1]
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-Huarte
Universitat Rovira I Virgili, Tarragona, Spain

Effect of Wave-Current Interaction on Strong Tidal Current OMAE2018-78121
Aleksandar Jakovljevic[1] Martin Dumont[2] Frederic Dias[1]
1. University College Dublin, Dublin, Ireland; 2. Bureau Veritas, Paris, France

ADCP Observation and Numerical Model Prediction of Tidal Currents near Kozu 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 Chen[1] Paul Bonar[2] Thomas Adcock[1]
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 Opedal[1] Anisa Corina[2] Torbjorn Vralstad[3]
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 OMAE2018-77690
María J. Legaz[1] Pedro Mayorga[2] Javier Fernández[2] Daniel Coronil[1]
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 Zhang[1] Qin Liu[1] **Xing Hua Shi**[1] Carlos Guedes Soares[2]
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. Hallak[1] José F. Gaspar[1] Mojtaba Kamarlouei[1] Miguel Calvário[1] Mario J. G. C. Mendes[2] Florent Thiebaut[3] Carlos Guedes Soares[4]
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

TUESDAY

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 Sheng[1] Carlos Guedes Soares[1] Ângelo Teixeira[2]
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 Patel[1] **Dr. Suhail Ahmad**[2]
1. IIITDM 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 Buchmiller[1] Arve Bjorset[2] **Torfinn Horte**[1] Sune Pettersen[1]
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-Arreba[1] Niek Bruinsma[2] Erin Bachynski[3]
Axelle Viré[4] Bo T. Paulsen[2] Niels G. Jacobsen[2]
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 Courbois[1] Emmanuel Tcheuko[2] Benjamin Bouscasse[2]
Youngmyung Choi[2] Olivier Kimmoun[3] Riccardo Mariani[1]
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 Katsardi[1] Konstantinos Chatziioannou[2] Apostolos Koukouselis[2] Ioannis Chatjigeorgiou[3] Euripidis Mistakidis[2]
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 Tecnalia, 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 Fernandez[1] Shashi Bhushan Kumar[2] Rosemary Norman[3] Wai Lok Woo[3] Arun Kr. Dev[4]

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 Harmsen[1] **Radboud Van Dijk**[1] Petter Stuberg[2]

1. Heerema Marine Contractors, Leiden, Netherlands; 2. Kongsberg Maritime, Kongsberg, Norway

Improved FPSO Offloading Strategy based on Analysis including DP System OMAE2018-78465

Gerhard Gundersen[1] Petter Stuberg[2] Timothy Edward Kendon[3] Svein-Arne Reinholdtsen[4]

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 Dotta[1] Eduardo A. Tannuri[1] Pedro C. de Mello[1] Gustavo R. Diederichs[2] Daniel F. Cruz[3] Anderson T. Oshiro[3]

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 Chrolenko[1] Gerhard Gundersen[1] Tom E. Eikanger[2] Boje Tveraaen[3]

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 Kim[1] Youngrae Kim[1] Minseok Kim[2] Minki Kim[2] Donghun Lee[1] Joonho Min[1] Hyobin Kim[1] Kihwan Lee[1]

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 Slagstad[1] Finn-Christian W. Hanssen[1] Olav Rognebakke[2]

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 Auburtin[1] Guillaume Toutin[1] Ahmad Fahmi Mahmud[2]

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 Puente[1] Kjell Larsen[2]

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

Nonlinear Strain Estimation based on Linear Parameters OMAE2018-77785
Bruna Nabuco[1] Tobias Friis[1] Marius Tarpø[2] Sandro Amador[1]
Evangelos I. Katsanos[1] Rune Brincker[1]
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 Ruzzo[1] Nilanjan Saha[2] Felice Arena[1]
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 Lim[1] **Lance Manuel**[1] Ying Min Low[2]
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 Zhu[1] Helene Haaheim[2] Marc Lefranc[2]
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 Zhu[1] Hans C. Rentsch[2] Marc Lefranc[3] **Helene Haaheim**[3]
1. 7waves AS, Son, Norway; 2. Neptune Energy, Sandnes, Norway;
3. Force Technology AS, Hvalstad, Norway

Materials Technology

3-8-1 Life Extenstion 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 OMAE2018-78482
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 Zhang[1] Francois Ayello[2] Guanlan Liu[2]
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 Jiang[1] Yutian Lu[2] Yong Bai[3]
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 Sun[1] Peihua Han[1] Yuxin Xu[1] **Yong Bai**[2] Hamad Hameed[1]
1. Zhejiang University, Hangzhou, China; 2. Zhejiang University, Zhejiang, China

Efficient Computation of Irregular Wave Wire Stresses in Flexible Risers OMAE2018-78405
Gabriel Rombado[1] Arya Majed[2] Nathan Cooke[2] Dharma Theja R. Pasala[2]
Xianglei Ni[2] Andrew Low[3]
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 Freitas[1] Erica Chaves[2] Sylvia Teixeira[3] **Celio Costa**[4]
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 OMAE2018-77812
Satoru Takano, Sotaro Masanobu, Shigeo Kanada, Masao Ono, Hiroki Sasagawa
National Maritime Research Institute, Tokyo, Japan

Cutting of Fluid Saturated Rock: Dilation vs Consolidation OMAE2018-78042
Rudy Helmons[1] Emmanuel Detournay[2] Mario Alvarez Grima[3] Cees van Rhee[1]
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. Silva[1] Marcelo A. Vitola[2] Paulo de Tarso T. Esperança[2] Sergio H. Sphaier[3]
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 Bjørke[1] **Erik Damgaard Christensen**[2] Stefan Carstensen[2]
Kasper Pagh Petersen[3] Xerxes Mandviwalla[2] Trygve Kristiansen[4] Rolf Baarholm[5]
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 Liu[1] Decheng Wan[1] Changhong Hu[2]
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 Jin[1] **Joseph Moo-Hyun Kim**[1] Junho Choi[1] Woo-Sun Park[2]
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, Oceanalysis 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 Arntsen[1] Juliane Borge[1] Ole-Hermann Strømmesen[2] **Edmond Hansen**[1]
1. Multiconsult, Tromsø, Norway; 2. Lerøy Seafood Group, Tromsø, Norway

The Quantification of Soliton Current Profiles for Offshore Engineering OMAE2018-77863
Gus Jeans[1] Alfred Osborne[2] Chris Jackson[3]
1. Oceanalysis 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 Karulin[1] Marina Karulina[1] **Mikhail Kazantsev**[1]
Alexander Proniashkin[1] Dmitry Zaikin[2]
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 Yuan[1] Chao Wang[2]
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. Gonçalves[1] Keigo Sakata[1] Dennis M. Gambarine[2] Murilo M. Cicolin[3]
Shinichiro Hirabayashi[1] Gustavo R. S. Assi[3]
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 Li[1] **Liwei Liu**[2] Lixiang Guo[2] Dakui Feng[2] Xianzhou Wang[2]
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 He[1] Decheng Wan[1] Zhiqiang Hu[2]
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 Trubat, **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 Hegseth[1] Erin Bachynski[1] Madjid Karimirad[2]
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 Wijngaarden[1] Piet Meijers[2] Tim Raaijmakers[2]
Richard De Jager[3] Kenneth Gavin[4]
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 Beemer[1] Alexandre Bandini-Maeder[2] Jeremy Shaw[1] Ulysse Lebrec[2] Mark J Cassidy[3]
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 Munoz[1] German Ocampo[2] Nestor Sanabria[1] Juan Fernando Uribe[1]
Luis Rodriguez[1] Roberto Parrado[1]
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 Aadnoy, 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 Hsu[1] Tzu-Ching Chuang[1] Ray-Yeng Yang[2] Wei-Ting Hsu[3] Krish Thiagarajan[4]
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 Sheng[1] Ji Chunyan[2] Carlos Guedes Soares[1]
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 Koukounas[1] **Claes Gunnar Eskilsson**[2] Allan P. Engsig-Karup[3]
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 Cho[1] **Teguh Muttaqie**[2] Sang-Hyun Park[1] Gulgi Choi[3] Soonhung Han[3] Phillseung Lee[3] Yoonsik Cho[4] Jung Min Sohn[5]

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 Ko[1] **Akira Tatsumi**[2] Kazuhiro Iijima[3] Masahiko Fujikubo[4]

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 Zhu[1] **Jieling Kong**[1] Qingyang Liu[1] Han Yang[1] Bin Wang[2]

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 Yuan[1] Qiang Chen[2]

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. Weller[1] Stephen J. Banfield[2] José Canedo[3]

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 Sedghi[1] Mehrdad Kimiaei[2]

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 Liao[1] Wenyang Duan[1] Qingwei Ma[1] Binbin Zhao[1] Shan Ma[1] Jang Kim[2]

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 Yoo[1] Hyun Joe Kim[1] Dong Yeon Lee[1] Booki Kim[1] **Seung Ho Yang**[2]
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 Zhang[1] Scott Draper[2] Hugh Wolgamot[1] Wenhua Zhao[1] Liang Cheng[1]
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 Bøckmann, 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 Hagen[1] Jørn Birknes-Berg[1] Ida Håøy Grue[1] Gunnar Lian[2] Kjersti Bruserud[3] Tone M. Vestbøstad[3]
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 Perez[1] Philippe Bastid[2] Andrei Constantinescu[3] Vengatesan Venugopal[1]
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 Gracia[1] Naoki Osawa[1] Kazuhiro Iijima[2] Toichi Fukasawa[3] Hitoi Tamaru[4]
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 Zhang[1] Tyler London[2] Damaso DeBono[2]
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 Wu[1] Longjie Wang[2]
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 Draper[1] Weidong Yao[1] Liang Cheng[2] Joe Tom[2] Hongwei An[1]
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 Draper[1] Terry Griffiths[1] Liang Cheng[2] David White[3] Hongwei An[1]
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 Roberts[1] Thurairajah Sriskandarajah[1] Gianluca Colonnelli[1] Arnaud Roux[2] Alan Roy[1] Parupathy Ragupathy[1]
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 Schaekel[1] John McNab[2] Neville Dodds[2] Tido Peters[1] Henning Janssen[1] Christian Brecher[1]
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 Hirai[1] Akira Sou[1] Yasunori Nihei[2]
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 Oh[1] Tomoaki Utsunomiya[2] Kota Saiki[2]
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 Yoshimoto[1] Hisafumi Yoshida[2] Ken Kamizawa[1]
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, Hovik, Norway

Time-domain Analysis of Hydroelastic Responses on a Moored Oil Storage Vessel Subjected to Wind, Irregular Waves and Currents OMAE2018-78365
Yong Cheng[1] Ji Chunyan[1] Gangjun Zhai[2] Tianhui Fan[3]
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, Oceanalysis 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 Glavind[1] **Michael H. Faber**[2]
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 Pineau[1] Nicolas Raillard[2] Marc Prevosto[2] Françoise Girard[1] Stéphane Raynaud[1]
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 Wang[1] Zao-Jian Zou[1] Hai-Peng Guo[1] Yi-Zhou Ren[2]
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 Kim[1] Jong-Chun Park[1] SungPill Kim[1] Hyun Soo Kim[2] YongJin Cho[3]
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 Chen[1] Bowei Yu[1] Ying Min Low[1] Kim Thow Yap[2]
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 Xu[1] **Guowei Sun**[1] Songhua Liu[1] Fengguang Xue[2] Yong Bai[3]
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 Shi[1] Yao Xiongliang[1] Jiaolong Zhao[2] Longquan Sun[3] Yue Tian[1]
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 Doygun, University of Hawaii, USA

Finite Element Simulation of an Embedded Anchor Chain OMAE2018-77781
Chao Sun[1] Xiaowei Feng[2] Susan Gourvenec[3] Steven R. Neubecker[2] Mark F. Randolph[2]
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
Kimihiro Toh[1] Yusuke Fukumoto[2] Takao Yoshikawa[1]
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 Kiran[1] Saeed Salehi[2]
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 Gomes[1] Marius S Nilsen[2] Johnny Frøyen[3] Knut S Bjørkevoll[3]
Antonio C V M Lage[4] Kjell Kåre Fjelde[1] Dan Sui[1]
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 Leulseged[1] Dan Sui[2] Sima Nepal[3] Suranga Geekiyanage[2]
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 OMAE2018-77900
Shan Wang[1] Suresh Rajendran[2] Carlos Guedes Soares[3]
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 Rajendran[1] Carlos Guedes Soares[2]
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 Chen[1] Marzieh Hashemzadeh[1] Yordan Garbatov[2] Carlos Guedes Soares[3]
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 Zhu[1] Nilo de Moura Jorge[1] John H. Chujutalli[1] Marcelo Igor Lourenço Souza[1] Segen Estefen[2]
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 Prabowo[1] Jung Min Sohn[1] Dong Myung Bae[1] Agus Setiyawan[2]
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 Ravinthrakumar[1] Trygve Kristiansen[1] Babak Ommani[2]
1. NTNU, Trondheim, Norway; 2. SINTEF Ocean, Trondheim, Norway

Investigating a Simplified Model for Moonpool Piston Mode Response in Irregular Waves OMAE2018-78352
Babak Ommani[1] Trygve Kristiansen[2] Kjetil Berget[1]
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 Magee[1] Aichun Feng[2] Kandasamy Karthikeyan[1] Xiang Liu[3] Deguang Yan[3]
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

Tesk 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 Kim[1] Hyunchul Jang[2] Wei Xu[3] Zhirong Shen[4] Mustafa Kara[5] Seongmo Yeon[6] Hongmei Yan[7]
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 Pakozdi[1] Carl Trygve Stansberg[2] Svein-Arne Reinholdtsen[3]

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 Bunnik[1] Carl Trygve Stansberg[2] Csaba Pakozdi[3] Sebastien Fouques[4] Luke Somers[5]

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 Amare[1] **Yonas Zewdu Ayele**[2]

1. UiT The Arctic University of Norway, Tromsø, Norway; 2. Østfold University College, Kråkerøy, 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

Yan Dong[1] Yordan Garbatov[1] Carlos Guedes Soares[2]

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 Yamamoto[1] Kinya Ishibashi[2] Tomohiro Sugimoto[1]

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 Takami[1] Kazuhiro Iijima[2]

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 Wang[1] Carlos Guedes Soares[2]

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 Storheim[1] Gunnar Lian[2]

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 Liu[1] Richard Villavicencio[2] Kun Liu[3] Ling Zhu[4] Carlos Guedes Soares[5]

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 Bao[1] Huangjie Lou[2] Yibin Gu[1]

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 Yasuda[1] Nobuyuki Ishikawa[2] Yutaka Matsui[2] Daisuke Mizuno[2] Tomoyuki Yokota[2]

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 Bustamante[1] Susana Gomez-Alvarez[2] Jose Alberto Riquelme Oliveira[1] Paula Sanz Sanz[1] Rene Fernando Lema Zuñiga[3] Ludwing Erick Mercado Hurtado[3] Daniel Merino-Garcia[2]

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 Voorde[1] **Filip Van den Abeele**[2] Steven Cooreman[1]
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 Igeh[1] **Zhenhui Liu**[2] Jie Wu[3] Muk Chen Ong[1]
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 Nguyen[1] Olav Fyrileiv[2] Chor Yew Chia[1]
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 Ikoma[1] Koichi Masuda[1] Hiroaki Eto[1] Shogo Shibuya[2]
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 Ikoma[1] Hiroaki Eto[1] Koichi Masuda[1] Atsuhiro Oguchi[2]
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 Kamath[1] Csaba Pakozdi[2] Hans Bihs[1]
1. NTNU, Trondheim, Norway; 2. SINTEF Ocean, Trondheim, Norway

Numerical and Experimental Study of SPM Fish Cage: Comparison and Validation OMAE2018-78204
Hui Cheng[1] Liu Yi Huang[1] Yi Ni[1] Qing Chang Xu[1] **Fenfang Zhao**[1] Xinxin Wang[1] Zhenlin Liang[2]
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, Oceanalysis 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 Dong[1] Jinjin Zhai[1] **Weinan Huang**[2] Zhifeng Wang[1] Ri Zhang[1]
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 Sebastian[1] Manasa Ranjan Behera[2]
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 Ahmed[1] Mohammad Abdullah Al Maruf[2] Arun Kr. Dev[2] **M A Hannan**[2]
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-Kharanjani[1] **Amir H. Nikseresht**[1] Harry B. Bingham[2]
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. Castro[1] Eduardo Tadashi Katsuno[1] Gustavo R. S. Assi[1] Joao Lucas Dozzi Dantas[2]
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 Katsuno[1] Gustavo de Goes Gomes[2]
Felipe S. Castro[1] Joao Lucas Dozzi Dantas[2]
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-Guzmán[1] Kolja Müller[1] Luca Vita[2] Po Wen Cheng[1]
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 Kanner[1] Alexia Aubault[2] Bingbin Yu[2] Antoine Peiffer[2]
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 Ahidashti[1] Abdolhosein Haddad[1] Amin Barari[2]
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 Divyankar[1] Milad Khatibi[1] Rune Wiggo Time[1]
Hans Joakim Skadsem[2] Jan Aage Aasen[1]
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
OMAE2018-77630
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 Burlacu[1] Leonard Domnisoru[2] Dan Obreja[1]
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 Pollalis[1] Olgun Hizir[1] **Evangelos Boulougouris**[2] Osman Turan[1]
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 Ageno[1] Luca Bonfiglio[2] Dario Bruzzone[1] **Giuliano Vernengo**[1] Diego Villa[1]
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 Cheng[1] Nianzhong Chen[2]
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
OMAE2018-78740
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 Subramanian[1] Naga Venkata Rakesh[2] Robert F. Beck[3]
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 Jiang[1] Xiaojie Zhao[1] Zhihua Zeng[2] Tiezhi Sun[1] Jiawen Li[3] Zhi Zong[1]
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) Huang[1] Yu Zhang[2]
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 Leimeister[1] Bastian Dose[2]
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 Pessoa[1] Carl Trygve Stansberg[2] Nuno Fonseca[3] Manuel Laranjinha[1]
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 Deng[1] Shixiao Fu[2] Torgeir Moan[3] Wei Wei[2] Zhen Gao[1]
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 Ferrandis[1] Ricardo Zamora-Rodriguez[2]
Chryssostomos Chryssostomidis[3] Luca Bonfiglio[3]
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 Fonseca[1] Carl Trygve Stansberg[2]
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 Cai[1] Jun Liu[1] Yuansheng Cheng[1] Weiwei Hao[2] Pan Zhang[1]
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 Qin[1] Ying Wang[1] Xiongliang Yao[1] Zhikai Wang[2]
1. Harbin Engineering University, Harbing, 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 Kang[1] Jaewoong Kim[2] **Dongjoo Kim**[1] Youngjae Jang[3] Jae-Young Cho[4]
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 Effcient 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 Abdolmaleki[1] John Gregory[2]
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 Griffiths[1] Scott Draper[1] David White[2] Liang Cheng[3] Hongwei An[1] Feifei Tong[1] Antonino Fogliani[4]
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 Draper[1] Terry Griffiths[1] **David White**[2] Liang Cheng[3] Hongwei An[1] Antonino Fogliani[4]
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 OMAE2018-77130
Terry Griffiths[1] David White[2] Scott Draper[1] Fraser Johnson[3] Daniel Coles[4] Stephen Ingham[5] Caroline Lourie[5] Liang Cheng[6] Feifei Tong[1] Antonino Fogliani[7]
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 Masuda[1] Tomoki Ikoma[1] **Daichi Murata**[2] Hiroaki Eto[1] Akihiro Matsuoka[2] Yasuhiro Aida[3] Masaharu Ikegami[4]
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 Masuda[1] Kiyokazu Minami[1] Koichi Masuda[2]
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 Hisamatsu[1] Sooyoul Kim[2] Shigeru Tabeta[3]
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. Klamo, **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 Bhirawa[1] Kevin Kevin[1] Junghoon Lee[2] Jason P. Monty[1]
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, Oceanalysis 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 Essen[1] Kevin Ewans[2] Jason McConochie[3]
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 Mohtat[1] **Solomon Yim**[1] Alfred Osborne[2] Ming Chen[1]
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 Stefanakos[1] Erik Vanem[2]
1. SINTEF Ocean, Trondheim, Norway; 2. DNV GL, Høvik, Norway

Impact of Climate Change on the North Sea Offshore Energy Sector OMAE2018-77989
Nicolas Fournier[1] Galina Guentchev[1] Justin Krijnen[1]
Andy Saulter[1] Caroline Acton[2] Helen Hanlon[1]
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 Yu[1] Yingying Chen[1] Ying Min Low[1] Kim Thow Yap[2]
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 Lubbad[1] Sveinung Løset[1] Wenjun Lu[1] Andrei Tsarau[2] Marnix van den Berg[1]
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-Ojeda[1] Leo Gonzalez[1] Francisco Huera-Huarte[2]
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. Tomaselli[1] Ankit Aggarwal[2] Hans Bihs[2] Erik Damgaard Christensen[3]
1. DHI, Hørsholm, Denmark; 2. Norwegian University of Science and Technology, Trondhiem, 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: Efstathios 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 Zhang[1] Shixiao Fu[1] Haojie Ren[1] Runpei Li[1] Leijian Song[2]
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 OMAE2018-77255
José Enrique Gutiérrez Romero[1] Borja Serván Camas[2] Alejandro Luna García-Valenzuela[1] Jonathan Colom cobb[2] Julio García Espinosa[2]
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 Hüsken, 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 Liang[1] Run Liu[1] Jun Wan[2] Pai Guan[2] Xiangyun Li[2]
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 Wang[1] Fujian Zhou[1] Lufeng Zhang[1] Fan Fan[1] Hong Yang[2]
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. Lopes[1] Jose Falcao de Campos[2] A.J.N.A. Sarmento[1]
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 Ciortan[1] Helge Johnsgard[2] Olav Rognebakke[1] Eivind Ruth[1] Meghan Overstake[3]
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 Huang[1] Xiaoshun Yan[1] Muk Chen Ong[2] Yingcai Huang[3]
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 Josefson[1] J Alm[1] J M J McDill[2]
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 Xue[1] Nianzhong Chen[2]
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 Timokha[1] Ihor Raynovskyy[2]
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 Etienne[1] Yves-Marie Scolan[2] Laurent Brosset[3]
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 Ancellin[1] Laurent Brosset[2] Jean-Michel Ghidaglia[3]
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 Wang[1] Makoto Arai[2] Gustavo M. Karuka[2]
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

Prof. Johannes Pinkster

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.

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

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 Yoshida[1] Keiichi Yamasaki[2] Shunji Sunahara[3]
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 Martic[1] Nastia Degiuli[1] Sime Malenica[2] Andrea Farkas[1]
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 Duan[1] Jingxi Liu[1] Weiguang Liu[1] Zhiqiang Hu[2] De Xie[1]
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 Kristoffersen[1] Lars Olovsson[2] Tore Børvik[1]
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 Zhang[1] Yaosheng Zhu[1] Kun Liu[2] Zili Wang[3]
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 Chen[1] Carlos Guedes Soares[2]
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 Ebrahimi[1] Shawn Kenny[2] Mohsen Mohammadi[3]
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. Schutz[1] **Gabriel Rombado**[2] David A. Baker[3]
Heath Walker[4] Christopher Caldwell[4]
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 Norewgian 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 Lee[1] **Chan-Hoe Kang**[1] Jeong-Ho Lee[1] Chang-Hwan Jang[1]
Sung-Gun Park[2] Sung-Kon Han[2]
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 Marchionni[1] Lorenzo Maria Bartolini[1] Antonio Parrella[1] Luigino Vitali[2]
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 Barrette[1] David McGonigal[2] Kenton Pike[3]
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, Institude 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 Yoshida[1] Daisuke Kitazawa[1] Yoichi Mizukami[2] Qiaochu Chen[3] Akito Mochizuki[3]
1. Institude 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 Guinda[1] Araceli Puente[1] José A. Juanes[1] Francisco Royano[1] Felipe Fernández[1]
Marco A. Vega[1] Andrés García[1] Javier García[1] Germán Aragón[1] Ana J. Abascal[1] César Otero[2]
Cristina Manchado[2] Valentín Gomez-Jauregui[2] Joaquín López[2] Agustín Monteoliva[3]
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 Assad[1] Daiane G Faller[2] Gabriel de Carvalho[3] Luiz Landau[2] Mauricio R Fragoso[3]
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
Tokihiro Katsui[1] Hisao Tanaka[2]
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 Freiberg[1] Torben Ole Andersen[2] Jens Ring Nielsen[1]
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 Pedro[1] Joao Santos[2] Liliana Pinheiro[1] Conceição Fortes[1] Miguel Hinostroza[2]
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 Milne[1] J.M.R. Graham[2]
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 Gu[1] Antonio Carlos Fernandes[2] Joel S. Sales Junior[3]
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 Plas[1] Arthur Veldman[1] Henk Seubers[1] Joop Helder[2] Ka-Wing Lam[2]
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 Choi[1] Benjamin Bouscasse[1] Sopheak Seng[2]
Guillaume Ducrozet[3] Lionel Gentaz[1] Pierre Ferrant[3]
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 Bihs[1] Arun Kamath[1] Ankit Aggarwal[1] Csaba Pakozdi[2]
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. Gambarine[1] André L. C. Fujarra[2] Andre M. Kogishi[3]
Rodolfo T. Gonçalves[4] Luiz E. B. Minioli[2]
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 Dommergues[1] Bruno Sainte-Rose[1] Zaki Abiza[2]
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 Konstantinidis[1] Laszlo Baranyi[2]
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 Garlapati[1] Ravi Patel[1] Seemanth Moideenkunju[2] Abhinaya Srinivas Bhasuru[1]
Surendra Singh Kachhwaha[1] V V Arunkumar Surisetty[2] Suchandra Aich Bhowmick[2]
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 Janjic[1] Sarah Gallagher[2] Emily Gleeson[2] Frederic Dias[1]
1. University College Dublin, Dublin, Ireland; 2. Met Éireann, Dublin, Ireland

Wave Farms and Coastal Morphodynamics OMAE2018-77895
Javier Abanades[1] **Gregorio Iglesias**[2]
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 Herduin[1] Christophe Gaudin[1] Lars Johanning[2]
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 Wang[1] Mark J Cassidy[2] Britta Bienen[1]
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 OMAE2018-78337
Shuzhao Li[1] Zhongchang Wang[1] Xu Jia[1] Linlin He[2]
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 Wang[1] Run Liu[1] Chao Liang[1] Hui Xiao[2] Jun Wan[2]
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 Inoue[1] Daisuke Sugiyama[1] Takayuki Shimotomai[2]
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 Kaneko[1] Ryota Wada[1] Masahiko Ozaki[1] Tomoya Inoue[2]
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 Khalifeh[1] Arild Saasen[1] Helge Hodne[1] Hem Bahadur Motra[2]
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 Lund[1] Jan David Ytrehus[1] Ali Taghipour[1] Shreyansh Divyankar[2] Arild Saasen[2]
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 Xu[1] Vahid Hassani[2] Carlos Guedes Soares[1]
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 Ruiz[1] Marc Mansuy[1] Guillaume Delefortrie[2] Marc Vantorre[1]
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 Xu[1] Vahid Hassani[2] Miguel Hinostroza[3] Carlos Guedes Soares[4]
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. Hallak[1] Manuel Ventura[2] Carlos Guedes Soares[3]
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 Li[1] **Qiang Fu**[1] Zhi-Fu Du[1] Yuan Xiao[1] Rong-Gui Han[1] Hai-Hong Sun[2]
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 Yuhan, 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) Huang[1] Sam Ryu[2] Donghwan Lee[3] Charles Hughes[2]
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 Quispe[1] Segen Estefen[1] Nilo de Moura Jorge[2] Marcelo Igor Lourenço Souza[2]
1. COPPE/UFRJ, 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. Amante[1] Segen Estefen[2]
1. Petrobras, Rio de Janeiro, RJ, Brazil; 2. COPPE/UFRJ, Rio de Janeiro, RJ, Brazil

An Evaluation of Submarine Collisions to a TLP OMAE2018-78364
Martin Storheim[1] Cato Dørum[2]
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 Szczepanski[1] **Cheslav Balash**[1] Marius Martens[2]
1. Edith Cowan University, Perth, WA, Australia; 2. INTECSEA, Perth, WA, Australia

Fatigue Assessment of Dented Rigid Risers OMAE2018-78173
Elvis J Osorio Santander[1] Carlos Magluta[2] Ney Roitman[2] Bianca Pinheiro[2]
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 Yu[1] Chunsheng Wang[1] Qingping Li[1] Yan Li[1] Xiaosong Zhu[1] Qing Wang[1] Cheng Bing[1] Yaqi Qing [2]
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 Tong[1] Liang Cheng[2] Hongwei An[1] Terry Griffiths[1]
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 Hong[1] Yuxi Wang[1] Jiankun Yang[1] **Segen Estefen**[2] Marcelo Igor Lourenço Souza[1]
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 Kikukawa[1] **Shigeru Tabeta**[2]
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 Sasa[1] Masao Mitsui[2] Masahiko Tamura[2]
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 Tajima[1] Akio Kuroyanagi[2] Ryo Sugahara[2]
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 Dobashi[1] Akio Kuroyanagi[2] Ryo Sugahara[2]
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 Costa[1] **Antonio Carlos Fernandes**[2] Joel S. Sales Junior[1] Peyman Asgari[2]
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 Tavakoli[1] Abbas Dashtimanesh[2] **Prasanta K Sahoo**[3]
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 Ding[1] Zao-Jian Zou[1] Jing-Ping Wu[2]
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 Xie[1] Aurélien Babarit[2] Francois Rongère[1] Alain Clément[1]
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 Liferov[1] Tom McKeever[2] Francesco Scibilia[1] Sigurd Teigen[3] Andreas Kjoel[4] Erik Almkvist[4] Joakim K. Lindvall[5]
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 Liferov[1] Nicolas Serre[2] Sofien Kerkeni[3] Robert Bridges[4] Fengwei Guo[5]
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 Neville[1] Erik Almkvist[2] Francesco Scibilia[3] Joakim K. Lindvall[4] Pavel Liferov[3]
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 Satheesh[1] Clèment Haeck[2] Francisco Huera-Huarte[1]
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 Crosswell[1] **Cheslav Balash**[2]
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 Ren[1] Shixiao Fu[1] Mengmeng Zhang[1] Jingyun Cheng[2] Peimin Cao[2]
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 Gaskill[1] Jie Wu[2] Decao Yin[2]
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. Assi[1] Reinaldo Orselli[1] Mariana Silva-Ortega[2]
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 Sirnivas, NREL, USA

Session Co-Chair: Chen-Chou Lin, National Taiwan Ocean University, Taiwan

Numerical Model Development and Validation for the WECCCOMP Control Competition OMAE2018-78094
Nathan Tom[1] **Kelley Ruehl**[2] Francesco Ferri[3]
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 Penalba[1] John V. Ringwood[2]
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 Novo[1] **Alexis Merigaud**[2] Giovanni Bracco[1] Sergej A. Sirigu[1]
Giuliana Mattiazzo[1] John V. Ringwood[3]
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 Karimirad[1] Constantine Michailides[2]
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. Talukdar[1] Vinayak Kulkarni[2] Ujjwal K. Saha[2]
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 Yue[1] Dashu Li[1] Zhichuan Li[1] Gang Xiao[2] Li Zhang[1] Yonghu Wu[2] Ting Yu[2]
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. Lee[1] Jasmin B.T. McInerney[2] **Fauzi A. Hardjanto**[1] Shuhong Chai[1]
Remo Cossu[3] Zhi Q. Leong[1] Alexander L. Forrest[2]
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-Alvarez[1] Fernando Garcia Ruiz[2] Daniel Merino-Garcia[1]
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 Odan[1] Mohammad Aziz Rahman[2] Amer Aborig[1]
Yan Zhang[1] Syed Imtiaz[1] Faraj Ben Rajeb[1]
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 Rajeb[1] Mohamed Odan[1] Syed Imtiaz[1] Yan Zhang[1]
Amer Aborig[1] **Mohammad Aziz Rahman**[2]
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 Ihmoudah[1] **Mohammad Aziz Rahman**[2] Stephen Butt[1]
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 CO_2 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 Udegbunam, 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, Høvik, Norway

Cement Hydration in the Presence of Nano Magnesium Oxides with Controlled Reactivity OMAE2018-78254
Narjes Jafariesfad, 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 OMAE2018-77669
Lokukaluge Prasad Perera[1] Brage Mo[2]
1. UiT The Arctic University of Norway, Tromso, Norway; 2. SINTEF Ocean, Trondheim, Norway

Hybrid Tool to Prevent Ship Propeller Erosion OMAE2018-78237
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 OMAE2018-78514
Jasna Prpic-Orsic[1] Kenji Sasa[2] Odd Faltinsen[3] Marko Valcic[4]
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 OMAE2018-77101
Baran Yeter[1] Yordan Garbatov[2] Carlos Guedes Soares[3]
1. Centre for Marine Technology and Ocean Engineering (CENTEC), University of Lisbon, Instituto Superio, Lisbon, Portugal; 2. University of Lisbon, Lisboa, Portugal; 3. Instituto Superior Técnico, Universidade de Lisboa, Lisboa, Portugal

Drilling String Vibration: Modelling and Simulation OMAE2018-77685
María J. Legaz[1] Sergio Amat[2] Gustavo E. Henríquez Velez[3]
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 Global Analysis OMAE2018-77902
Thomas Viuff[1] Xiang Xu[2] Bernt Leira[1] Ole Øiseth[1]
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 OMAE2018-78029
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 OMAE2018-77214
Kristoffer Hoyem Aronsen[1] Sergey Kuzmichev[1] Guttorm Grytoyr[1]
Kathrine Gregersen[1] Finn Kirkemo[2] Lorents Reinas[3]
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 OMAE2018-78102
Max Russo[1] Scott Benson[2] Eivind Rasten[3] Ward Avery[4] Michael Ash[2] Paul LeGrow[2]
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 OMAE2018-78110
Max Russo[1] Martin Poirier[2] Rohit Srikonda[1] Martin Karlstad[3] Kjetil Abelsen[3] Curt Kling[4]
1. Kongsberg Maritime, Houston, TX, USA; 2. Total Exploration & Production, Rio de Janeiro, RJ, Brazil; 3. Kongsberg Maritime, Asker, Norway; 4. NOV, Housotn, TX, USA

Learnings from Strain Measurements on an In-field Conductor and Wellhead System OMAE2018-78521
Rohit Shankaran[1] Alexander Rimmer[1] Alan Haig[2]
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 OMAE2018-78301
Rohit Srikonda[1] Rune Haakonsen[1] Max Russo[1] Peri Periyasamy[2]
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 Hejazi[1] Andrew Grime[1] Mark F. Randolph[2] Mike Efthymiou[1]
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 Levasseur[1] Charles Leca[1] Francois Petrie[2] Benjamin Rousse[2]
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. Hedengren[1] David V. Brower[2] J. Conrad Wilson[2] Geoff High[3] Karl Witherow[3]
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 Sanchis[1] **Sonny Andersson**[1] Atle Jensen[2]
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 Fucile[1] **Gabriele Bulian**[1] Claudio Lugni[2]
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 Tian[1] Mingyue Liu[1] Shisheng Wang[2] Xinru Wang[1] Haobo Li[1]
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 Baudry[1] Jean-Marc Rousset[2]
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 Freitas[1] **Vinicius Vileti**[2] Paulo de Tarso T. Esperança[3] Sergio H. Sphaier[4]
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 Vilsen[1] Thomas Sauder[2] Martin Føre[3] Asgeir J. Sørensen[2]
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 Zhang[1] **Bing Ren**[1] Yongxue Wang[1] Hongjie Wen[2]
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 Meneses[1] Javier Sarmiento[1] Daniel de los Dolores[1] David Blanco[1] Raul Guanche[1] Inigo Losada[1] Maria F. Rodriguez de Segovia[2] Manuel J. Ruiz[2] Miguel A. Martin[2] Maria J. Conde[2] Francisco Esteban[2]
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 Serre[1] Sofien Kerkeni[2] Dmitry Sapelnikov[1] Cyrille Akuetevi[2] Sergiy Sukhorukov[3] Fengwei Guo[4] Ivan Metrikin[5] Pavel Liferov[6]
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 Almkvist[1] Andreas Kjoel[1] Claes Tisell[1] Joakim K. Lindvall[2] Claes Ingers[3] Anders Hansson[4] Maxime Dupuy[5]
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 Kjoel[1] Erik Almkvist[1] Tom McKeever[2] Pavel Liferov[3] Joakim K. Lindvall[4]
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 Iseskär
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 Wu[1] Johnathan Green[1] Subajan Sivandran[2]
1. BMT, Teddington, United Kingdom; 2. BMT, Singapore, Singapore

Development of a Lifting-Line-based Method for Preliminary Propeller Design OMAE2018-77995
Jose Rodolfo Chreim[1] Joao Lucas Dozzi Dantas[2] Eduardo Tadashi Katsuno[1] Gustavo R. S. Assi[1] Marcos Pimenta[1]
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 Joshi[1] Pardha Saradhi Gurugubelli[1] Yun Zhi Law[1] **Rajeev Kumar Jaiman**[1] Peter Francis Bernad Adaikalaraj[2]
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 Dessi[1] **Giorgia Leonardi**[1] Fabio Passacantilli[2]
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 Benreguig[1] Jimmy Murphy[1] Wanan Sheng[2]
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 OMAE2018-78163
Nikolaos I. Xiros[1] Michael Bernitsas[2] Hai Sun[2] Ralph Saxton[1] Juliette W. Loup[1]
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 OMAE2018-78314
Jürgen Grabe, Evelyn Heins
Hamburg University of Technology, Hamburg, Germany

Experimental Study on Gravity Anchor for Optimum Design of Shear Key OMAE2018-78390
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 Geekiyanage, 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 Mohamed[1] Abdelsalam Abugharara[1] Mohammad Aziz Rahman[2] **Stephen Butt**[1]
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) OMAE2018-78001
Daniel Barreca[1] Matthew Franchek[2] **Mayank Tyagi**[1]
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 Villegas[1] María del Carmen Echeverrias[2]
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 Jaculli[1] José Ricardo P. Mendes[1] Kazuo Miura[2] Marcio Yamamoto[2]
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 OMAE2018-78323
Sergio N. Bordalo[1] Elinaldo S. Silva[2]
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. Biazussi[1] Cristhian Porcel Estrada[1] William Monte Verde[1] Antonio C. Bannwart[1] Valdir Estevam[1] Paulo S. M. V. Rocha[2] Salvador J. Alves Neto[2] Alexandre Tavares[2]
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 Grindheim[1] Inge Revhaug[2] Ken Welker[1] Peder Solheim[1] Egil Pedersen[3]

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, Tromso, Norway

Autonomous Ship Navigation under Deep Learning and the Challenges in COLREGs OMAE2018-77672

Lokukaluge Prasad Perera, *UiT The Arctic University of Norway, Tromso, Norway*

All Round Approach for the Design of a New Escort Tug Family OMAE2018-77914

Massimo Figari[1] Luca Martinelli[2] Michele Viviani[1] Diego Villa[1] Benedetto Piaggio[1] Lucia Enoizi[2]

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 Hinostroza[1] Haitong Xu[2] Carlos Guedes Soares[2]

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 Wang[2] Wenyong Tang[2]

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 Song[1] **Zhiqiang Hu**[2]

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 Qian[1] Enen Yu[1] Jinlan Zhang[2] Dawei Zhan[1] **Yuansheng Cheng**[1]

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 Zhao[1] Yingying Wang[1] Liwei Li[2] Chao Yang[1] Yang Du[1] Haoran Chen[1] Menglan Duan[1]

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. Monteiro[1] Ricardo S. Minette[2] Ricardo H. Gutiérrez[3] Luiz A. Vaz[4]
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. Brower[1] Nicole L. Bentley[2] **John D. Hedengren**[3] Robert M. Kipp[1] Suy Q. Le[2] Calvin H. Seaman[1] Henry H. Tang[4] J. Conrad Wilson[1]
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 Yang[1] **Segen Estefen**[2] Marcelo Igor Lourenço Souza[1] Yuxi Wang[1] Cheng Hong[1]
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 OMAE2018-77197
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 OMAE2018-77921
Stefano Gaggero, **Diego Villa**
University of Genoa, Genoa, Italy

Analysis of Hydrophobic Painting in Model-scale Marine Propeller OMAE2018-78209
Eduardo Tadashi Katsuno[1] Joao Lucas Dozzi Dantas[2] Emilio Carlos Nelli Silva[1]
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 OMAE2018-78213
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 Patel[1] **Suhail Ahmad**[2] B. P. Patel[2]
1. IIITDM Jbalpur, 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 Mannion[1] Stephen Nash[1] Sean Leen[1] Vincent McCormack[2]
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 Cheng[1] Zhen Gao[2] Torgeir Moan[3]
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 Hildebrandt[1] **Jannis Landmann**[1] Thorsten Ongsiek[1] Nils Goseberg[2]
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 Feng[1] Fenghua Xiong[2] **Sheng Peng**[1] Xiandao Feng[1] Ziyu Xia[3]
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 Sasikumar[1] Arun Kamath[2] Onno Musch[3] Arne Erling Lothe[1] Hans Bihs[2]
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 Cappietti[1] Andrea Esposito[1] Maximilian Streicher[2] Andreas Kortenhaus[2] Babette Scheres[3] Holger Schuettrumpf[3] Matthias Hirt[3] Bas Hofland[4] Irene Simonetti[1] Xuexue Chen[4]
1. University of Florence, Florence, Italy; 2. Ghent University, Gent, 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 Cheng[1] Liu Yi Huang[1] Yi Ni[1] Fenfang Zhao[1] Xinxin Wang[1] Zhenlin Liang[2] Yan Li Tang[1]
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 Kerkeni[1] Pavel Liferov[2] Nicolas Serre[3] Robert Bridges[4] Finn Jorgensen[5]
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 Heyn[1] Francesco Scibilia[2] Roger Skjetne[1]
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 Teigen[1] Joakim K. Lindvall[2] Ilija Samardzija[3] Roar I. Hansen[4]
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 Muralha[1] **Luis Eca**[1] Antonio Maximiano[2] Guilherme Vaz[3]
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. Rodríguez[1] Francisco de Almeida Taveira-Pinto[2] Paulo Jorge Rosa Santos[2]
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 Umeda[1] Hiroki Goto[2] Toshifumi Fujiwara[1] Tomoki Taniguchi[1] Shunji Inoue[1]
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 Manuel[1] **Phong Nguyen**[1] Ryan Coe[2]
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 Touzón[1] Borja de Miguel[2] Vincenzo Nava[3] Victor Petuya[4]
Iñigo Mendikoa[5] Francesco Boscolo[5]
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 Windt[1] Josh Davidson[1] Akram Benazzou[2] John V. Ringwood[3]
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 Abanades[1] Juan Pablo Torregrosa[2]
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 Hoogeveen[1] Hugo Hofstede[1] Amir M. Kaynia[2]
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 Hong[1] Daesung Lim[2] Doowon Seo[2] **Jaeku Jeon**[2] Kwangseok Chae[3] Jongsub Lee[1]
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 Anusic[1] Barry Michael Lehane[2] Gudmund Eiksund[3] Morten Albjerg Liingaard[4]
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 Feng[1] Catalin Teodoriu[2]
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 Ezeakacha[1] Saeed Salehi[2] **Raj Kiran**[1]
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 Badicioiu[1] Mihaela Caltaru[1] **Mihail Minescu**[1] Catalin Teodoriu[2]
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 Balka[1] Ayman Ghazzawi[2] Hernan Melgares Escalera[3]
1. Schlumberger, Al-Khobar, Saudi Arabia; 2. Schlumberger, Khobar, Saudi Arabia;
3. Schlumberger, Abudhahi, 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 OMAE2018-77424
Jialun Liu[1] Robert Hekkenberg[2] Bingqian Zhao[3]
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 Ren[1] **Chen Xu**[1] Xueqian Zhou[1] Serge Sutulo[2] Carlos Guedes Soares[3] Chenfeng Li[1]
1. Harbin Engineering University, Harbin, China;
2. Centre for Marine Tech & Ocean Energy, IST, Lisbon Uni
versity, 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 Crashworthness 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 Liu[1] Lin Chen[2] Xianting Liao[2] Ling Zhu[3] Carlos Guedes Soares[4]
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 OMAE2018-77379
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 Sha[1] Jorgen Amdahl[1] Cato Dørum[2] Zhaolong Yu[1]
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 Villavicencio[1] Bin Liu[2] **Kun Liu**[3]
1. Royal IHC, Kindrdijk, 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:*

SCIENTIFIC TRACK

- 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

Registration is now live!
Register for the conference and book your accommodation today at www.iowtc2018.com

Sponsorship opportunities are still available!
Contact Dominique Roddier by phone at +1-415-513-2654 or email at droddier@principlepowerinc.com

CONFERENCE CO-CHAIRS:

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Krish Thiagarajan Sharman, Ph.D., Univ. of Massachusetts Amherst

Email: iowtc@seatoskymeetings.com

www.iowtc2018.com

San Francisco, California, USA

Technical Tour: Friday, June 22

CEHIPAR CENTRO DE EXPERIENCIAS HIDRODINÁMICAS DE EL PARDO

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 Torreon, 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 (OMAE) 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
	OMAE 2018 Conference Registration	13:00 – 20:00	Italy-Germany Gallery
	OMAE 2018 Conference Welcome Reception	19:00 – 20:30	Venecia / Milán / Roma
Monday, June 18	OMAE 2018 Conference	See detailed program for session locations and times.	
Tuesday, June 19	OMAE 2018 Conference	See detailed program for session locations and times.	
Wednesday, June 20	OMAE 2018 Conference	See detailed program for session locations and times.	
	OMAE 2018 Conference Banquet	20:00 – 24:00	Palacio del Negralejo
Thursday, June 21	**Outreach Breakfast / Feedback Session**	07:30 – 10:00	Paris
	OMAE 2018 Conference	See detailed program for session locations and times.	
Friday, June 22	OMAE 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

OOAE

ASME
SETTING THE STANDARD

University of Strathclyde Glasgow

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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**

To submit your abstract, visit:
www.asme.org/events/omae

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

Listing of Committees & Organizers

Committees & Organizers

Dr. Raúl Guanche García,
Conference Chair
Dr. Francisco Huera-Huarte,
Conference Chair
Dr. Antonio Souto-Iglesias,
Conference Chair
Dr. Solomon C. Yim,
Technical Program Chair

Local Organizing Committee

Carlos Nieto Adreu
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Javier Calderon Sánchez
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Volunteers

The Conference Organizing Committee would like to express their gratitude to all the OMAE 2018 volunteers. We sincerely appreciate all the support they provide!

Technical Program Committee

SYMP 1: Offshore Technology

Symposium Coordinator: R. Cengiz Ertekin, *Harbin University*

SYMP 2: Structures, Safety and Reliability

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*

SYMP 5: Ocean Space Utilization

Symposium Coordinators: Tomoki Ikoma, *Nihon University;* Dominique Roddier, *Principle Power*

SYMP 6: Ocean Engineering

Symposium Coordinators: Jon Mikkelsen, *University of British Columbia;* SolomonYim, *Oregon State University*

SYMP 7: Polar and Arctic Sciences and Technology

Symposium Coordinators: Walter Kuehnlein, *sea2ice Ltd. & Co. KG;* Sören Ehlers, *Technical University of Hamburg*

SYMP 8: CFD & FSI

Symposium Co-Coordinators: Yiannis Constantinides, *Chevron Energy Technology Company;* Owen H. Oakley, Jr, *Retired*

SYMP 9: Ocean Renewable Energy

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)*

Topic Organizers

SYMP 1: Offshore Technology

1-1: Offshore Platforms: Anil Sablok, *TechnipFMC*
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 Sriramula, *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 Sriramula, *University of Aberdeen*
2-10: Collision and Crashworthiness: Sören Ehlers, *Technical University of Hamburg;* Zhiqiang Hu, *Newcastle University*
2-11: Ultimate Strength: Masahiko Fujikubo, *Osaka University*
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, *Institude of Industrial Science, University of Tokyo*
5-8: Utilization of Seawater: TBA
5-9: Coastal Zone Management: Shigeru Tabeta, *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*
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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*

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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*

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8-6: Advanced Computation - Software: Guilherme Vaz, *MARIN*
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10-4: Pile Foundations II: Manuela Kanitz, *Hamburg University of Technology*
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10-6: Spudcans and Shallow Foundations: Xiaowei Feng, *University of Western Australia*
10-7: Pipelines: Yuzhu Li, *University of Stavanger*

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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*
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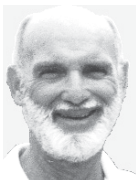

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