

ATZ live

SMART CHASSIS

More safety and comfort through networked systems

NEW CHASSIS SYSTEMS

Systems for electric, hybrid and conventional vehicles

INNOVATIVE DEVELOPMENT METHODS

Design, simulation, validation

/// KEYNOTE SPEECHES

BMW Group | Volkswagen AG |
Dr. Ing. h.c. F. Porsche AG |
Daimler AG | IHS Automotive |
Munich University of Applied
Sciences | AUDI AG

/// ONE FOR ALL

Four congresses
in one event



Simultaneous Interpreting
German and English

chassis.tech + steering.tech + brake.tech + tire-wheel.tech

chassis.tech plus

4th International Munich Chassis Symposium
13 and 14 June 2013 | Munich | Germany



SCIENTIFIC ADVISORY BOARD



Prof. Dr. Peter E. Pfeffer
Munich University of Applied Sciences (MUAS)
Scientific Director of the Symposium
Head of chassis.tech plus section



Dr. Veit Held
Adam Opel AG
Head of chassis.tech section



Dr. Manfred Harrer
Dr. Ing. h.c. F. Porsche AG
Head of steering.tech section



Karl Friedrich Wörsdörfer
Continental AG
Head of brake.tech section



Victor Underberg
AUDI AG
Head of tire-wheel.tech section



Wolfgang Siebenpfeiffer
Editor-in-Charge
ATZ | MTZ | ATZelektronik

Scientific Director of the Symposium

Prof. Dr. Peter E. Pfeffer,
Munich University of Applied Sciences

Plenary section chassis.tech plus

All members of the Scientific Advisory Boards of the parallel sections

chassis.tech section

Uwe Bleck, Vehicle Dynamics and Engineering
Prof. Dr. Lutz Eckstein, RWTH Aachen University
Dr. Christoph Elbers, ZF Friedrichshafen AG
Prof. Dr. Stefan Gies, Volkswagen AG
Dr. Veit Held, Adam Opel AG
Prof. Dr. Markus Lienkamp, TU Munich
Stefan Resch, TÜV SÜD Automotive GmbH
Bernhard Schick, IPG Automotive GmbH
Heinrich Schürr, ZF Friedrichshafen AG
Christoph Schulenburg, Daimler AG
Martin Schwarz, BMW Group
Toshimichi Takahashi, Toyota Motor Europe, Belgium
Prof. Dr. Michael Valasek, Czech TU in Prague, Czech Republic
Prof. Dr. Pim van der Jagt, Ford Forschungszentrum Aachen GmbH

steering.tech section

Dr. Andreas Bootz, BMW Group
Prof. Dr. Dr. Hans-Hermann Braess (honorary chairman)
Michael Decker, Daimler AG
Alexander Gaedke, ZF Lenksysteme GmbH
Dr. Manfred Harrer, Dr. Ing. h.c. F. Porsche AG
Frank Lubischer, Nexteer Automotive, USA
Hirofumi Matsuoka, JTEKT Corporation, Japan
Uwe Mierisch, Daimler AG
Prof. Dr. Manfred Plöchl, TU Vienna, Austria
Bill Post, Ph.D., Honda R&D Americas, Inc.
Heiko Ruck, Takata AG
Dr. Alois Seewald, TRW Automotive GmbH
Michael Wellenzohn, ThyssenKrupp Presta AG, Liechtenstein

brake.tech section

Prof. Dr. Klaus Augsburg, TU Ilmenau
Prof. Dr. Karlheinz Bill, HTW Berlin
Prof. Dr. Eberhard Drechsel, formerly MUAS
Ulrich Dumm, BMW Motorrad
Frank Kästner, Robert Bosch GmbH
Klaus Kirchmeier, MAN Truck & Bus AG
Ralph Lauxmann, Knorr-Bremse Sfn GmbH
Prof. Dr. Giampiero Mastinu, Politecnico di Milano, Italy
Dr. Ralph Mayer, Daimler AG
Jan Münchhoff, AUDI AG
Donatus Neudeck, Dr. Ing. h.c. F. Porsche AG
Karl Friedrich Wörsdörfer, Continental Teves AG & Co. oHG

tire-wheel.tech section

Prof. Masato Abe, Kanagawa Institute of Technology, Japan
Stefan Bender, Goodyear Dunlop Tires Germany GmbH
Stefan Dittmar, TÜV SÜD Automotive GmbH
Prof. Dr. Frank Gauterin, Karlsruhe Institute of Technology (KIT)
Hans-Rudolf Hein, Bridgestone Europe NV/SA, Belgium/Italy
Andreas Herbert, Fraunhofer LBF
Helge Hoffmann, Michelin Reifenwerke AG & Co. KGaA
Dr. Jens Holtschulze, BMW Group
Dr. Günter Leister, Daimler AG
Michael Staude, TÜV SÜD Automotive GmbH
Victor Underberg, AUDI AG
Dr. Burkhard Wies, Continental Reifen Deutschland GmbH



chassis.tech_{plus}



> >>

WELCOME

The pressures on the process of developing of chassis systems remain at a high level. Current trends in research and development are characterized in particular by the ongoing need to reduce CO₂ emissions and to improve driving dynamics, ride comfort and safety even further.

These challenges are affecting vehicle manufacturers and suppliers in a number of different ways. The key concepts include enhanced system networking and innovative development methods in design, simulation and validation, together with building block strategies and modular systems. As a result, even closer collaboration will be required in future between researchers and developers in the various areas of vehicle development.

On 13 and 14 June 2013, chassis.tech plus will bring together chassis, brake, steering and tire/wheel specialists for a unique event. On behalf of the scientific advisory board we would like to welcome you to the 4th International Munich Chassis Symposium, which is the world's largest conference of its kind. Prestigious keynote speakers will give an invaluable overview of the future challenges facing the field of chassis development and the possible solutions. As in previous years, the symposium will consist of four parallel sections focusing specifically on the themes of chassis, brakes, steering and tires/wheels. A plenary section about the effects of future driver assistance systems on chassis development will complete the program of lectures.

We look forward to welcoming you to the Hotel Bayerischer Hof in the heart of Munich and wish you a pleasant journey and interesting and stimulating time at the International Munich Chassis Symposium.

Prof. Dr. Peter E. Pfeffer
Munich University of Applied Sciences
Scientific Director of the Symposium

4TH INTERNATIONAL MUNICH CHASSIS SYMPOSIUM

One for All – Four Congresses in One Event

The International Munich Chassis Symposium has established itself as a key international meeting place for the chassis community in the fields of the chassis, steering, brakes and wheels/tires.

The **1st day** will be taken up by the interdisciplinary section **chassis.tech plus** with two parallel strands of lectures in the afternoon. The symposium will focus on overriding issues relating to chassis systems and vehicle dynamics, before dividing up

on the **2nd day** into the following four parallel sections concentrating on the chassis, steering, brakes and wheels/tires:

chassis.tech
steering.tech
brake.tech
tire-wheel.tech

In the afternoon, the parallel sections will merge together again for the interdisciplinary section **chassis.tech plus**. This year the focus is on the effects of future driver assistance systems on chassis development.

Participants can move freely between the four parallel sections at any time. The individual parallel sections scheduled for the second day – **chassis.tech**, **steering.tech**, **brake.tech**, **tire-wheel.tech** – can be booked separately at a reduced registration fee.

For the whole duration of the event, the **accompanying trade exhibition** will allow you to gather information on innovative products and services offered in the field of chassis development.

PARTICIPANTS

- : Manufacturers of passenger cars and commercial vehicles and their suppliers
- : Development service providers
- : Universities and research institutes
- : Manufacturers of measuring, testing and simulation systems
- : Authorities, associations and testing institutes

EVENING RECEPTION IN MUNICH RATSKELLER

Thursday 13 June 2013 | 18:30
in Munich Ratskeller
Marienplatz 8 | 80331 Munich

Experience a cosy evening in the traditional Ratskeller. We are happy to invite you to attend an evening of stimulating conversation with colleagues and to offer you the chance to enjoy Bavarian culinary delicacies.

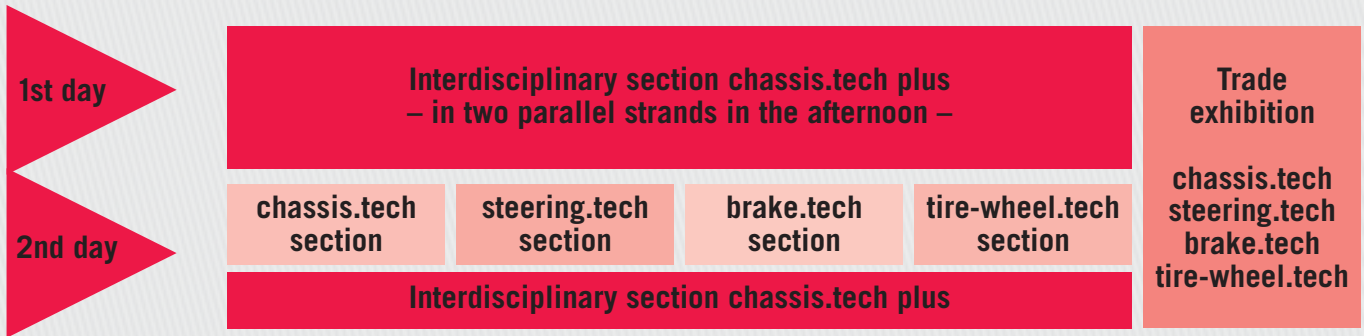
The foundation stone of the Ratskeller was laid on 25 August 1867. However, the first landlord and landlady did not move into the premises of the new town hall until 1 August 1874, the date when the city council started its activities there.

In accordance with the romantic spirit of the age, Georg von Hauberisser designed the edifice as well as the furnishings of the Ratskeller in the 16th century Gothic style. Munich painters such as Heinrich Schlitt and Josef Rösl designed the various vaults.

The Ratskeller, established ever since then as a place of civic hospitality, extends a hearty welcome with its typical Bavarian charm.

www.ratskeller.com





MAIN TOPICS

INTERDISCIPLINARY SECTION CHASSIS.TECH PLUS

New chassis systems

- : Chassis innovations in passenger cars and commercial vehicles
- : Development and testing
- : Rear wheel steering

Driver and handling characteristics

- : Statistical evaluation on the road
- : Optimizing handling in a full vehicle model
- : Sensitivity analysis in an early conceptual layout

Ride comfort

- : Automated optimization
- : Comfort versus safety
- : Functional development

Air suspension

- : New systems
- : Virtual development
- : Ride comfort and heat elimination

Driver assistance systems and chassis

- : New DAS for longitudinal and lateral dynamics
- : Interactions between DAS and chassis
- : Safety and comfort

PARALLEL SECTIONS

CHASSIS.TECH SECTION

Regulated damping systems

- : Driving dynamics and ride comfort
- : Electromechanical rotary damper
- : Motion sensors and the control ECU

Virtual processes

- : Simulation-based prognosis
- : Integrated vehicle dynamics control
- : Functional safety

Driver assistance systems and driving dynamics

- : Influence of tire adhesion
- : Force distribution in electric cars
- : Impacts on chassis design

BRAKE.TECH SECTION

New brake systems

- : ABS for off-road motorcycles
- : Electrohydraulic brake systems
- : Lightweight rotors

NVH and brake design

- : Thermal dimensioning
- : Identification of dynamic moduli
- : Brake noise simulation

New brake functions

- : Feedback of brake pedal regeneration
- : System modularization
- : μ -split in emergency braking

STEERING.TECH SECTION

New steering and control systems

- : Electric power steering for commercial vehicles
- : Multifunctional control systems
- : Developments in electric motors for EPS

Human-machine interface

- : Steering wheel systems
- : Torque feedback control
- : Hydraulic steer-by-wire fallback solutions

Development methods for steering systems

- : Optimizing steering noise
- : Model-based engineering processes

TIRE-WHEEL.TECH SECTION

New tires and wheels

- : Tires for future eco-friendly vehicles
- : Developments in motorcycle tires and wheels
- : Fatigue strength of composite wheels

Traction and rolling resistance

- : Simulating tire temperature in motor sport
- : Estimating friction potential
- : Rolling resistance under real-life conditions

Testing and simulation

- : Fully automated brake test system
- : Tire damage caused by poor road conditions

>> **CHASSIS.TECH PLUS SECTION** Festsaal

Moderator:

Prof. Dr. Peter E. Pfeffer, Automotive Engineering,
Munich University of Applied Sciences

8:00 Registration

9:15 **Welcome and opening**

Dr. Alexander Heintzel,
Editor-in-Chief ATZ | MTZ | ATZelektronik;
Prof. Dr. Peter E. Pfeffer, Automotive Engineering,
Munich University of Applied Sciences

KEYNOTE SPEECHES

THE CHASSIS OF THE FUTURE

9:30 **Born electric –**

the driving dynamics of the new BMW i3

Peter Langen, Senior Vice President Driving
Dynamics, U. Gaedicke, BMW Group

10:00 **Future vehicle concepts**

Dirk Isgen, Research and Development,
Head of Vehicle Concepts, Volkswagen AG

10:30 **Opening of the accompanying trade exhibition**

and refreshment break in the exhibition area

TRENDS IN CHASSIS DEVELOPMENT

11:00 **50 years 911 – the perfecting of the chassis**

Dr. Manfred Harrer, General Manager
Vehicle Dynamics and Performance,
Dr. H.-J. Görich, G. Wahl, U. Reuter,
Dr. Ing. h.c. F. Porsche AG

11:30 **Vehicle system dynamics challenges
on the way to autonomous driving**

Prof. Dr. Dieter Ammon, Senior Manager
Vehicle Dynamics, Daimler AG

12:00 **ADAS: A Systems Approach –
a worldwide overview**

N. N., IHS Automotive

12:30 Lunch together in the exhibition area

>> PARALLEL STRAND I

Festsaal

Moderator:

Stefan Resch, International Strategy and Operations – Automotive Division, TÜV SÜD Automotive GmbH

NEW CHASSIS SYSTEMS

- 14:00 **The all-new Range Rover – engineering for breadth of capability**
David Waide, Director Chassis Development, Jaguar Land Rover Ltd., UK
- 14:30 **The ZF independent front suspension concept IS 80 – application in trucks and buses**
Hans Wimmer, Team Manager Engineering Steering Axles/Technical Approval Commercial Vehicle Axles (TADS), K. Gell, ZF Friedrichshafen AG
- 15:00 **Performance-oriented realization of a rear wheel steering system for the Porsche 911 Turbo**
Daniel Lunkeit, responsible development engineer for the rear wheel steering system, Johannes Weichert, function development engineer for the rear wheel steering system, Dr. Ing. h.c. F. Porsche AG
- 15:30 Refreshment break in the exhibition area

DRIVER AND HANDLING CHARACTERISTICS

- 16:00 **Investigation of handling characteristics of normal drivers in curve driving situations**
Dr. Marcus Wagner, Development Engineer, T. Grauer, Robert Bosch GmbH; A. Schneider, TREngineering powered by IAV GmbH
- 16:30 **DOE-based vehicle handling performance optimization, using a full vehicle model with multi-body system suspensions in multiple real time**
Bernhard Schick, Managing Director Business Development & Innovation, S. Schmidt, E. Schmidt, W. Schick, IPG Automotive GmbH
- 17:00 **Variance-based sensitivity analysis of a non-linear two-track model for vehicle design in the early conceptual layout**
Markus Eichstetter, Driving Dynamics, Dr. M. Schleich, BMW Group; Prof. Dr. M. Jautze, Process Measuring and Control Technology, University of Applied Sciences Landshut; Prof. Dr. S. Müller, Mechatronics in Mechanical and Automotive Engineering, TU Kaiserslautern

>> PARALLEL STRAND II

Palaishalle

Moderator:

Thomas Nickels, Senior Vice President Engineering New Light Range, MAN Truck & Bus AG

RIDE COMFORT

- 14:00 **A drive-dynamic online-optimization routine for an active anti-roll system**
Thomas Mirwaldt, Chassis Development Anti Roll Stabilization Systems, Dr. Ing. h.c. F. Porsche AG; Prof. Dr. P. Eberhard, Institute of Engineering and Computational Mechanics, University of Stuttgart
- 14:30 **Variable damping rates – how to calibrate them in the tradeoff between comfort and safety**
Richard Hurdwell, Vehicle & Dynamics Consultant, Hurdwell Engineering Ltd., UK; Dr. Hans-Michael Koegeler, Skill and Know How Manager/Calibration Applications, F. Pfister, B. Kanya, AVL List GmbH, Austria
- 15:00 **Improved functional modeling in comfort analyses for hydraulic suspension testing**
Stéphane Barale, Conception Suspension, A. Plisson, PSA Peugeot Citroën Automobiles, France; Dr. Marc Alirand, Vehicle System Dynamics Solution Manager, J. Lagnier, LMS Imagine, France; J. Guillet, ALTEN, France
- 15:30 Refreshment break in the exhibition area

AIR SUSPENSION

- 16:00 **The air suspension system of the Chrysler RAM 1500 – adaptation of passenger car technology in a pickup truck**
Holger Oldenettel, Technical Project Leader System Development, H. Schaumburg, J. Macpherson, D. Hein, Continental AG; N. Pinazzo, H. Quinn-Buss, Continental AG, USA
- 16:30 **Modeling of air springs – required models for the virtual development process**
Ingo Scharfenbaum, Driving Dynamics, Dr. M. Zuscik, BMW Group; Prof. Dr. G. Prokop, Institute for Automotive Technologies Dresden (IAD), TU Dresden; Prof. Dr. M. Jautze, Process Measuring and Control Technology, University of Applied Sciences Landshut
- 17:00 **Chassis performance enhancing comfort: modeling and optimization of an air spring damper regarding ride comfort and heat elimination**
Willy Armand Fongue, Suspension Engineer, Daimler AG; Prof. Dr. P. F. Pelz, Chair of Fluid Systems, TU Darmstadt

from 18:30 **Evening reception in Munich Ratskeller**
Enjoy interesting conversations with colleagues and speakers in a pleasant atmosphere.

>> CHASSIS.TECH
SECTION

Festsaal

Moderator:Dr. Veit Held, Head of Advanced Engineering,
Chassis and Chassis Control Systems, Adam Opel AG**REGULATED DAMPING SYSTEMS**8:30 **Influencing vehicle dynamics and comfort
by means of controlled hydraulic valves**Dr. Uwe Schatzberger, SAF Project Leader,
R. Schwickerath, BMW AG9:00 **Electromechanical rotary damper –
impacts on chassis concepts, cross linking
and dynamic damper behavior**Marco Willems, Project Coordinator for Passive and
Controlled Suspension Systems of A4, A5, Q5, A8,
AUDI AG9:30 **Optimization of electronic controlled damping
systems by integration of body motion sensors
into the control ECU**Stefan Rappelt, Manager Functional Integration,
ZF Friedrichshafen AG

10:00 Refreshment break in the exhibition area

Moderator:Dr. Veit Held, Head of Advanced Engineering,
Chassis and Chassis Control Systems, Adam Opel AG**VIRTUAL PROCESSES**10:30 **Efficient vehicle dynamics development
via simulation-based prognosis tools**Michael Peperhowe, Team Leader Modeling
Vehicle Dynamics, dSPACE GmbH;
W. Schindler, Daimler AG11:00 **Development of an integrated vehicle
dynamics control**Robert Buchta, Research Assistant,
Prof. Dr. X. Liu-Henke, Institute for Mechatronics,
Ostfalia University of Applied Sciences11:30 **Co-simulation for the synthesis of single wheel
suspension systems for vehicles with in-wheel
motors based on driving performance requirements**Dr. Andrés Eduardo Rojas Rojas, Scientific
Project Researcher, Dr. A. Eichberger, P. Karoshi,
Institute of Automotive Engineering,
Graz University of Technology, Austria

12:00 Lunch together in the exhibition area

>> STEERING.TECH
SECTION

Palaishalle

Moderator:Dr. Manfred Harrer, General Manager
Vehicle Dynamics and Performance,
Dr. Ing. h.c. F. Porsche AG**NEW STEERING AND CONTROL SYSTEMS**8:30 **Electric power steering for
light commercial vehicles**Markus Heger, Manager Electrics, Electronics
Advanced Engineering, A. Gaedke,
ZF Lenksysteme GmbH9:00 **Triple hybrid control of ESC, Moment+ and
G-Vectoring**Dr. Makoto Yamakado, Senior Researcher,
Hitachi, Ltd., Japan; K. Nagatsuka,
Hitachi Automotive Systems, Ltd., Japan;
J. Takahashi, Hitachi Europe GmbH9:30 **Road map of the motor for an
electric power steering system**Jirou Hayashi, Manager Electric Control Design
Center, DENSO Corporation, Japan

10:00 Refreshment break in the exhibition area

Moderator:Heiko Ruck, Vice President Global Engineering,
Chief Engineer Steering Wheel/Driver Airbag,
Takata AG**HUMAN-MACHINE INTERFACE**10:30 **The steering wheel: active safety evolution**Jason Lisseman, Engineering Director,
Takata Corporation, USA; H. Ruck, S. Eßers,
R. Grimm, Takata AG11:00 **Advantages of torque feedback control /
command strategy for EPS application
across vehicle platforms**Stéphane Cassar, Deputy General Manager,
Pascal Moulairé, Control and System Analysis
Expert, A. Michelis, P. Pilaz, JTEKT Europe SAS,
France11:30 **A new control concept for hydraulic
steer-by-wire fallback solutions
to provide an authentic steering feel**Steffen Stauder, Research Associate,
Prof. Dr. S. Müller, Institute of Mechatronics
in Mechanical and Automotive Engineering,
TU Kaiserslautern

12:00 Lunch together in the exhibition area

>> BRAKE.TECH SECTION

Königssaal

Moderator:

Karl Friedrich Wörsdörfer, Vice President
Product Development Hydraulic Brake Systems,
Continental, Division Chassis & Safety

NEW BRAKE SYSTEMS

- 8:30 **The ABS system of the new BMW R1200 GS**
Andreas Kirchberger, Project Manager ABS,
H.-J. Jahreiß, BMW AG Motorrad
- 9:00 **A concept for an electrohydraulic
brake system with variable brake assistance**
Emad Farshizadeh, Development Engineer,
D. Steinmann, DMecS Development of Mechatronic
Systems GmbH & Co. KG; Prof. Dr. H. Henrichfreise,
Cologne Laboratory of Mechatronics,
Cologne University of Applied Sciences
- 9:30 **From compound to aluminum lightweight rotors**
Ihsan Özer, Project Manager Aluminum Rotors,
Dr. R. Mayer, Daimler AG
- 10:00 Refreshment break in the exhibition area

Moderator:

Jan Münchhoff, Head of Development Foundation
Brake and Brake System Design, AUDI AG

NVH AND BRAKE DESIGN

- 10:30 **Integrated approach for thermal dimensioning
of high performance brakes**
Christoph Oger, Advanced Chassis Engineering,
Dr. Ing. h.c. F. Porsche AG
- 11:00 **Experimental identification of dynamic moduli
of materials with visco-elastic behavior using
the example of shims for brake pads**
Tilman Ochs, Test Engineer NVH Foundation,
H. Marschner, Dr. R.-R. Kühn, G. Maggi Trovato,
Continental, Division Chassis & Safety;
Dr. K. Kümmel, ZSI technology GmbH;
M. Rudolph, Dr. F. Rischbieter,
Invenio GmbH Engineering Services
- 11:30 **Brake noise simulation using
multibody simulation analysis**
Benjamin Leblanc, Project Manager,
Altair Engineering GmbH
- 12:00 Lunch together in the exhibition area

>> TIRE-WHEEL.TECH SECTION

Fürstensalon

Moderator:

Victor Underberg, Head of Development
Chassis Characteristics, Wheels/Tires/
Tire Pressure Monitoring Systems, AUDI AG

NEW TIRES AND WHEELS

- 8:30 **Development of a next-generation-size
tire for eco-friendly vehicles**
Isao Kuwayama, Ph.D., Chief Engineer,
H. Matsumoto, H. Heguri, Ph.D.,
Bridgestone Corporation, Japan
- 9:00 **Development of Ducati Motorcycles**
Dr. Simone Di Piazza, Vehicle Design and R&D
Services Manager, Ducati Motor Holding, Italy
- 9:30 **Requirements on the fatigue tests of a
composite wheel with integrated hub motor**
Prof. Dr. Andreas Büter, Head of Department
Lightweight Structures, O. Schwarzhaupt,
D. Laveuve, Fraunhofer Institute for Structural
Durability and System Reliability LBF
- 10:00 Refreshment break in the exhibition area

Moderator:

Stefan Dittmar, Team Leader Wheels, Business Unit
Tire/Wheels, TÜV SÜD Automotive GmbH

TRACTION AND ROLLING RESISTANCE

- 10:30 **Extended quasi steady state simulation for
analyzing tire temperature influence on lap time**
Timo Völkl, Complete Vehicle, Dr. M. Mühlmeier,
Audi Sport; Prof. Dr. H. Winner, Automotive
Engineering Department, TU Darmstadt
- 11:00 **Potential friction estimation for both longitudinal
and lateral moderate transient behavior**
Dr. Marco E. Pezzola, Promoting Partner, General
Manager, Dr. E. Leo, Soluzioni Ingegneria, Italy;
M. Sabatini, Pirelli Tyre S.p.A., Italy;
F. Cheli, Politecnico di Milano, Italy
- 11:30 **Rolling resistance: a comprehensive study
under real vehicle-driving conditions**
Ulrico Peckelsen, Advanced Development Wheels
and Tires, T. D'Avanzo, D. Bode, M. Brenker,
BMW Group; Prof. Dr. F. Gauterin,
Institute of Vehicle System Technology,
Karlsruhe Institute of Technology (KIT)
- 12:00 Lunch together in the exhibition area

>> CHASSIS.TECH
SECTION

Festsaal

Moderator:Dr. Veit Held, Head of Advanced Engineering,
Chassis and Chassis Control Systems, Adam Opel AG**DRIVER ASSISTANCE SYSTEMS
AND DRIVING DYNAMICS**

- 13:30 **ADAS systems improvement via potential friction knowledge: logics, performance, critical scenarios, on-board implementation**
Dr. Elisabetta Leo, Business Partner, R&D Manager,
Dr. M. E. Pezzola, Soluzioni Ingegneria, Italy;
F. Mancosu, M. Sabatini, Pirelli Tyre S.p.A., Italy;
F. Cheli, Politecnico di Milano, Italy
- 14:00 **Tire force distribution control to reduce energy dissipation due to tire slip during vehicle motion for full drive-by-wire EV**
Prof. Masato Abe, Department of Vehicle System
Engineering, Kanagawa Institute of Technology,
Japan; J. Hirata, NTN Corporation, Japan
- 14:30 **ADAS impacts on chassis systems design**
Dr. Vincent Abadie, Expert Leader, Controlled
Chassis Systems, PSA Peugeot Citroën Automobiles,
France
- 15:00 Refreshment break in the exhibition area

>> STEERING.TECH
SECTION

Palaishalle

Moderator:Prof. Dr. Manfred Plöchl, Institute of Mechanics and
Mechatronics, TU Vienna, Austria**DEVELOPMENT METHODS
FOR STEERING SYSTEMS**

- 13:30 **Method to analyze and optimize vehicle interior noise caused by electrical steering gear vibration**
Ralph Bründel, Leader Competence Centre NVH,
I. Marcaide, B. Schiek, ThyssenKrupp Presta AG,
Liechtenstein
- 14:00 **Model-based engineering process for electric power steering systems**
Dr. Christian Wimmer, Development Engineer,
Function Development Chassis Control Systems,
Dr. M. Lehner, BMW AG; Prof. Dr. S. Müller,
Institute of Mechatronics in Mechanical and
Automotive Engineering, TU Kaiserslautern
- 14:30 **Modeling and simulation of steering shudder of electro-mechanical steering systems**
Dr. Jinhuai Lin, Research Assistant, R. Schimpf,
Prof. Dr. P. E. Pfeffer, Automotive Engineering,
Munich University of Applied Sciences
- 15:00 Refreshment break in the exhibition area

>> CHASSIS.TECH PLUS SECTION

Festsaal

Moderator:Prof. Dr. Peter E. Pfeffer, Automotive Engineering,
Munich University of Applied Sciences**DRIVER ASSISTANCE SYSTEMS AND CHASSIS**

- 15:30 **Driver assistance and driving dynamics – what can we envisage?**
Prof. Dr. Markus Krug, Automotive Software
Engineering Laboratory, Department of Mechanical,
Automotive and Aeronautical Engineering,
Munich University of Applied Sciences
- 16:00 **Opportunities and challenges on the route to piloted driving**
Dr. Björn Giesler, Development Piloted Driving,
T. Müller, AUDI AG
- 16:30 **Closing remarks**
Prof. Dr. Peter E. Pfeffer, Automotive Engineering,
Munich University of Applied Sciences;
Dr. Alexander Heintzel,
Editor-in-Chief ATZ | MTZ | ATZelektronik

>> **BRAKE.TECH
SECTION**

Königssaal

Moderator:

Prof. Dr. Karlheinz Bill, Automotive Engineering Department, HTW Berlin – University of Applied Sciences

NEW BRAKE FUNCTIONS

- 13:30 **Feedback of brake pedal regeneration**
Dr. Ralf Stroph, Development Engineer,
Dr. A. Pruckner, T. Eberl,
BMW Group Research and Technology
- 14:00 **From vehicle stability to green braking:
actuation combined with modulation**
Stephan Stass, Senior Vice President Engineering,
Dr. E. Liebermann, Chassis Systems Control,
Robert Bosch GmbH
- 14:30 **Wheel-independent estimation of the
friction potential for split friction and changing
friction conditions for the application in an
automated emergency braking system**
Cornelia Lex, Scientific Assistant,
Dr. A. Eichberger, Institute of Automotive
Engineering, Graz University of Technology;
Dr. H.-U. Kobiálka, Fraunhofer Institute,
Intelligent Analysis and Information Systems (IAIS)
- 15:00 Refreshment break in the exhibition area
-

>> **TIRE-WHEEL.TECH
SECTION**

Fürstensalon

Moderator:

Dr. Burkhard Wies, Vice President
Tire Line Development Worldwide,
Continental Reifen Deutschland GmbH

TESTING AND SIMULATION

- 13:30 **AIBA Automated Indoor Braking Analyzer und
EU label**
Dr. Thiemo Kessel, Tire Line Development ww,
Contact & Friction Physics, Dr. B. Wies,
Continental Reifen Deutschland GmbH
- 14:00 **Utilization of objective tire characteristics
in the chassis development process**
Dr. Stefan Einsle, Characteristics of Chassis
Concepts Department, C. Fritzsche, AUDI AG
- 14:30 **Tire damage due to impact
from a worldwide perspective**
Dr. Mattia Giustiniano, Coordinator
Wear & Durability, Bridgestone Technical
Center Europe S.p.A., Italy; H.-R. Hein,
Bridgestone Europe NV/SA, Belgium/Italy
- 15:00 Refreshment break in the exhibition area
-



Source of graphical material:
ZF Friedrichshafen AG

THE ORGANIZER

ATZlive

// Establish contacts – keep in touch //

ATZlive creates platforms allowing you to participate in discussions and set the course for the future together. Our high-level conferences with the principal representatives of research and practice are precisely geared to the needs of the interest groups involved and the current issues under discussion; that is the motto of our technology events. They illuminate the latest trends and provide up-to-date information for your work.

ATZlive is part of the second largest specialist scientific publishing group in the world, Springer Science + Business Media. We bring together the know-how of the most celebrated business, science and technology publishers in Germany under one roof.

Our close connection to the editorial departments of our specialist magazines ATZ and MTZ gives us access to the latest topics and trends in the market.

ATZ live

THE MEDIA PARTNERS

ATZ

Automobiltechnische Zeitschrift, the specialist magazine for technology-oriented management in the automotive industry, provides up-to-date information from research and development.

ATZ

MTZ

Motortechnische Zeitschrift is always one step ahead where engine development and technology are concerned and is full of detailed results from research and development for highly specialized engineers.

MTZ

THE COOPERATING PARTNERS

TÜV SÜD Automotive GmbH

**Applying knowledge intelligently.
Developing a competitive edge.**

TÜV SÜD Automotive GmbH – an innovative service provider and impartial partner for the automotive industry – improves products and processes. Our experts deliver technological progress and state-of-the-art expert knowledge around the world, seeing automotive innovations – including alternative powertrain systems – through to series production with the confidence of safety. Exhaust emissions laboratory, tire rubber characterization and tire testing, electrical and functional safety tests for alternative powertrain systems, tank test center, road restraint systems – our consulting, testing, certification and training services ensure your safety at every turn.



Automotive

IAVSD

The International Association for Vehicle System Dynamics founded in 1977 is an open non-commercial community of persons and organizations of different countries engaged in scientific research and development in the field of Vehicle Dynamics and related fields, in order to promote free and informal exchange of ideas and results.

More at www.iavsd.org





EXHIBITION

Thursday 13 June 2013 and Friday 14 June 2013

An accompanying trade exhibition will be taking place again in the foyers of the function rooms on Thursday 13 June and Friday 14 June. In numerous exhibition booths manufacturers and suppliers of the automotive industry will present the latest developments in chassis technology to the specialist audience.

List of exhibitors attending chassis.tech plus 2012

ATZ Springer Vieweg | Bertrandt AG | Continental Engineering Services GmbH | dSPACE GmbH | GeneSys Elektronik GmbH | Georg Fischer Automotive AG | IAMT – Ingenieurgesellschaft für allgemeine Maschinentechnik mbH | IAV GmbH | IPG Automotive GmbH | Jäger Computergesteuerte Messtechnik GmbH | LMS Deutschland GmbH | MTS Systems GmbH | Müller-BBM VibroAkustik Systeme GmbH | Munich University of Applied Sciences | Polytec GmbH | Renesas Electronics Europe GmbH | ROSS – Rüdiger Ott Software and Service GmbH | SIMPACK AG | Springer Vieweg | TBJ – Dynamische Messtechnik | tedrive Steering Systems GmbH | TESIS DYNAware GmbH | TÜV SÜD Automotive GmbH

YOUR OWN PERSONAL COPY OF ATZ OR MTZ

All participants in the Symposium will receive one of the E-magazines ATZ- or MTZ-worldwide for two consecutive months free of charge and without obligation. When registering, please stipulate which magazine you would like to read.

ATZ



MTZ



YOUR PRESENTATION PLATFORM

Take the opportunity to present your latest products and services to the specialist audience as a supplier in our exclusive exhibition or as a sponsor. Why not make use of this meeting place for an exchange of specialist information between users and pioneers in this field?

We design individual sponsoring and exhibition packages according to your needs and requirements. You can choose from a wide range of options.

For information on the various presentation options

please contact:

Nicole Benner

Best Ad Media on behalf of ATZlive

Phone +49 611 7878-320

nicole.benner@best-ad-media.de

REGISTRATION FEE

Participation in the entire symposium chassis.tech plus
13 and 14 June 2013
€ 1,395.– plus VAT

This includes the conference documents, refreshments during the breaks, two lunches and the evening event.

Participation on one day only

13 June 2013 | in the section **chassis.tech plus** or
14 June 2013 | in one of the four parallel sections
chassis.tech, steering.tech, brake.tech, tire-wheel.tech
€ 795.– plus VAT

This includes the conference documents, refreshments during the breaks, one lunch and the evening event.

Participants can change between the parallel sections at any time. The registration fee also includes admission to the accompanying trade exhibition.

University members of the IAVSD receive a 50 % discount on the registration fee.

Mode of payment

By bank transfer after invoice or by credit card (Master, Visa).

YOUR OWN PERSONAL COPY OF ATZ OR MTZ

All participants in the Symposium will receive one of the E-magazines ATZ- or MTZ-worldwide for two consecutive months free of charge and without obligation.

CONDITIONS

No cancellation charge is due if registration is canceled by 15 May 2013. Cancellations made after that date will incur a charge of 35 % of the registration fee. For cancellations made after 23 May 2013 the full registration fee is payable. Cancellations must be made in writing. The date of the postmark will determine whether the deadline has been met. We will gladly accept a replacement delegate at no extra charge.

Should a speaker be unable to attend at short notice by reason of force majeure, illness, accident or other circumstances for which ATZlive cannot be held responsible, another qualified person will be appointed to the exclusion of any claim for compensation. Should the event be canceled altogether, we will of course refund the registration fee. No conference documentation may be reproduced or transferred to third parties without the express written consent of ATZlive. Audio and video recording of the conference is not permitted.

VENUE

Hotel Bayerischer Hof
Promenadeplatz 2–6 | 80333 Munich | Germany

Phone +49 89 2120-0
www.bayerischerhof.de

HOTEL

The following hotel has a room block at reduced prices for the participants. **Please reserve by 8 May 2013 and refer to "chassis.tech plus".**

Holiday Inn Munich – City Centre

Hochstraße 3 | 81669 Munich
Phone +49 89 4803-4444
Fax +49 89 448-7170
hi.muenchen@whgeu.com
www.holidayinn.de/munichcitycentre
Single room with breakfast € 145.–
Double room with breakfast € 168.–

You can book other hotels in Munich via:

www.muenchen-tourist.de

LANGUAGES USED IN THE PRESENTATIONS

German and English with simultaneous interpreting (German – English / English – German)

Your personal details will be stored electronically in compliance with the German Data Protection Act. We will not disclose your address to third parties for advertising purposes. If you do not wish to receive information about our publishing products, please send an e-mail with your address details to widerspruch.springerfachmedien-wiesbaden@springer.com.

Please send the registration form by post or fax to:

ATZlive | Springer Vieweg
Springer Fachmedien Wiesbaden GmbH
Elisabeth Moser
Abraham-Lincoln-Straße 46
65189 Wiesbaden
Phone +49 611 7878-118
Fax +49 611 7878-452
ATZlive@springer.com
www.ATZlive.de

chassis.tech_{plus}

chassis.tech

+

steering.tech

+

brake.tech

+

tire-wheel.tech

REGISTRATION

Registration either by faxing the registration form to

Fax +49 611 7878-452

or online at www.ATZlive.de.

You will receive confirmation of participation upon receipt of your registration and be invoiced three weeks before the symposium. You will receive your conference documents when registering at the venue.

Please register one person per form only.

Registration data

Family name

First name

Acad. title

Company / Institute

Department

Function

Street / P.O. box

Postal code / City

Country

Phone, Fax

E-mail

Invoice address (if different from above address)

VAT No.

CS000499

Date, Signature

Registration fee

13 and 14 June 2013 – entire symposium: € 1,395.–*

13 June 2013 – chassis.tech plus (1st day): € 795.–*

14 June 2013 – chassis.tech plus (2nd day): € 795.–*

* plus VAT

Attendance at evening reception on 13 June 2013

yes

no

University member of IAUSD

yes (50 % discount)

Mode of payment

Bank transfer after invoice

Credit card

Mastercard

Visa

Card number

Card holder

Credit card valid until

**Please send me 2 editions of the E-magazine marked:
ATZ-worldwide or MTZ-worldwide to the following
E-mail address:**

Family name

First name

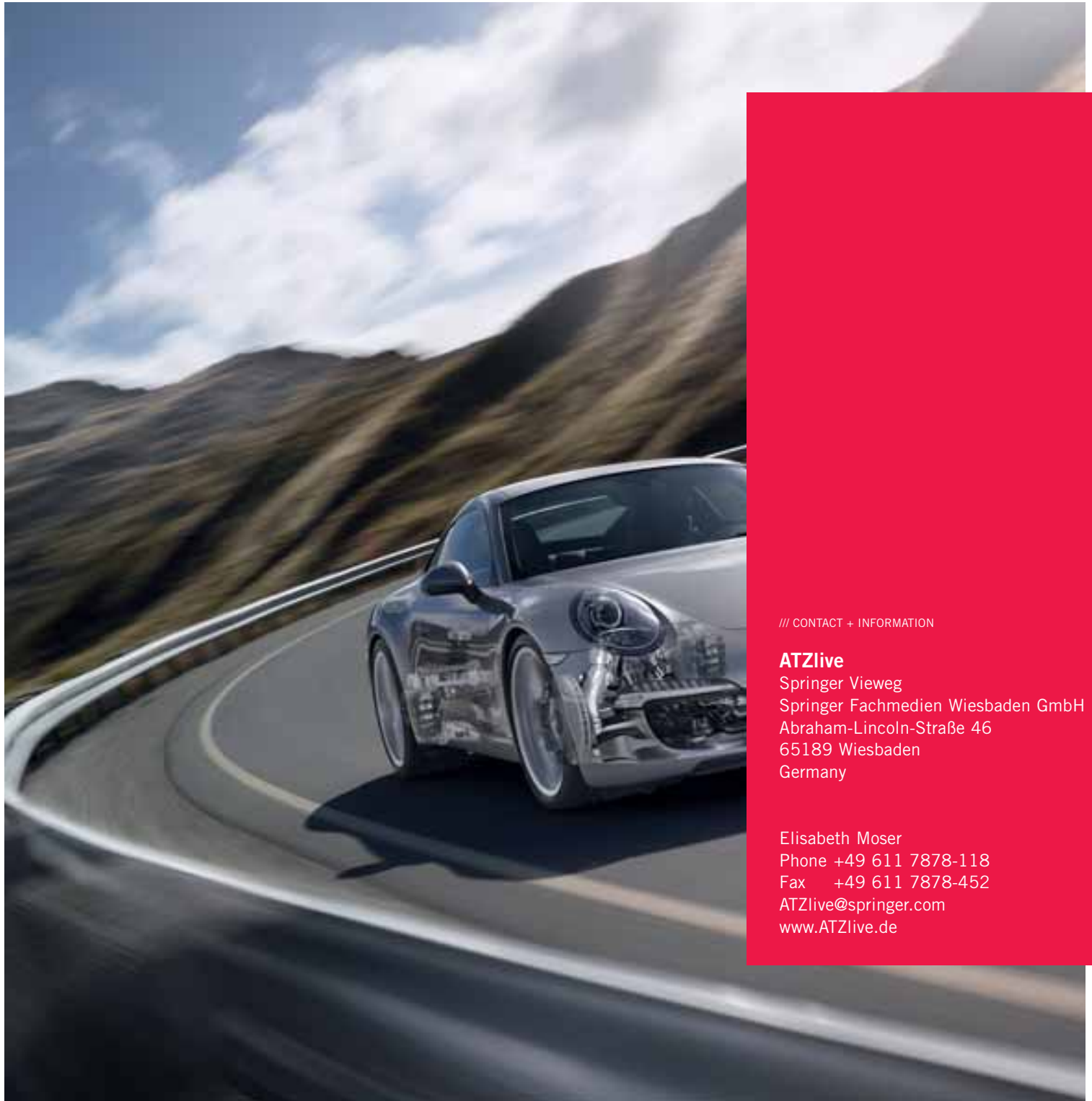
Acad. title

E-mail

Street / P.O. box

Country / Postal code / City

BY FAX TO +49 611 7878-452



/// CONTACT + INFORMATION

ATZlive

Springer Vieweg
Springer Fachmedien Wiesbaden GmbH
Abraham-Lincoln-Straße 46
65189 Wiesbaden
Germany

Elisabeth Moser
Phone +49 611 7878-118
Fax +49 611 7878-452
ATZlive@springer.com
www.ATZlive.de