VEHICLE TECHNOLOGY
Aerodynamics, new vehicle concepts, vehicle dynamics and driver assistance systems

VEHICLE POWERTRAIN
Hybrid technology, alternative fuels, spark-ignition and diesel engines, engine management and modeling

VEHICLE ELECTRONICS
Electric vehicles, software and design, modeling and simulation

// SCIENTIFIC DIRECTORS OF THE SYMPOSIUM
Prof. Dr. Michael Bargende
Prof. Dr. Hans-Christian Reuss
Prof. Dr. Jochen Wiedemann
FKFS

11th Stuttgart International Symposium
Automotive and Engine Technology
22 and 23 February 2011 | Stuttgart | Germany
RATIONALITY OR EMOTION – WHERE IS THE DEVELOPMENT OF THE AUTOMOBILE OF THE FUTURE LEADING TO?

The automotive industry is currently facing great challenges. At the moment everyone is talking about electrical mobility as an alternative powertrain concept of the future. Will we really be driving electric cars in 20 to 30 years or will electrically assisted internal combustion engines with all of their optimization potentials continue to be the dominant powertrain technology? The automotive industry has to be able to manage the R&D balancing act between optimized 100% internal combustion powertrains, a wide range of hybrid powertrains and purely electric powertrains. The extensive possibilities offered by the reduction of the driving resistance of the vehicle also play a tremendously important role for what the automobile of the future will look like. The wide range of possibilities is reflected by the more than 70 specialist presentations to be given at the 11th Stuttgart International Symposium Automotive and Engine Technology in Stuttgart on 22 and 23 February 2011, with presentations on alternative powertrain concepts forming a special focus this time around. The specialist presentations to be held by leading experts from industry and science will cover the entire range of up-to-date vehicle and powertrain technologies, including topics from the fields of production and railway vehicles. In the four parallel strands of the symposium, you will be able to acquire information on the state of the art, the latest research results and future concepts and discuss them with the experts. The parallel trade exhibition will allow you to get to know each other and exchange ideas.

We are looking forward to seeing you in Stuttgart, the cradle of the automobile, and wish you a pleasant journey here as well as a stimulating and interesting stay in Stuttgart.

Prof. Dr. Michael Bargende
Prof. Dr. Hans-Christian Reuss
Prof. Dr. Jochen Wiedemann
11TH STUTTGART INTERNATIONAL SYMPOSIUM
Automotive and Engine Technology

The 11th International Stuttgart Symposium for Automotive and Engine Technology is once more being organized by the Stuttgart Research Institute for Automotive and Vehicle Engine Technology (FKFS) in cooperation with ATZlive, the events organization of Springer Automotive Media. For years now, the worldwide specialist magazines for automotive and vehicle engine technology ATZ (Automobiltechnische Zeitschrift) and MTZ (Motortechnische Zeitschrift) have been supporting the Stuttgart Symposium in the context of a media partnership.

The focus of this largest event to take place in Southern Germany is on the new challenges posed by the development of motor vehicles. The stiffer competition forces all automotive manufacturers and the suppliers associated with them to put new and improved solutions onto the market as rapidly as possible. The development continues to be driven by emission reduction legislation and the necessity of reducing fuel consumption. The demands of the buyers with regard to comfort and safety are on the increase too.

This gives the Stuttgart region as the largest automobile location in Europe a great responsibility for future-proof vehicle and engine concepts and makes me all the more pleased that the University of Stuttgart and the innovative FKFS have made a call to take part in the 11th Stuttgart Symposium. For this reason, I wish all participants a fertile exchange of ideas and stimulating discussion and hope that they will make successful use of the contacts it gives them. I am convinced that this event rich in tradition will once more be an indispensable platform for demonstrating the technical progress offered by our sector.

Wolfgang Siebenpfeiffer
Editor-in-Charge ATZ | MTZ

There will be simultaneous interpreters for German/English and English/German on both days of the symposium. For the English version of the program, please go to www.ATZlive.de or ask for it under Phone +49 (0)611 / 78 78 – 131.

DELEGATES

The Stuttgart Symposium is addressed to employees of the automotive manufacturers and their suppliers from the fields of R&D, production, aerodynamics, simulation, vehicle engineering and powertrain, service providers, software companies and universities.

FORMAL RECEPTION

Tuesday 22 February 2011 | 7:00 pm
at the “Alte Stuttgarter Reithalle”
Maritim Hotel I Seidenstraße 34
70174 Stuttgart I Germany

Enjoy an exceptional evening of top-class entertainment.

Program:

7:00 pm Champagne reception
Welcome
Prof. Dr. Hans-Christian Reuss
Member of the FKFS Board of Management and Professor for Vehicle Mechatronics at the Institute for Internal Combustion Engines and Automotive Engineering (IVK), University of Stuttgart
Wolfgang Siebenpfeiffer
Editor-in-Charge ATZ | MTZ

Followed by dinner
You will be entertained by “Anne Haigis – the vocal Stradivarius”.

From the very first notes, the singer with the husky, powerful voice and the unmistakable timbre unleashes a fireworks display, musically and vocally. Her songs are a combination of Southern States melancholia, swinging country sounds and straight-ahead rock and roll. With her covers and her own arrangements of rock ballads or blues adaptations, she skillfully satisfies nostalgics and romantics alike, delighting blues connoisseurs and fascinating lovers of song lyrics with her songs sung in German.

If you would like to bring a guest to the reception, please contact Birgit Ulber, Phone +49 (0)611 / 78 78 – 131, 14 days before the Symposium.

Reception ends at approximately 11:00 pm
from 8:00 Registration

9:00 Welcome
Prof. Dr. Michael Bargende, Chairman of the FKFS Board of Management and Managing Director of the Institute for Internal Combustion Engines and Automotive Engineering (IVK), University of Stuttgart

Opening address
Prof. Dr. Wolfram Ressel,
Rector of the University of Stuttgart

9:15 Providing political momentum for the individual mobility of tomorrow
Ernst Burgbacher, Parliamentary State Secretary at the Federal Ministry of Economics and Technology

The car of the future between emotion and rationality
Dr. Ulrich Hackenberg, Member of the Board of Management for the Volkswagen brand with responsibility for 'Development', Volkswagen AG

If everyone owned a smart
Dr. Annette Winkler, Head of smart Product Unit, Daimler AG

10:15 Discussion of the three plenary presentations

10:30 Refreshment break with coffee and tea

11:00 Four parallel sections

12:30 Lunch together in the exhibition area

14:00 Four parallel sections

15:30 Refreshment break with coffee and tea

16:00 Four parallel sections

18:00 End of the parallel sections

19:00 Formal reception at the "Alte Stuttgarter Reithalle"

Welcome
Prof. Dr. Hans-Christian Reuss, Member of the FKFS Board of Management and Professor for Vehicle Mechatronics at the Institute for Internal Combustion Engines and Automotive Engineering (IVK), University of Stuttgart

Enjoy stimulating discussions with fellow participants and speakers in a relaxing atmosphere.
PROGRAM
TUESDAY 22 FEBRUARY 2011

SECTION 1  König Karl Hall

VEHICLE AND POWERTRAIN CONCEPTS
Chairman: Prof. Dr. Stefan Pischinger

11:00 Blue Direct – the innovative technology concept for SI engines at Mercedes-Benz
Peter Lückert, G. Doll, A. Waltner, Daimler AG, et al.

11:30 BMW EfficientDynamics – CO₂ reduction while having fun
Dr. Johannes Liebl, BMW Group

12:00 Are new performance requirements necessary for battery electric vehicles?
Silvestre Artiaga-Hahn, A. Regne-Gläser, R. Hiemenz, R. Weidemann, Adam Opel GmbH

12:30 Lunch together in the exhibition area

HYBRIDS I
Chairman: Prof. Dr. Cornel Stan

14:00 The EcoCar challenge – design of an extended range electric vehicle for a student competition
Prof. Giorgio Rizzoni, K. Bayar, B. Bezaire, B. Gooley, J. Kruckenber, S. Midlam-Mohler, E. Schacht, Center for Automotive Research, The Ohio State University

14:30 Comparison of simulation, test bench and road test regarding a hybrid electric powertrain
Michael Böhm, Prof. Dr. H.-C. Reuss, IVK, University of Stuttgart; Dr. G. Baumann, FKFS

15:00 Turbo Range Extenders – recuperating micro gas turbines as an alternative concept of energy conversion in Plug-In Hybrid vehicles
Prof. Dr. Heinz Peter Berg, Y. Reichel, M. Neumann, D. Antoshkiv, VFA, Brandenburg Technical University in Cottbus

15:30 Refreshment break with coffee and tea

HYBRIDS II
Chairman: Prof. Dr. Lino Guzzella

16:00 Plug-in Hybrid – emission-free in urban regions and efficient on the highway
Carsten von Essen, F. Bunar, IAV GmbH

16:30 A fuel-efficient and cost-effective diesel hybrid powertrain for car and LCV
Dr. David Gagliardi, Ricardo Deutschland GmbH; C. Wren, Ricardo Midlands Technical Centre; Dr. E. Spijker, Ford Motor Company; G. Corcione, Eldor Corporation S.p.A.

17:00 Balancing vehicle energy performance with drivability and thermal comfort: benefits of a multi-domain system simulation approach in the case of an electric-hybrid vehicle
Lionel Broglia, R. Meillier, D. Gagne, LMS Imagine

17:30 New approach for computation of predictive, fuel-efficient vehicle operation strategies based on self-learning algorithm
Prof. Dr. Dr. Albert Albers, J. Schröter, M. Frietsch, IPEK, Karlsruhe Institute of Technology

SECTION 2  Meidinger Room

VEHICLE TECHNOLOGY I
Chairman: Prof. Dr. Lutz Eckstein

11:00 The aerodynamics und aero-acoustics of the new Audi A6 and Audi A7
Dr. Wolfgang Mayer, Dr. G. Wickern, Dr. M. Islam, N. Lindener, AUDI AG

11:30 Electric drive: a challenge for interior and exterior vehicle noise
Christoph Meier, T. Küppers, Dr. R. Bocksch, Mercedes-Benz Cars, Daimler AG

12:00 Complementary use of 1D and 3D tools in the early stage of the automotive cooling system development process
Stefan Wile, H. Maier, A. Koller, Dr. Ing. h.c. F. Porsche AG; N. Biddeck, Prof. Dr. J. Wiedemann, FKFS

12:30 Lunch together in the exhibition area

CHARGE EXCHANGE TECHNOLOGIES
Chairman: Prof. Dr. Günter Hohenberg

14:00 How much and what kind of variabilities in valvetrains of combustion engines are necessary in times of down-sizing, hybrids and range-extender
Dr. Kurt Kirsten, Schaeffler Technologies GmbH & Co. KG

14:30 Simulation of the temporal and spatial distribution of evaporative emissions inside the air intake system of Otto engines
Christian Spengler, Prof. Dr. C. Merten, ICVT, University of Stuttgart

15:00 Rapid and high-precision charge pressure control with the electric wastegate actuator from MAHLE Wilhelm Müller, M. Antmann, Dr. H. Erlach, MAHLE Filtersysteme GmbH

15:30 Refreshment break with coffee and tea

VEHICLE DYNAMICS
Chairman: Dr. Andreas Wagner

16:00 Enhancing the availability of an electromechanical steering system by using a virtual torque signal
Danny Holluschek, Dr. C. Hopp, Volkswagen AG

16:30 A model-based method for the conceptual layout of vehicle dynamics in early phases of the development process
Dominik Mader, Dr. M. Schleich, BMW Group; Prof. Dr. S. Müller, MV, TU Kaiserslautern

17:00 The comfort enhancing effect of selective passive damping systems
Dr. Reinhard Sonnenburg, ZF Sachs AG

17:30 Universal tire-road model for advanced vehicle dynamic application
Andreas Wiesebrock, IVK, University of Stuttgart; J. Neubeck, Prof. Dr. J. Wiedemann, FKFS
ALTERNATIVE FUELS

Chairman: Prof. Dr. Peter Eilts

11:00 Deposits through FAME: increasing the robustness of diesel-injection systems
Andreas Ellenschläger, Dr. D. Zeh, Robert Bosch GmbH; Prof. Dr. Dr. P. Gümpel, Constance University of Applied Sciences

11:30 Online detection and compensation of fuel property effects on the pilot injection
Florian Ramsperger, Prof. Dr. B. Wiedemann, TU Berlin; A. Rempel, R. Gratzke, M. Brauer, A. Sommer, IAV GmbH

12:00 Potential and challenges of the use of ethanol in diesel engines
Andreas Kolbeck, T. Schnorbus, T. Körfer, FEV Motorentechnik GmbH; A. Janssen, Prof. Dr. S. Pischinger, VKA, RWTH Aachen University

12:30 Lunch together in the exhibition area

VEHICLE TECHNOLOGY II

Chairman: Prof. Dr. Frank Gauterin

14:00 Unsteady flow simulations for aeroacoustics analysis of the S-Class
Gülden Kaynak, Daimler AG; Prof. Dr. C.-D. Munz, IAG, University of Stuttgart

14:30 Progress of the CFD validation for automotive aerodynamics development
Dr. Thomas Schütz, Dr. M. Islam, N. Lindener, AUDI AG

15:00 Active rotary knobs with adaptive torque feedback – conflict of goals between positioning accuracy and difference threshold
Thomas Hampel, Prof. Dr. T. Maier, IKTD, University of Stuttgart

15:30 Refreshment break with coffee and tea

DIESEL ENGINES

Chairman: Prof. Dr. Helmut Eichlseder

16:00 Approaches for the optimization of the transient behaviour of diesel engines in terms of emissions and consumption
Dirk Naber, Dr. M. Krüger, J. Gerhardt, Dr. S. Motz, T. Port, Robert Bosch GmbH

16:30 The influence of annealing on emissions and consumption
Dr. Olaf Toedter, Dr. B. Last, J. Stöckle, M. Rottner, BorgWarner BERU Systems GmbH

17:00 Diesel common-rail fuel technology for future high-efficiency ultra low emission-duty engines
Dr. Rainer Jorach, P. Bercher, D. Burke, M. Calvo, Dr. N. Guerrassi, G. Meissonier, Dr. N. Milovanovic, Delphi Diesel Systems

17:30 HiL/SiL applications of a thermodynamic mean value models library for the simulation of turbocharged diesel engines
Prof. Agostino Gambarotta, G. Lucchetti, I. Vaja, University of Parma

MATERIALS AND PRODUCTION

Chairman: Prof. Dr. Eberhard Roos

11:00 Approaches for automated sidewall wrinkling detection in deep drawing processes
Klaus M. Wurster, Prof. Dr. M. Liewald, C. M. Blaich, IFU, University of Stuttgart

11:30 Innovative eddy current inspection on lightweight components
Gerald Schneibel, Rohmann GmbH

12:00 Clocked production for mechanical axis transmissions
Christian Diamantidis, Voith Turbo GmbH & Co. KG

12:30 Lunch together in the exhibition area

VEHICLE BODY ENGINEERING

Chairman: Prof. Dr. Horst E. Friedrich

14:00 Durable design of truck chassis for Eastern European driving conditions – calculation of welding seam fatigue properties
Siegfried Holzer, Dr. P. Fischer, dTech Steyr – Dynamics & Technology Services GmbH

14:30 Body development by means of design and functional benchmarking
Roland Wohlecker, Forschungsgesellschaft Krafftfahrwesen mbH Aachen; R. Göbbels, ika, RWTH Aachen University

15:00 Efficiency improvement in body stiffness evaluation in the context of handling & comfort performance targets
Jan Deleener, P. Mas, LMS International; L. Cremers, BMW AG; J. Poland, BMW MC

15:30 Refreshment break with coffee and tea

ENGINE CONTROL

Chairman: Prof. Dr. Christian Beidl

16:00 Engine map of smart diesel injection strategies
Dr. Frank Atzler, O. Kastner, R. Rotondi, A. Schwarte, A. Weigand, Continental Automotive GmbH; M. Brauer, A. Seiffert, P. Rolke, O. Predelli, IAV GmbH

16:30 Diesel engine management with center of heat release control based on structure-borne sound signals
Marco Decker, Prof. Dr. C. Gühmann, MDT, TU Berlin; S. Lucas, Prof. Dr. H. Tschöke, IMS, University of Magdeburg; M. Joerres, Ford-Werke GmbH

17:00 Model-based smoke limitation for dynamical applications of turbocharged CR-diesel engines
Heiko Sequenz, M. Mrosek, Prof. Dr. R. Isermann, IAT, TU Darmstadt

17:30 Flexible development environment for future challenges on engine control
Alexander Rempel, C. Bessai, Dr. E. Stötting, R. Gratzke, IAV GmbH
SECTION 1  König Karl Hall

**AFTERTREATMENT AND WASTE HEAT RECOVERY**
Chairman: Prof. Dr. Horst Hamdorf

**8:30** The simulation of waste heat recovery systems in commercial vehicle applications
Dr. Eberhard Pantow, R. Gneiting, H.-J. Krauß, R. Lutz, Behr GmbH & Co. KG

**9:00** Future SCR-NOx exhaust gas aftertreatment systems in the Euro 6 competitive environment
Hans-Dieter Harder, R. Brück, M. Brugger, Emitec GmbH

**9:30** Soot oxidation during different regeneration modes in diesel particulates filters
Dr. Panayotis Dimopoulos Eggenschwiler, Dr. A. Liati, D. Schreiber, Empa, Swiss Federal Laboratories for Materials Science and Technology

**10:00** Refreshment break with coffee and tea

**VEHICLE CONCEPTS**
Chairman: Dr. Claus Ehlers

**10:30** Challenges for electro mobility and requirements for material architectures
Prof. Dr. Horst E. Friedrich, P. Steinle, R. Schöll, Institute for Vehicle Concepts, DLR e. V.

**11:00** Individual concepts for electric vehicles: interaction between battery space and vehicle concept
Kai Kuchenbuch, J. Stieg, Volkswagen AG; Prof. Dr. T. Vietor, IK, TU Braunschweig

**11:30** Holistic and user-centered layout conception of an electric vehicle (E-Car)
Alexander Müller, Prof. Dr. T. Maier, IKTD, University of Stuttgart; Dr. H.-J. Dennig, phi Engineering Services GmbH

**12:00** Lunch together in the exhibition area

**SCENARIOS AND LEGISLATION**
Chairman: Dietmar Goericke

**13:30** Does our economy system work without individual mobility? What are we doing to sustain this important key element?
Rudolf W. Thom, CAR

**14:00** Toward “Vision Zero” – Is ISO 39001 “Road traffic safety management systems” the right step?
Dr. Alexander Schanz, Dr. R. Hamann, Robert Bosch GmbH

**14:30** Energy outlook until 2030 – focus on transport fuels
Karl-Heinz Schult-Bornemann, University of Magdeburg

SECTION 2  Meidinger Room

**HIL TECHNOLOGIES**
Chairman: Prof. Dr. Karl-Ludwig Krieger

**8:30** Improvement in efficiency in the software test process for model-based software development
Stefan Kuppe, Dr. W. Han, R. Gratzke, IAV GmbH

**9:00** Simulation test system for development and testing of electrical drive systems
Sebastian Wellmann, N. Franchi, A. Lauk, iSyst Intelligente Systeme GmbH

**9:30** Methods and processes for managing large Multi-HIL-Environments
Dr. Mark Müller, S. Friedrich, ITK Engineering AG

**10:00** Refreshment break with coffee and tea

**SIMULATION TOOLS**
Chairman: Prof. Dr. Konstantinos Boulouchos

**10:30** Scaling functions for the simulation of different SI-Engine concepts in conventional and electrified powertrains
Michael Huss, TESIS DYNAware GmbH; W. Hübler, BMW Group Research and Development; Prof. Dr. G. Wachtmeister, LVK, TU Munich

**11:00** Development of a multi-dimensional tool for the simulation of the combustion and in-cylinder flows using the OpenFOAM technology
Prof. Angelo Onorati, T. Lucchini, G. D’Errico, G. Montenegro, F. Piscaglia, Dipartimento di Energia, Politecnico di Milano

**11:30** Fiat group methods for fuel consumption: SW PerFECTS

**12:00** Lunch together in the exhibition area

**ANALYSIS IN SI ENGINES**
Chairman: Prof. Dr. Ulrich Spicher

**13:30** Engine start-up optimization using the transient pressure trace analysis
Dr. David Lejsek, Dr. A. Kulzer, Dr. A. Kufferath, Robert Bosch GmbH

**14:00** Optical diagnostics of knocking in a boosted spark ignition engine
Dr. Simona S. Merola, P. Sementa, C. Tornatore, Istituto Motori – CNR

**14:30** Mixture formation analysis with a fiber optical spark plug sensor in spark ignited engines using infrared spectroscopy
Alexander Grosch, Dr. H. Wackerbarth, Dr. V. Beushausen, Laser Laboratory Göttingen e. V.
**SECTION 3**  
Bertha Benz Room

**AUTOMOTIVE ELECTRONICS AND SOFTWARE**  
Chairman: Prof. Dr. Bernard Bäker

8:30  
Model-based development of a magnetically actuated torque-vectoring unit  
Markus Wannangs, R. Keller, M. Pantke, ZF Friedrichshafen AG

9:00  
Concept, construction and first results of a test bench for automotive power networks  
Johannes Klötzl, FEAAM GmbH; Prof. Dr. D. Gerling, EAA, University of the Federal Armed Forces in Munich

9:30  
The effects of electromobility and reduced consumption on E/E architectures and processes  
Dr. Rolf Zöller, Dr. Ing. h.c. F. Porsche AG

10:00  
Refreshment break with coffee and tea

**ENGINE MECHANICS AND 2-STROKE ENGINES**  
Chairman: Prof. Dr. Georg Wachtmeister

10:30  
Predicting the behaviour of hydrodynamic bearings for the pre-dimensioning of crankshafts  
Mehmet Çağrı Çevik, VKA, RWTH Aachen University; H. Hermann, C. Ritterskamp, FEV Motorentechnik GmbH

11:00  
The influence of position and form of the coolant duct on the piston temperature in diesel engines for private automobiles  
Eike Stitterich, MAHLE; M. Geisselbrecht, Dr. R. Künzel, MAHLE International GmbH

11:30  
High-performance wear protection in automotive applications using nano-particle containing bonded coatings  
Rudolf Zechel, Klüber Lubrication München KG; J. Windrich, Schaeffler KG

12:00  
Low-emission and cost-effective two-stroke SI engines for handheld power tools  
Dr. Tim Gegg, Dr. M. Heinke, Dr. A. Kölmel, Dr. C. Möser, H. Dangelmaier, ANDREAS STIHL AG & Co. KG

12:30  
Lunch together in the exhibition area

**BATTERY TECHNOLOGIES**  
Chairman: Prof. Dr. Werner Tillmetz

13:30  
Advanced battery modeling for energy and thermal management of a vehicle  
Lucas Kostetzer, S. Nallabolu, E. Rudnyi, CADFEM GmbH; M. Geppert, D. Quinger, LION Smart GmbH

14:00  
Intelligent charging of an electric vehicle’s battery – challenges for the embedded software  
Dirk Großmann, Vector Informatik GmbH

14:30  
Efficient testing of battery management systems on battery cell level  
Thomas Schmerler, H. Jakoby, T. Dollmaier, J. Crepin, ETAS GmbH

**SECTION 4**  
Reutlingen Room

**REPORTS FROM FVV PROJECTS**  
Chairman: Dr. Karl Kollmann

8:30  
Future fuels for diesel engines  
Peter Bloch, Prof. Dr. M. Bargende, IVK, University of Stuttgart; B. Schneider, W. Kreutner, S. Caroso, Prof. K. Boulouchos, LAV, ETH Zurich

9:00  
Laser ignition in DI gasoline engines  
Dr. Heiko Kubach, G. Bonzhofer, Prof. Dr. U. Spicher, IFKM, Karlsruhe Institute of Technology

9:30  
Concepts for on-line simulation and feedback control of pollutant emissions from diesel engines  
Frédéric Tschanz, Institute for Dynamic Systems and Control Engineering, A. Amstutz, Prof. Dr. L. Guzella, C. Barro, P. Obrecht, Prof. Dr. K. Boulouchos, Swiss Federal Institute of Technology Zurich

10:00  
Refreshment break with coffee and tea

**RAILWAY VEHICLES**  
Chairman: Prof. Dr. Dieter Bögle

10:30  
Application of high-fidelity simulators for the design of railway vehicles  
Dr. Marco Nock, KNORR-BREMSE Systems for Rail Vehicles; P. Williamson, Sydac Ltd.; Dr. D. Ward, Sydac Pty Ltd.

11:00  
Mass and energy reduction of railway vehicles – a comprehensive analysis  
Holger Dittus, J. König, Prof. Dr. H. E. Friedrich, Institute for Vehicle Concepts, DLR e. V.

11:30  
ÜDF – monitoring system for bogie diagnostics in railway vehicles of Deutsche Bahn AG  
Dr. Lars Müller, DB Systemtechnik, Deutsche Bahn AG

12:00  
Electric mobility – electric traction technology for light rail vehicles  
Roland Jauß, Stuttgarter Straßenbahnen AG

12:30  
Lunch together in the exhibition area

**CFD AND ACOUSTIC SIMULATION**  
Chairman: Prof. Dr. Helmut Tschöke

13:30  
Diesel engine cooling system performance prediction using CFD  
Ian Kennedy, S. Spence, R. Cooper, School of Mechanical and Aerospace Engineering, Queen’s University Belfast; G. Spratt, FG Wilson (Engineering) Ltd.

14:00  
QuickSim in motorsports  
Dr. Marco Chiodi, A. Ferrari, O. Mack, Prof. Dr. M. Bargende, FKFS; Dr. D. Wichelhaus, Volkswagen Motorsport

14:30  
Virtual acoustic test track: real-time simulation of engine sound  
Dr. Peter Fischer, S. Holzer, dTech Steyr – Dynamics & Technology Services GmbH
PLenary Section

König Karl Hall

8:30 Four parallel sections

10:00 Refreshment break with coffee and tea

10:30 Four parallel sections

12:00 Lunch together in the exhibition area

13:30 Four parallel sections

15:00 Refreshment break with coffee and tea

15:30 Panel discussion

Rationality and emotion – what will determine the future of the automobile?

Moderator:
Johannes Winterhagen, Editor-in-Chief ATZ

Introductory presentation:
Prof. Dr. Peter Kruse, nextpractice GmbH

Participants:
Wolfgang Dürheimer, Board Member for Research and Development, Dr. Ing. h.c. F. Porsche AG
Tanja Gönner, Minister for the Environment, Nature Conservation and Transport for the Baden-Württemberg region
Prof. Dr. Peter Kruse, nextpractice GmbH
Prof. Giorgio Rizzoni, Center for Automotive Research, The Ohio State University
Alfred Weber, Chairman of the Board, MANN+HUMMEL GmbH

16:30 Keynote speech
Stefan Mappus, Prime Minister of the State of Baden-Württemberg (requested)

16:45 Closing remarks
Prof. Dr. Jochen Wiedemann, Member of the FKFS Board of Management and Professor for Automotive Engineering at the Institute for Internal Combustion Engines and Automotive Engineering (IVK), University of Stuttgart

17:00 Conference ends
EXHIBITION

Tuesday 22 February 2011, Wednesday 23 February 2011

On Tuesday 22 February and Wednesday 23 February, a parallel trade exhibition will once again be held in the foyer of the conference venue. The automotive manufacturers and suppliers to the automotive industry will present the latest developments in vehicle and engine technology and metrology to an informed specialist audience.

YOUR PRESENTATION PLATFORM

You can present your latest products and services to the specialist audience as an exhibitor 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:
Kai Pielicke
ap-Media on behalf of ATZlive
Phone +49 (0)6242 / 990565
kai.pielicke@ap-media.eu

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List of Exhibitors – Stuttgart Symposium 2010
SPEAKERS, MEMBERS OF THE SCIENTIFIC ADVISORY BOARD, CHAIRMEN

Prof. Dr. Dr. Albert Albers  
IPEK, Karlsruhe Institute of Technology
Silvestre Artiaga-Hahn  
Adam Opel GmbH
Dr. Frank Atzler  
Continental Automotive GmbH
Prof. Dr. Bernard Bäker  
IAD, TU Dresden
Prof. Dr. Michael Bargende  
FKFS/IVK, University of Stuttgart
Prof. Dr. Christian Beidl  
VKM, TU Darmstadt
Prof. Dr. Heinz Peter Berg  
VFA, Brandenburg Technical University in Cottbus
Peter Bloch  
IVK, University of Stuttgart
Prof. Dr. Dieter Bögle  
Michael Böhm  
IVK, University of Stuttgart
Prof. Dr. Konstantinos Boulouchos  
LAW, ETH Zurich
Lionel Broglia  
LMS Imagine
Ernst Burgbacher  
Parliamentary Secretary of State at the Federal Ministry for Economics and Technology
Mehmet Çağri Çevik  
VKA, RWTH Aachen University
Dr. Marco Chiodi  
FKFS
Marco Decker  
TU Berlin
Jan Deleener  
LMS International
Christian Diamantidis  
Voith Turbo GmbH & Co. KG
Michael Dick  
AUDI AG
Dr. Panayotis Dimopoulos Eggenschwiler  
Empa, Swiss Federal Laboratories for Materials Science and Technology
Holger Dittus  
Institute for Vehicle Concepts, DLR e. V.
Wolfgang Dürheimer  
Dr. Ing. h.c. F. Porsche AG
Prof. Dr. Lutz Eckstein  
Ika, RWTH Aachen University
Dr. Claus Ehlers  
Daimler AG
Prof. Dr. Helmut Eichlseder  
VKM-THD, TU Graz
Prof. Dr. Peter Eilts  
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