



Lehrstuhl für
Fahrzeugtechnik

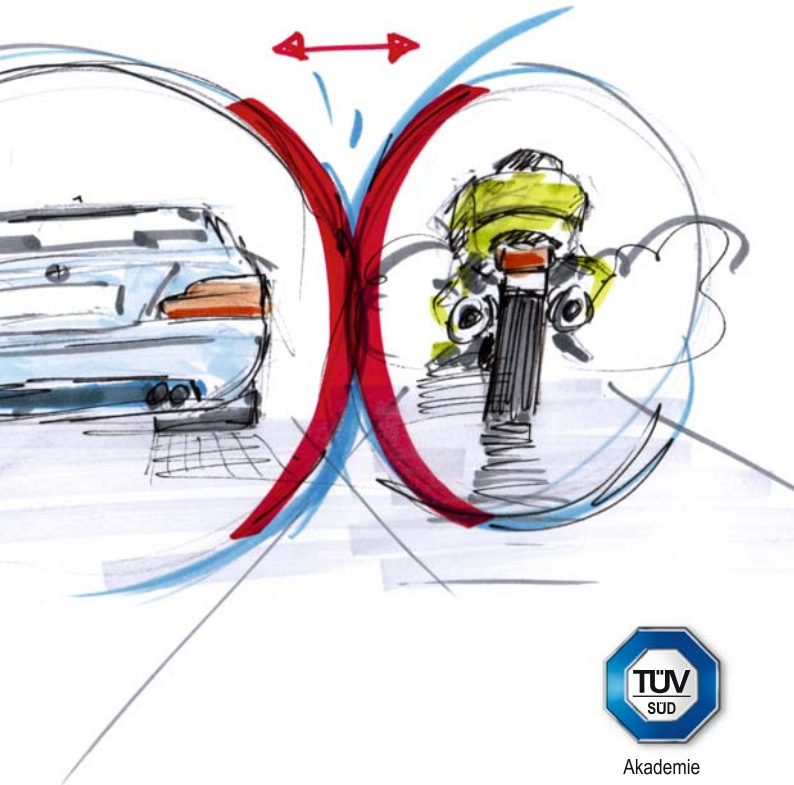


Wissenschaftszentrum Elektromobilität

Programme 4th Conference Safety through Driver Assistance

April 15 – 16, 2010, Munich, Germany

New focus: Electric Mobility



Akademie

Safety through Driver Assistance

The safety of a ride in a motor vehicle is decisively affected by the quality of vehicle guidance which is provided by the driver and the assistance systems supporting him. Nowadays assistance systems represent a significant contribution to active safety. It can be assumed that this process will be continued as soon as the assistance systems are adjusted in a balanced way to the human ability in vehicle guidance and as soon as those, compared to the driver, are equipped with enhanced input information e. g. via car-to-car communication. The actions of the assistance systems are based on a continuous analysis of the driving and traffic situation. This is performed simultaneously with the drivers' interpretation of the situation and takes into account the drivers' activities and – increasingly – his current state of attention and fatigue. Depending on the accuracy of the situation analysis the assistance system can directly influence the driving process or can offer help to the drivers' decisions as “artificial co-pilot”.

The continuously increasing features of sensor technology and data processing involve an improvement of the assistance systems' interpretation abilities, though far from reaching human performance in vehicle guidance in complex traffic situations. Contributions of assistance systems therefore have to be aligned with a permanently updated interaction within the system of driver, vehicle and traffic situation.

The increased electrification of power trains enlarges on the one hand the functional range of assistance systems. On the other hand however, it carries new challenges with regards to safety and usability. To which extent are present systems adaptable? Which chances – related to safety – do result from the current possibilities of electric mobility?

Apart from presenting new developments and enhanced functions in the field of driver assistance systems the conference **Safety through Driver Assistance** offers a platform for an interdisciplinary information exchange.

The conference addresses

- The automotive and supplier industry
- Development service providers
- System providers
- Universities and research institutions
- Authorities and federations

Programme committee

- Prof. Dr. Heiner Bubb, Prof. Dr. Klaus Bengler, Technical University of Munich, Institute of Ergonomics
- Prof. Dr. Georg Färber, Technical University of Munich, Lehrstuhl für Realzeit-Computersysteme (RCS)
- Dr. Johann Gwehenberger, Allianz Zentrum für Technik GmbH
- Dr. Uwe Koser, AUDI AG
- Dr. Ulrich Kreßel, Daimler AG
- Prof. Dr. Klaus Langwieder, International Safety Consulting
- Jochen Pfaeffle, Robert Bosch GmbH
- Dr. Peter E. Rieth, Continental Automotive Systems
- Walter Schwertberger, MAN Nutzfahrzeuge AG
- Andre Seeck, Director and Professor, Federal Highway Research Institute (BAST)
- Prof. Dr. Gernot Spiegelberg, Siemens AG
- Prof. Dr. Christoph Stiller, Karlsruhe Institute of Technology, Department of Measurement and Control (MRT)
- Dr. Peter F. Tropschuh, AUDI AG
- Dr. Lothar Wech, TÜV SÜD Automotive GmbH
- Dr. Dirk Wisselmann, BMW Group Forschung und Technik
- Prof. Dr. Hans-Joachim Wünsche, Universität der Bundeswehr München

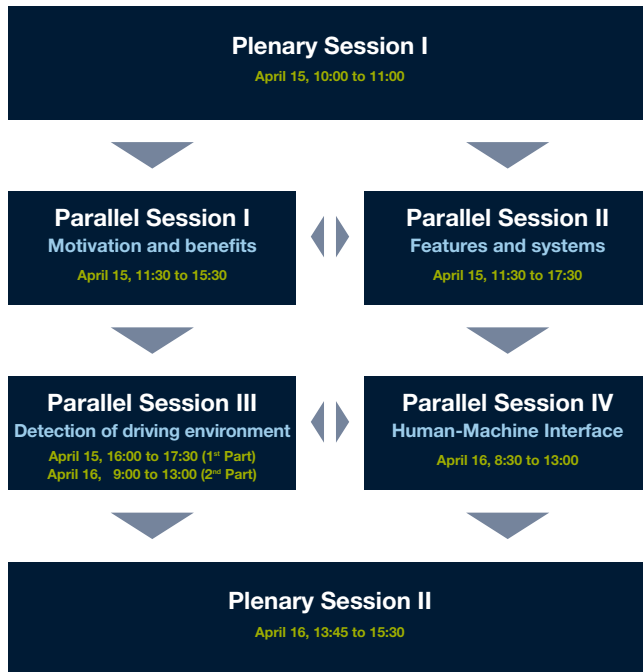
Chairman

- Prof. Dr. Bernd Heißen, Technical University of Munich, Lehrstuhl für Fahrzeugtechnik
- Prof. Dr. Markus Lienkamp, Technical University of Munich, Lehrstuhl für Fahrzeugtechnik

Exhibition

Interested companies have the opportunity to present their products and services in the exhibition which will be held parallel to the conference. Reserve your booth today! Enquiries should be addressed to Ute Alius: ute.alius@tuev-sued.de, Phone +49 89 5791-1647

Programme Overview



The conference is parted in two plenary sessions and four parallel sessions. The plenary sessions are for all participants. The parallel sessions provide the participants the opportunity to compose their individual schedule by choosing the speeches they are interested in.

Agenda on April 15, 2010

9:15 Welcome and Key Note:
Driver assistance and electric mobility
Prof. Dr. Markus Lienkamp,
TU München, Lehrstuhl für Fahrzeugtechnik

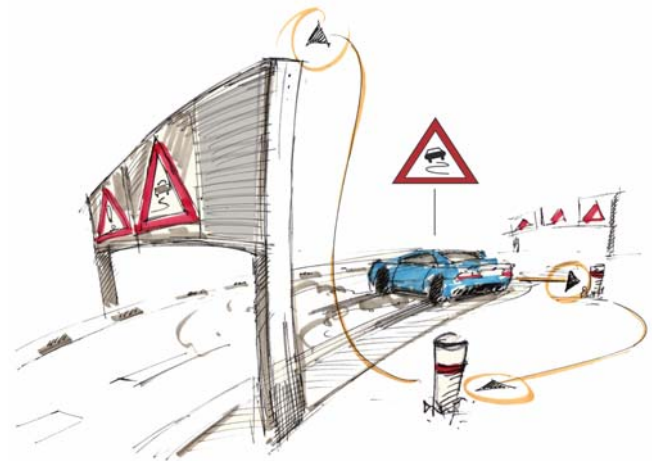
Plenary Session I

Chair: Prof. Dr. Markus Lienkamp,
TU München, Lehrstuhl für Fahrzeugtechnik

10:00 Contribution of driver assistant systems to active and passive safety – integrated safety as an answer to increasing vehicle safety requirements
Klaus Kompass, Christian Domsch, Christian Gruber, BMW AG

10:30 Driver assistance system: toward seamless collaboration between man and vehicle
Akio Kinoshita, PhD, Nissan Research Center, Japan

11:00 Coffee break



Parallel Session I

Motivation and benefits

Chair: Prof. Dr. Klaus Langwieder,
International Safety Consulting

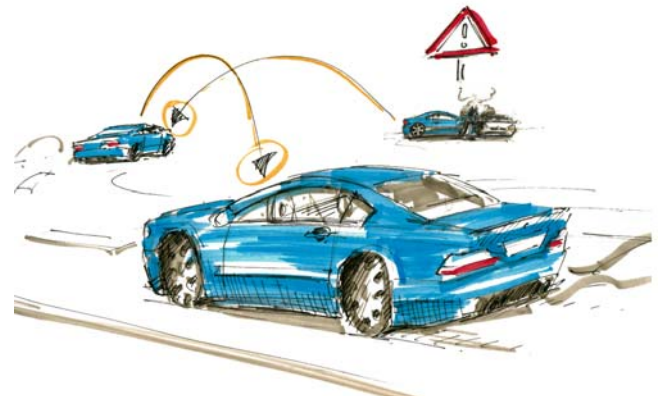
- 11:30 Capabilities of driver assistance systems in accident scenarios: An interdisciplinary interconnection analysis based on real accident data used as approach for the potential evaluation of driver assistance systems
Ulrich Chiellino, Antonio Ernstberger, Michael Nerlich, AARU Verkehrsunfallforschung am Klinikum der Universität Regensburg;
Eckart Donner, Thomas Winkle, Birgit Graab, AUDI AG
- 12:00 Safety benefits of driver assistance systems – current results from Allianz data
Dr. Johann Gwehenberger, Dr. Jörg Kubitzki, Thomas Behl, ATZ Automotive – Allianz Zentrum für Technik
- 12:30 Economic assessment of cooperative intelligent vehicle safety systems from the point of view of the user – some results of the SAFESPOT IP
Dr. Andreas Lüdeke, Roland Schindhelm, Bundesanstalt für Straßenwesen (BASt);
Dr. Thorsten Geißler, Dr. Ulrich Westerkamp, IfV Köln; Martijn de Kievit, Dr. Philippus Feenstra, TNO (NL)
- 13:00 Lunch break
- 14:00 Assessment of integrated safety – methodology for an equivalent consideration of driver assistance in new car assessment
Dr. Robert Zobel, Dr. Anja Kohsiek, Michael Stanzel, Volkswagen AG; Dr. Thorsten Kölzow, Audi AG; Stefan Schramm, INI.TUM

Parallel Session II

Features and systems

Chair: Dr. Dirk Wisselmann,
BMW Group Forschung und Technik

- 11:30 Evasive manoeuvres for accident avoidance – challenges and technical development steps
Dr. Michael Fausten, Thomas Häußler, Robert Bosch GmbH
- 12:00 Haptic recommendations for evasive maneuvers in forward collision situations
Andro Kleen, Dr. Gerrit Schmidt, Volkswagen AG; Dr. Jo Ann Sison, Dr. Brian Lathrop, Electronics Research Lab, Volkswagen of America, Inc
- 12:30 Active Hazard Braking in trucks
Markus Brummer, Walter Schwertberger, Karlheinz Dörner, MAN Nutzfahrzeuge AG
- 13:00 Lunch break
- 14:00 Virtual drives as an important component for functional tests of Contiguard
Dr. Marc Fischer, Tobias Fiedler, ADC Automotive Distance Control Systems GmbH; Philipp Huth, Bernhard Schick, IPG Automotive GmbH



Parallel Session I (continuation)

Motivation and benefits

- 14:30 The Advanced Driver Assistance Systems (ADAS) in the area of conflict between customers expectations and developers ambitions
Jens Plättner, Tobias Ständer, IQST GmbH;
Udo Steininger, Michael Hüttinger, TÜV SÜD Automotive GmbH
- 15:00 euroFOT – a European field operational test on driver assistance systems
Aria Etemad, Christoph Kessler,
Ford Forschungszentrum Aachen GmbH
- 15:30 Coffee break

Parallel Session III

Infrastructure and detection of driving environment (1st part)

Chair: Dr. Lothar Wech, TÜV SÜD Automotive GmbH

- 16:00 Road boundary estimation in construction sites with application in lateral assistance functions
Dr. Michael Darms, Matthias Komar, Dirk Waldbauer,
Dr. Stefan Lüke, Continental
- 16:30 Lidar based lane and road boundary detection with occupancy grids for lane keeping and lane change assist systems
Florian Homm, Alexander Duda, Dr. Nico Kämpchen,
Dr. Peter Waldmann, Michael Ardelt,
BMW Group Forschung und Technik
- 17:00 Robust detection of road users for a collision avoidance system at opening car doors
Christian Scharfenberger, Prof. Dr. Georg Färber,
TU München, Lehrstuhl für Realzeit-Computersysteme
- 17:30 End of the 1st conference day
- 19:00 Evening event

Parallel Session II (continuation)

Features and systems

- 14:30 Energy efficient ACC with digital horizon
Adrian Zlocki, ika - Institut für Kraftfahrzeuge,
RWTH Aachen University
- 15:00 Action plans for reaching the safe state with an autonomous congestion assistant
Markus Hörwick, Technische Universität München,
Lehrstuhl für Fahrzeugtechnik;
Dr. Karl-Heinz Siedersberger, AUDI AG
- 15:30 Coffee break
- Chair: Dr. Ulrich Kreßel, Daimler AG
- 16:00 Tracking and motion prediction of vehicles in complex urban traffic scenes
Markus Hahn, Dr. Christian Wöhler, Daimler AG;
Julian Einhaus, Christoph Hermes, Prof. Dr. Franz Kummert, Bielefeld University, Applied Informatics
- 16:30 Systematical identification of driving situations for the evaluation of driver assistance systems
Gunnar Tigges, Prof. Bernd Heißing, TU München,
Lehrstuhl für Fahrzeugtechnik; Karlheinz Dörner,
Walter Schwertberger, MAN Nutzfahrzeuge AG
- 17:00 Networking of test and simulation methods for the development of Advanced Driver Assistance Systems (ADAS)
Benedikt Strasser, Prof. Dr. Heiner Bubb,
TU München, Faculty of Mechanical Engineering,
Chair in Ergonomics; A. Siegel, Audi Electronics Venture;
Dr. K.-H. Siedersberger, AUDI AG;
Prof. Dr. M. Maurer, Technische Universität Braunschweig, Institute of Control Engineering
- 17:30 End of the 1st conference day
- 19:00 Evening event

Agenda on April 16, 2010

Parallel Session III

Infrastructure and detection of driving environment (2nd part)

Chair: Prof. Dr. Georg Färber, TU München,
Lehrstuhl für Realzeit-Computersysteme (RCS)

- 9:00 Efficient, parallelized computation of image correspondences for automotive vision
Michael Schweitzer, Prof. Dr. Hans-Joachim Wünsche, Universität der Bundeswehr München, Institut für Technik Autonomer Systeme
- 9:30 A structure and motion approach to vehicle environment perception in complex surroundings
Wojciech Derendarz, Dr. Thorsten Graf, Volkswagen AG; Prof. Dr. Friedrich M. Wahl, Technische Universität Braunschweig
- 10:00 Fast computation of detailed occupancy grids from dense stereo disparity images
Henning Lategahn, Bernd Kitt, Karlsruhe Institut of Technology (KIT); Andreas Wege, Carneq GmbH; Dr. Thorsten Graf, Dr. Jan Effertz, Volkswagen AG
- 10:30 Coffee break
- 11:00 Radar-interference-based height estimation of driving environment objects
Fabian Diewald, Dr. Jens Klappstein, Dr. Jürgen Dickmann, Daimler AG; Prof. Dr. Klaus Dietmayer, Universität Ulm
- 11:30 Fundamental decisions on functional architecture for Advanced Driver Assistance Systems using the example of a active braking guard
Mohamed Essayed Bouzouraa, AUDI AG; Michael Reichel, Prof. Dr. Markus Maurer, Technische Universität Braunschweig; Dr. Karl-Heinz Siedersberger, Dr. Ulrich Hofmann, AUDI AG

Parallel Session IV

Human-Machine Interface

Chair: Dr. Uwe Koser, AUDI AG

- 8:30 Determination of vehicle dynamics limits in relation to different drivers
Prof. Dr. Toralf Trautmann, Hochschule für Technik und Wirtschaft Dresden; Burkhardt Müller et al., fsd Fahrzeugsystemdaten GmbH
- 9:00 Development of criteria for the design of age based active vehicle safety systems
Max Klingender, Max Haberstroh, Dr. Richard Ramakers, Prof. Dr. Klaus Henning, ZLW/IMA Aachen
- 9:30 Differences in response time between distracted and attentive drivers
Dr. Wolfgang Stolzmann, Andreas Proettel, Ann Sokoll, Daimler AG
- 10:00 Adapting assistance information to the variable field of attention of a driver (adaptive HMI)
Dr. Wolfgang Sassin, EP COM
- 10:30 Coffee break
- 11:00 Influencing driving speed with large abstract graphical displays
Florian Laquai, Gerhard Rigoll, TU München, Lehrstuhl für Mensch-Maschine-Kommunikation
- 11:30 Haptic shifting indication at the active accelerator: Field operational tests for parameterization and determining the influence on fuel consumption
Dr. Christian Lange, Prof. Heiner Bubb, Prof. Klaus Bengler, Technische Universität München, Lehrstuhl für Ergonomie; Dr. Andreas Zell, Gregor Schmitt, Antonio Arcati, Continental Automotive

Parallel Session III (continuation)

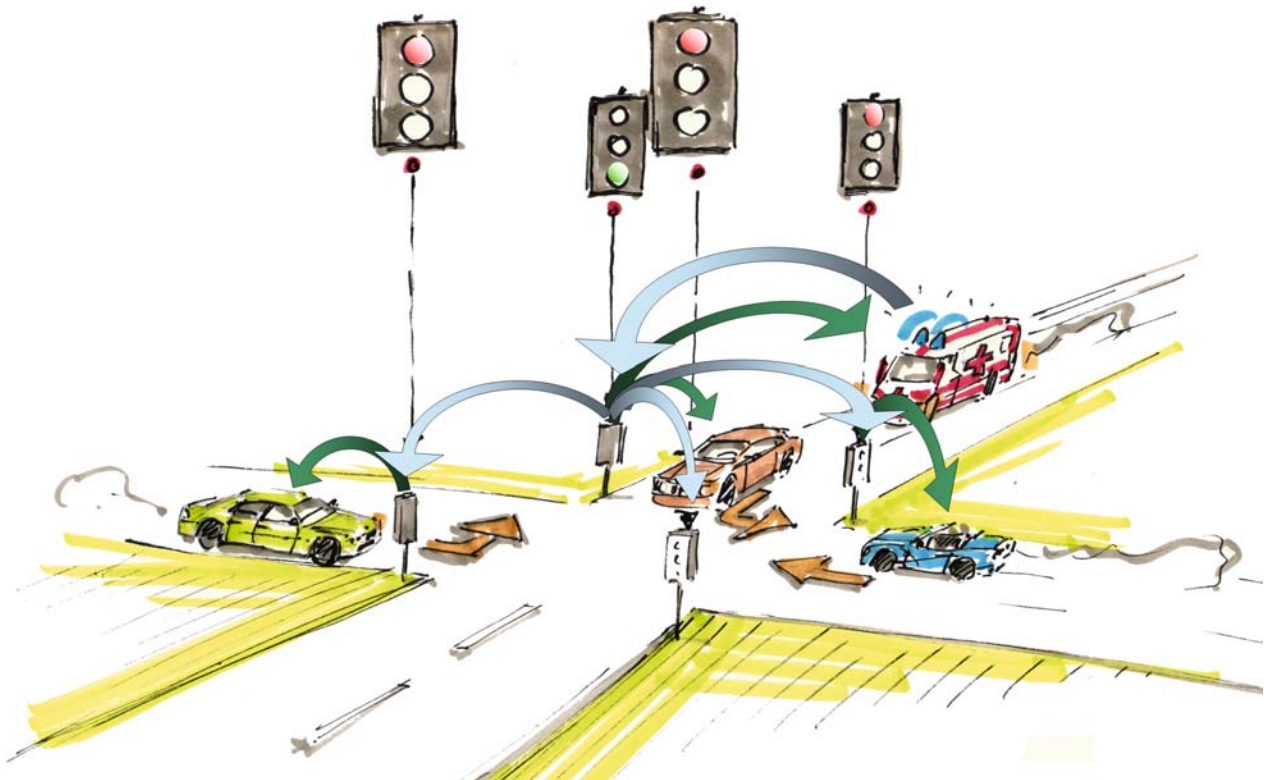
Infrastructure and detection of driving environment (2nd part)

- 12:00 Advanced evaluation of information fusion for perceptive driver assistance systems based on an environment and driving simulation
Dr. Marcus Strand, Marco Ziegenmeyer, Tobias Bär, Dennis Nienhüser, Thomas Schamm, Thomas Gump, J. Marius Zöllner, FZI Forschungszentrum Informatik, Universität Karlsruhe; Josef Henning, Bernhard Schick, IPG Automotive GmbH
- 12:30 Driver specific analysis of driving behavior for the parametrization of active safety systems
Dr. Mark Gonter, Volkswagen AG;
Colin Bauer, Carmeq GmbH;
Prof. Raul Rojas, Freie Universität Berlin
- 13:00 Lunch break

Parallel Session IV (continuation)

Human-Machine Interface

- 12:00 Active safety of motorcycles:
typical driver behaviour and effects of situation-adaptive conspicuity enhancement
Dr. Wolfgang Fastenmeier, Dr. Herbert Gstalter, mensch-verkehr-umwelt, Institut für Angewandte Psychologie; Dr. Felix Klanner, Reiner Pfeifer, BMW Motorrad; Arne Purschwitz, Udo Rietschel, BMW Group Forschung und Technik
- 12:30 Contact analog displays for the ACC – a conflict of objects between stimulation and distraction
Boris Israel, Maria Seitz, Prof. i.R. Dr. Heiner Bubb, TU München, Lehrstuhl für Ergonomie;
Bernhard Senner, AUDI AG
- 13:00 Lunch break



Plenary Session II

Chair: Prof. Dr. Bernd Heiing

- 13:45 Car2X
Matthias Schulze, Daimler AG
- 14:15 The BMW Track Trainer – fully automated driving
at high-speed on the Nrburgring Nordschleife
Dr. Peter Waldmann, Daniel Niehues,
BMW Group Forschung und Technik
- 14:45 Outlook and farewell
Prof. Dr. Bernd Heiing,
TU Mnchen, Lehrstuhl fr Fahrzeugtechnik
- 15:30 End of the conference

Registration

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4th Conference Safety through Driver Assistance
April 15 – 16, 2010, Munich, Germany

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Cancellation policy: Cancellation of registration up to 14 days prior to the event is free of charge. In case of cancellation beyond this deadline and up to the third working day prior to the event, 50 % of the invoice amount is due for payment. In case of cancellation beyond this deadline or failure to participate in the event, the full amount of the invoice shall be due. I accept changes in the programme and the general terms and conditions of participation of TV SD Akademie GmbH.

Date / Signature



Conference fee

€ 790,00 plus VAT

For members of universities a 50% discount will be granted. The registration fee includes participation, conference documentation, lunch and drinks during breaks as well as the evening event on April 15th.

Conference venue

TÜV SÜD Akademie GmbH

Westendstrasse 199

80686 Munich, Germany

You will receive travel and hotel information with the confirmation of your registration.

Registration and information

TÜV SÜD Akademie GmbH

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