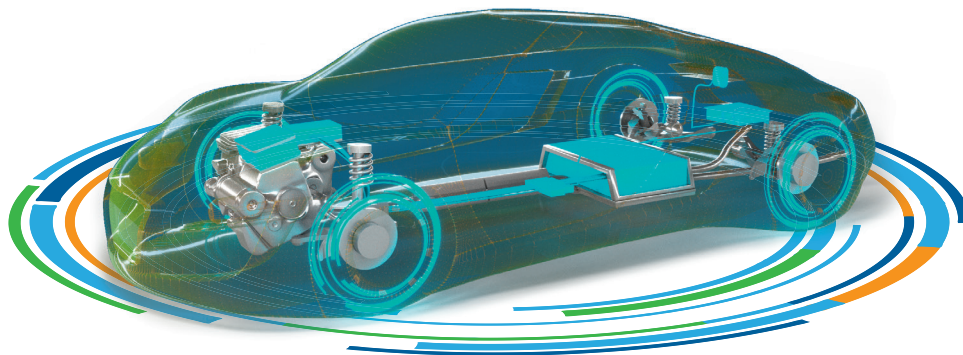


AVL



INTERNATIONAL SYMPOSIUM ON DEVELOPMENT METHODOLOGY



Program

8th Int. Symposium on Development Methodology

12th - 13th of November 2019, Kurhaus Wiesbaden, Germany

A joint event of AVL and Prof. C. Beidl – Technical University Darmstadt

FOREWORD

On November 12th and 13th, 2019, the 8th International Symposium on Development Methodology will take place, focusing on the field of vehicle and powertrain development. The event is organized by AVL together with the Institute for Internal Combustion Engines and Powertrain Systems of the Technical University Darmstadt.

New Times and New Challenges – this describes the current situation the powertrain development industry is facing. How will individual mobility look like in the coming years and what types of powertrain concepts will coexist? What are the right methodical approaches to master these challenges? RDE and the increasing electrification of powertrains are the main drivers in technological development, what will come in addition and where will it lead us?

We also experience dynamic developments in the commercial vehicle and offroad sector. One thing is

for sure – Methods will play an essential role for all solutions. Therefore we choose New Times! New Challenges! New Methods?! as the theme for the 2019 symposium.

Learn more about the new development methods in practice. Leading OEMs, suppliers and universities present new approaches from the development areas of ADAS & Connectivity, Electrification, Big Data as well as RDE & ICE! In addition, you can expect numerous speakers from the companies BMW, Continental, Daimler, Ford, Honda, JLR, John Deere, Mahle, Nvidia, Porsche, Punch, Ricardo, Robert Bosch, Toyota, Valeo Siemens, VW as well as from the universities of Aachen, Berlin, Darmstadt, Hamburg, Kempten and many more.

We are looking forward to meeting you!

Your program committee



„In the field of methodology one of the best events with the latest development topics, first-class lectures and networking at the highest level.“

Dr. Sven Christian Fritz, MTU Friedrichshafen GmbH, Specialist for DoE, method development, testbed automation and virtual testbeds

GOOD REASONS FOR YOUR VISIT

- Tailor-made event: A unique event with target-oriented issues and practical experiences in the areas of RDE & ICE, electrification, Big Data as well as ADAS & Connectivity. For people involved with development methodology in vehicle and powertrain development.
- Find out about approaches of other organisations for current legislative or technology issues, e.g. RDE, electrification or ADAS.
- Comprehensive and compact: Get up-to-date in just two days and find out about new trends and developments in development methodology.
- Theory and practical knowledge at first hand: Learn about new development methods and how you can adapt the methods to changing requirements directly from the users.
- Meet specialists and executives in the development methodology and expand your personal network.
- Take a time-out to collect ideas and impulses for your career.

PROGRAM COMMITTEE



Prof. Christian Beidl
Technical University
Darmstadt



Christopher Christ
AVL List GmbH



Dieter Gundel
Volkswagen AG



Dr. Olaf Herrmann
DENSO Automotive
Germany GmbH



Roland Jeutter
AVL Deutschland GmbH



Thorsten Kniesa
Opel Automobile GmbH



Dr. Michael Kordon
AVL Commercial Driveline &
Tractor Engineering GmbH



Eike Martini
Valeo Siemens
eAutomotive GmbH



Dr. Wolfgang Puntigam
AVL List GmbH



Peter Renninger
Daimler AG



Prof. Bernhard Schick
Kempten University of
Applied Sciences

GENERAL INFORMATION

DATE & VENUE

November 12 - 13, 2019, Kurhaus Wiesbaden, Germany

FEE

Registration fee	1.100,- Euro
Early bird (till July 26, 2019)	975,- Euro
University members	550,- Euro
Students	220,- Euro

Fees include proceedings, catering and evening event
(plus 19 % VAT).

CONFERENCE LANGUAGES

German and English (simultaneous translation)

HOTEL RESERVATION

We have negotiated some attractive prices with a number of hotels in Wiesbaden. You find the hotel list at www.avl.com/symposium-development-methodology. Please book your accommodation directly at the hotel and settle your hotel bill at departure.

REGISTRATION AND FURTHER INFORMATION

www.avl.com/symposium-development-methodology

CONTACT

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CONFERENCE PROGRAM – TUESDAY, NOVEMBER 12, 2019

08.45 Welcome and Opening of the 8th International Symposium on Development Methodology
Prof. H. List – AVL List GmbH

Session 1: Keynote; Chairman: Prof. C. Beidl, Technical University Darmstadt

09.00 Why Now?
M. Forissier – Valeo Powertrain Systems
09.30 Climate Protection + the Transport Sector - New Approaches
F. Loogen – e-mobil BW GmbH

10.00 Coffee break

Session 2: New Times! – New Methods?!; Chairman: Prof. C. Beidl, Technical University Darmstadt

10.30 RDE – From Road to Rig
S. Dhingra, D. Homan – Jaguar Land Rover Limited; D. Lemmerer, H. P. Gigerl – AVL List GmbH
11.00 Steady-State Measurements in DoE – an Obsolete Heritage of the Past?!
S. Scheidel, M.-S. Gande, P. Williams, A. Wagner, H. P. Grassberger – AVL List GmbH
11.30 Continuous Model-Based Validation of Electric Traction Drives
S. Boog, Dr. S. Görhardt, R. Müller, Dr. A. Elsäßer – MAHLE International GmbH
12.00 Machine Learning in Vehicle Development: Methods and Use Cases
Dr. K. Jonas, F. Noering – Volkswagen AG

12.30 Lunch

PARALLEL SESSION 3A

New Challenges in Electrification; Chairman: E. Martini,
Valeo Siemens eAutomotive Germany GmbH

13.45 Method to Transfer High Dynamic Driving
Maneuvers with Electric Drives on a Powertrain
Test Bench
L. Nigl, Dr. J.-M. Birkhold – Dr. Ing. h.c. F.
Porsche AG; K. Bause – IPEK – Institut für
Produktentwicklung am KIT
14.15 Transition and Reuse of ICE Testing Tools and
Methods to Ensure a Competitive Fuel Cell
Development
H. P. Grassberger, Dr. R. Neubauer, T. Krauss –
AVL List GmbH
14.45 Paradigm Change in Application-Methods for
Electrical-Drive-Controllers: From-Self-
Commissioning for Industrial Drives to
Map-Measurement-Based Identification-
Methods for Electrical Traction Drives of EVs
Dr. A. Rambatius, M. Steinmüller – Valeo
Siemens eAutomotive Germany GmbH

15.15 Coffee Break

PARALLEL SESSION 3B

New Methods! Existing Data;
Chairman: P. Renninger, Daimler AG

13.45 Machine Learning Approach for the Control of
Dynamic Systems in the Air Path of Diesel
Engines
M. O. Wagner – Daimler AG
14.15 Structured Data Management & Analytics
Solution
Barney Nefcy – Ford Motor Company
14.45 Integration of Physical Knowledge in Empirical
Models – a New Approach to Regression
Analysis
Prof. G. Kronberger, C. Haider, Dr. M.
Kommenda – University of Applied Sciences
Upper Austria; S. Scheidel – AVL List GmbH;
Dr. M. Kordon – AVL Commercial Driveline &
Tractor Engineering GmbH

15.15 Coffee Break

PARALLEL SESSION 3A

New Challenges in Electrification; Chairman:
Prof. G. Hohenberg, IVD Prof. Hohenberg GmbH

- 15.45 Drive Inverter Testing with Virtual E-motors Using Power Hardware-in-the-Loop Emulation Concept
Dr. A. Schmitt, Dr. P. Winzer, Dr. M. Schnarrenberger, H. Hammerer – AVL SET GmbH
- 16.15 To Charge, or not to Charge
M. Bersac – Valeo Siemens eAutomotive France SAS
- 16.45 Optimization of a Scenario-Based Thermal Management for a Battery Electric Vehicle Through Automated Mission Profile Simulation
A. Kowallik – BMW AG; Prof. C. Beidl – Technical University Darmstadt
- 17.15 ThermoLab for Battery Electric Vehicle – Thermal Development on Testbeds
A. Koller, Dr. H. Raiser – Dr. Ing. h.c. F. Porsche AG; C. Mayr, M. Walcher – AVL List GmbH; D. Ciglar – AVL-AST d.o.o.
- 18.30 Transfer to the Evening Event
- 19:00 Welcome Cocktail followed by Dinner

PARALLEL SESSION 3B

New Methods! Existing Data;
Chairman: D. Gundel, Volkswagen AG

- 15.45 Artificial Intelligence for the Parametrization of Advanced Powertrain Control Systems
Dr. H.-J. Wiehoff, A. Brandl, M. Kausche, M. Wutz, T. A. Gargiso – CPT Group GmbH
- 16.15 Simulation parameter lifecycle management as key element in the powertrain development process at Toyota
K. Kishino – TOYOTA Motor Corporation; Dr. J. Zehetner, S. Forstner – AVL List GmbH; H. Akimatsu – AVL Japan K.K.
- 16.45 Fast Analysis of Worldwide Distributed Endurance Run Data
Dr. T. Abthoff, D. Boja – NorCom Information Technology GmbH & Co. KGaA
- 17.15 Virtual Commissioning for Ex-Ante Data Analytics Within the Production of Electric Drive Systems
T. Möller, Prof. A. Kampker, S. Wessel, P. Treichel – RWTH Aachen University

CONFERENCE PROGRAM – WEDNESDAY, NOVEMBER 13, 2019

PARALLEL SESSION 4A

New Methods RDE; Chairman: Dr. M. Kordon, AVL Commercial Driveline & Tractor Engineering GmbH

- 09.00 Optimization of Cold Start Emissions on 4x4 Powertrain Testbed – a Key to RDE Emission Compliance
F. Duchi, S. Koch – AVL List GmbH; Dr. D. Buch – AVL Deutschland GmbH
- 09.30 Optimization of Dynamics and Start Behavior on the RDE Engine Test Bench by Using a Real-Time Tool Chain in CoSimulation
T. Steinhaus, H. Zlojo, Prof. C. Beidl – Technical University Darmstadt; M. Conin – IVD Deutschland GmbH
- 10.00 Digitalization of Powertrain Calibration – Hardware-in-the-Loop and its Opportunities
S.-Y Lee, Prof. J. Andert – RWTH Aachen University; Dr. J. Schaub, M. Kötter, T. Körfer, Dr. H. Neises, S. Ghetti, B. Lindemann – FEV Europe GmbH
- 10.30 Coffee Break

PARALLEL SESSION 4B

New Challenges! ADAS & Connectivity; Chairman: Prof. Schick, Kempten University of Applied Sciences

- 09.00 Connected Testing of ADAS and Powertrain Functions on Integration Test Beds
Dr. F. Pfister – IPG Automotive GmbH; S. Hakuli – Continental Engineering Services GmbH
- 09.30 Steering at the Powertrain Test Bench – A New Validation Method for Highly Automated Systems up to the Limits of Vehicle Dynamics
A. Hartwecker, O. Al-Saidi, Prof. S. Müller – Technical University Berlin
- 10.00 Homologation and Validation of Automated Driving Functions – It's all About an Efficient Methodology and Process!
C. Gnant – TÜV SÜD Auto Service GmbH; Dr. T. Düser – AVL Deutschland GmbH
- 10.30 Coffee Break

PARALLEL SESSION 4A

New Methods RDE; Chairman: Dr. O. Herrmann, DENSO Automotive Germany GmbH

- 11.00 New Approaches for Virtualized Diesel Powertrain System Development
B. van Moergastel, S. Visser, K. Norgel, Dr. O. Herrmann – DENSO Automotive Germany GmbH
- 11.30 Utilising Deep Neural Network Models to Calibrate in Engine Control Units
Dr. F. Mohd Azmin, Dr. J. Seabrook – Ricardo UK Ltd.
- 12.00 RDE Evaluation by Efficient Fleet Data Management and Advanced Analytics
S. Bauer, Prof. C. Beidl – Technical University Darmstadt; Dr. K. Laubis – AVL Deutschland GmbH; Dr. N. Keuth – AVL List GmbH
- 12.30 Integration of the Virtual Engine Calibration into the Real Development Environment – How Important is the Human Factor in the Change Process?
Prof. H. Ihme-Schramm, Prof. T. Netzel – Hamburg University of Applied Sciences; A. Schramm – Consultant
- 13.00 Lunch

PARALLEL SESSION 4B

New Challenges! ADAS & Connectivity; Chairman: Dr. W. Puntigam, AVL List GmbH

- 11.00 AI in Cockpit and Autonomous Driving
J. Langenwalter – NVIDIA GmbH
- 11.30 Suitability Analysis for Cloud-Based Vehicle Functions
F. Milani, M. Foell – Robert Bosch GmbH; Prof. C. Beidl – Technical University Darmstadt
- 12.00 Customer on Stage – A Holistic and User-Centered Development Process for Connected Powertrains
S. Barth, Dr. M. Fischer – Honda R&D Europe GmbH
- 12.30 Optimal System-Level Design of a Hybrid Electric Vehicle Powertrain Using Neural Network-Based Component Models and Particle Swarm Optimization
C. Gletter – Daimler AG; Prof. J. Kallo – Ulm University; Prof. T. Winsel – Kempten University of Applied Sciences
- 13.00 Lunch

PARALLEL SESSION 5A

New Methods – Different Challenges?!; Chairman: C. Christ, AVL List GmbH

- 14.30 Rationalization of Stepped Transmission Calibration
P. Danckers – Punch Powertrain NV; Dr. T. Ebner, B. Wultsch, R. Schantl – AVL List GmbH
- 15.00 Efficiency Investigation of Tractor Systems by “Powertrain-in-the-Loop” Test Methodology
W. Stark, C. Pieke – John Deere GmbH & Co. KG; Dr. C. Schyr – AVL Deutschland GmbH
- 15.30 Break

Final Keynotes; Chairman: C. Christ, AVL List GmbH

- 15.40 What’s Coming? – Technical Scenarios for the Decarbonisation of Road Traffic
Dr. S. Neugebauer – European Road Transport Research Advisory Council (ERTRAC), BMW AG
- 16.10 DENSO’s Development Approaches for Sustainable Mobility in Future Society
K. Uchiyama, Dr. O. Herrmann – DENSO Automotive Germany GmbH
- 16.40 Closing Remarks
Prof. C. Beidl – Technical University Darmstadt; R. Jeutter – AVL Deutschland GmbH
- 17.00 End of Conference

PARALLEL SESSION 5B

New Challenges! ADAS & Connectivity; Chairman: Prof. B. Schick – Kempten University of Applied Sciences

- 14.30 The Art of Cyber Security Orchestration
C. Pohl, Dr. F. Stumpf, Dr. T. Wollinger, Dr. M. Wolf – ESCRYPT GmbH
- 15.00 Parametrized End-to-End Scenario Generation Architecture for Autonomous Vehicles
H. Schneider, M. Nager – AVL List GmbH
- 15.30 Break

STUDENT SPONSORSHIP

There is the possibility for students to apply for sponsored places by Daimler, Denso, Valeo Siemens, VW und AVL, which are free of charge. Information on this topic is available online at www.avl.com/symposium-development-methodology.

Many thanks to our Sponsors!

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