

AVL International Simulation Conference 2019 - Agenda
Day 1

Tuesday, October 22
Room 1

08:30	Welcome Address H. List, Chairman and CEO, AVL List GmbH			
09:00	Tackling the Challenges of Modern Propulsion Systems with Simulation R. Wanker, Vice President, Advanced Simulation Technologies, AVL List GmbH			
09:30	The Future of Mobility A. Sodjan, Former Managing Director, NIO UK			
10:00	Coffee Break			
10:30	Autonomous Driving – Simulation and Real Proving S. Müller, Head of Department of Automotive Engineering, Technical University Berlin			
11:00	Virtual Development for Next Generation China VI Engine T. Lin, Director R & D Institute Guangdi Yuchai Machinery Co. Ltd.			
11:30	The Hydrogen Combustion Engine as the Most Effective CO₂-Reduction Technology Today A. Sousa, Chief Technology Officer, KEYOU GmbH			
12:00	Virtualization - The Key to Augmented Development W. Puntigam, Global Business Unit Manager, Integrated and Open Development Platform, AVL List GmbH			
12:30	Networking Lunch			
13:30	Exhibitor Presentations			
13:30	Room 1a Microsoft			Room 1b Magna
13:40	ATOS IT Solution and Services			Rescale
13:50	CPU 247			Altair Engineering
	Electrified Powertrains (Room 3)	ICE Performance and Emissions (Room 1A)	ICE Durability & NVH (Room 1B)	Virtual Vehicle Development (Room 4)
	System Level	Session Keynote	Session Keynote	Session Keynote
14:00	Optimal Supervisory Control Strategy for a Transmission-Mounted Electric Drive Hybrid Electric Vehicle T. Park, H. Lee, KATECH	Problem Solving Experiences in CFD, A Career Retrospective C. Arnold, Sage Physics, LLC	Virtual Testing Approach of a V6 Engine with Detailed DMF under High Dynamic Transient Speed-Load Profiles M. Ejakov, FORD Motor Company	Application of Model-based System Engineering for the Development of Pre-Integrated Vehicle Solutions A. Gallet Segarra, U. Schulmeister, M. Boumans, Robert Bosch GmbH
		Gasoline Combustion Engine	Strength and Durability	Controls & ADAS
14:20	Study on Engine Downsizing Using 48V-HEV Technology C. Chen, G. Zheng, S. Zhang, Chongqing Changan Automobile Co., LTD	Prediction of Engine-Out Soot based on the Simulation of Wall Film J. Brucker, W. Brack, B. Hussmann, BMW Group C. Hasse, Technical University Darmstadt	Crankshaft Dynamics on Vehicle and Test Bench: AVL Designer Simulation and Correlation with Experimental Data M. Mafra, General Motors	Validation of Highly Autonomous Cyber-Physical Systems using Model-Based Generated Test Suits F. Klück, H. Felbinger, L. Klampff, M. Nica, J. Tao, F. Wolawa, AVL List GmbH; M. Zimmermann, CD Laboratory TU Graz
14:40	Vehicle Performance Analysis of Extended-Range Electric Vehicle by AVL CRUISE™ and Simulink J. Li, Geely Auto	A Combined Inner-Nozzle & Spray 3D-CFD Workflow for the Holistic Design-Optimization of a High-Pressure Gasoline Injector using Genetic Algorithm R. Hellmann, P. Jochmann, K.G. Stapf, E. Schünemann, Robert Bosch GmbH; D. Theverin, Otto von Guericke University Magdeburg	Coupling OPTISTRUCT™ and AVL EXCITE™ for Crankshaft Optimization B. Henocq, Renault SA	CI/CD and Agile Engineering for Autonomous Vehicle Development M. Benedikt, Kompetenzzentrum - Das Virtuelle Fahrzeug Forschungsgesellschaft mbh; S. Balci, Volkswagen AG
15:00	Virtual System Integration for Maritime Applications on the Example of the Hybridization of a Platform Supply Vessel M. Schönbacher, R. Strasser, AVL List GmbH	The AVL FIRE™ Code for the Analysis of a Spark Ignition Engine under Syngas Fueling D. Piazzullo, M.Costa, M. Di Palma, M. Vujanovic, CNR Istituto Motori	Workflow and HowTo: Modal based Fatigue Analysis of a Crankshaft A. Werkhausen, W. Hübsch, W. Meindl, MAGNA Powertrain Engineering Center Steyr	Interference Tests of ITS-G5 Networks with Virtual-Drive Tests B. Altinel, M. Hein, Technical University of Ilmenau
15:20	Consumption and Efficiency Measurements of the KEYOU-Inside H2 Technology for Commercial Vehicles A. Wertz, KEYOU GmbH	Modelling and Simulation of a Rotary Engine Range Extender A. Pennycott, G. Vorraro, M. Turner, J. Turner, N. Bailey, University of Bath	HCF Analysis of a Motorcycle Engine's Hot Parts Based on Thermo-mechanical Coupling Approach T. Wang, S. Zeng, G. Wang, L. Tan, J. He, X. Liu, LONCIN Motor Co. Ltd.	A Necessary Convergence between Virtual and Physical Testing S. Barbier, Transpolis
15:40	Coffee Break			
	System Level	Gasoline Combustion Engine	Piston Group Analysis	Vehicle Dynamics
16:20	Dedicated Hybrid Powertrain (DHP) - Hybrid Concept based on a Holistic System Approach M. Diehl, J. Gindele, Magna Powertrain	Simulation of Oil Sloshing in the Crankcase T. Staehle, Groupe PSA	Piston Group Simulation: an Attempt to Bring More Predictivity M. Hay, Renault S.A.S.	Comparison on the Measured Data in Hills and Circuit in the Car Development H. Yuchi, Toyota Customizing& Development Co.,Ltd.
16:40	Predictive Modelling of the Fuel and Energy Costs for Operation of Category M3 Public Service Vehicles D. Hyden, Alexander Dennis Ltd.	Motorcycle Airbox Pressurization by Ram Air Effect D. Fosker, R. Baroczky, Triumph Designs Ltd.	Piston Analysis of a Small 2-Stroke Engine with AVL EXCITE™ A. Kimnek, S. Telsmeyer, Andreas Stihl AG & Co. KG	Virtual Steering Feeling Development P.Y. Jeong, J. Lee, Hyundai Motors Co., Ltd.
17:00	UAZ Vehicle Thermal Management System A. Egorov, LLC UAZ	Methodology for Knock Limit Evaluation from CFD Simulation G. Ferrand, ESTACA	A Simulation Method to Address the Cylinder Liner Vibrations and Cavitation S. Iflikhar, H. Herbst, F. Birgersson, Scania CV AB	Optimization of Vehicle Concepts regarding Derivate Specific Criteria J.A. Tschorn, C. Wetzel, T. Vietor, Bugatti Engineering GmbH
		Exhaust Gas Aftertreatment		
17:20	Advanced Thermal Management with a Latent Heat Storage in a Mild HEV C. Doppler, B. Rabl, G. B. Weiß, Kompetenzzentrum - Das virtuelle Fahrzeug Forschungsgesellschaft mbH, M. Ponchant, Siemens	PDE-based Boundary Control for Heavy Duty Diesel Aftertreatment with Distributed Observer Y. Gao, X. Men, D. Gong, Jilin University	Effect of the Cylinder Coated Bores on Piston Ring Tribology and Fuel Consumption with Use of AVL EXCITE™ Micro-contact Model E. Tomanik, F. Profito, São Paulo University	Vehicle Drivability Simulation Analysis Based on AVL VSM™ and AVL DRIVE™ J. Huang, Z. Jiang, Y. Tian, Chongqing Changan Automobile Co., LTD
17:40	End of Speeches			
18:15	Transfer 1 to Social Evening			
18:35	Transfer 2 to Social Evening			
19:00	Social Evening @Schlossbergrestaurant Graz			

Day 2

Wednesday, October 23
Room 1

08:30	Opening and Welcome to Day 2			
08:45	Passenger Car Powertrain Technology 2030: Diversity or Battery-Electric Dictatorship? G. Fraidl, Senior Vice President Powertrain Systems, Passenger Cars, AVL List GmbH			
09:15	Simulation Based Vehicle Development - Challenges and Solutions P. Schögl, Vice President Racing and Vehicle, Engineering and Technology, Powertrain Systems, AVL List GmbH			
09:45	Testing, Development and Calibration 2025 G. Vitale, Global Business Segment Manager, Integrated and Open Development Platform, AVL List GmbH			
10:15	Coffee Break			
	Electrified Powertrains (Room 3)	ICE Performance and Emissions (Room 1A)	ICE Durability & NVH (Room 1B)	Virtual Vehicle Development (Room 4)
	E-Drive	Diesel Combustion Engine	Powertrain NVH	System Level Integration
10:50	Electro Magnetic Iron Loss CAE with and without Applied Rotor Eccentricity H. Johannesson, Volvo Car Corporation	Large Eddy Simulations of Compositionally Unique International Diesel Blends N. Kurimoto, Denso Corporation	Heavy Duty Truck Rear Axle Whine Analysis and Test Corelation E. Özdemir, M.S. Tabak, Ford Otomotiv	Powertrain Calibration Virtual Test: Moving Off Vehicle D. O'Brien, Ford Motor Company
11:10	Development of Industrial Continuously Variable Electromechanical Drivetrain Systems based on Virtual Model Approach M. Miklauschitsch, M. Janic, SET Sustainable Energy Technologies, T. Parkyan, AVL List GmbH	Applied CFD for Fuel System Modeling: Needle Wobbling - What Effects are Expected? D. Konstanzer, Cummins Fuel Systems Sweden, Scania DIX	ePowertrain NVH Workflow including Shafts Dynamics in PSA Groupe M.B. Seck O. Davodet, Groupe PSA	Transmission Load Spectrum Generation by AVL CRUISE™ Joint Simulation with MATLAB/SIMULINK W. Ren, GETRAG Transmission Co.,Ltd.
11:30	State of the Art Development Methods for High Speed EV Drivelines A. Volk, AVL List GmbH	LES Modelling of Diesel ICE Combustion Using Tabulated Detailed Chemistry Approach O. Vitek, V. Dolecek, Technical University Prague	Simulation Matching with Real Live Measurements L. Meijers, Jekill and Hyde	Enhancement of a Semi-Physical Engine Model with a Crank-Angle Resolved Gas Exchange to Increase the Accuracy of the Model with Retention of Real Time Capability J. Wölkner, AVL Deutschland GmbH
	Fuel Cell & Battery			Virtual Water Management
11:50	2-D + 1-D PEM Fuel Cell Model for Fuel Cell System Simulations S. Gößling, M. Bahr, N. Nickig, ZBT GmbH	Experience of Simulation Turbochargers in Scientific Technical Center of KAMAZ PTC with the Use of AVL Software Products V. Lushcheko, KAMAZ	Acoustic Optimization Design Analysis of Engine Oil Pan based on AVL EXCITE™ C. Zhang, Chery Automobile Co., LTD	Oil Leakage Simulation with PreonLab Using the SPH Method for Improving the Safety of Automotive Engines F. Ravet, Renault S.A.S.
12:10	Global Thermal Model Development for Fuel Cell Thermal Management Z. Liu, H. Liu, Z. Shu, Q. Chen, Sinocat Environmental Technology Co.,Ltd.	Challenges in the Diesel Engine Cause-Effect Chain Simulation S. Gierth, M. Kircher, F. Ferraro, C. Hasse, Technical University of Darmstadt; M. Blume, P. Schwarz, R. Skoda, Ruhr University Bochum; R.Frieder, AVL Deutschland GmbH, München; P. Priesching, AVL List GmbH, Graz	Validation of NVH Gearbox Simulations in AVL EXCITE™ with Measurements D. Werner, B. Graf, S. Falkenberg, J. Neher, B. Wender, University of Applied Sciences of Ulm.	Virtual Rain Lab - Tracking of Water in Complex Enclosures M. Ihmsen, Fifty2 Technology GmbH
12:30	Networking Lunch			
	Fuel Cell & Battery	Dual-Fuel Combustion	Powertrain NVH	Virtual Water Management
13:40	Modeling Auxiliary Load with PEM Fuel Cell G. Radica, N. Matulić, F. Barbir, University of Split	Simulation of Ethanol-Diesel Diffusive Combustion in Heavy-Duty Engines N. Giramondi, A.C. Ertandsson, M. Mihaescu, KTH Royal Institute of Technology; A. Jäger, SCANIA CV AB	Radiated Noise of I4 Petrol Engine in Test Cell Installation, using CAE Generated versus Measured Gas Pressure Loads H. Johannesson, Volvo Car Corporation	CFD Simulation of the Watermanagement of a Vehicle under Realistic Driving Conditions D. Bäder, Audi AG
14:00	Experimental Investigations and 3D-CFD Modeling of Anisotropic Mass Transfer Characteristics of Diffusion Media for Polymer Electrolyte Membrane Fuel Cells S. Martin, J. Roes, A. Heinzel, University of Duisburg-Essen	Combustion Simulation of a Dual Fuel Marine Engine using Detailed Reaction Mechanism with AVL TABKIN™ S. Andree, M. Theile, J. Nocke, K. Schiefel, B. Henke, B. Buchholz, E. Hassel, University of Rostock	Power Unit Vibration Simulation with AVL EXCITE™ N. Sun, Q. Ma, L. Chen, H. Wang, G. Chen, Weichai Power Co., Ltd.	Wading - Evaluation of SPH-based simulations versus traditional Finite Volume CFD T. Virdung, J. Idoffsson, Volvo Car Group
14:20	Advanced Continuum Li-Ion Battery Modelling Framework T. Katrašnik, I. Mele, K. Zelič, University of Ljubljana	Modeling Dual Fuel Combustion using an Extended Coherent Flame Model and Detailed Chemistry J. Frühhaber, S. Schuh, T. Lauer, F. Winter, Technical University of Vienna	Bearing Analysis	Vehicle Aerodynamics
			EHD Analysis and Consideration of Seizure Index for Engine Bearing using AVL EXCITE™ Power Unit Y. Kajiki, H. Takata, Y. Kurabe, K. Ashihara, Taiho Kogyo co., Ltd.	On Computational Car Aerodynamics by Means of the AVL-PANS Methodology S. Jakirlic, L. Kutej, C. Tropea, TU Darmstadt
	Virtual Vehicle Development			
	Model based Development	Analysis of Local Heat Transfer in Combustion Chamber and Injector Nozzle of Perspective Dual-Fuel Gas Engine A.A. Zelenicov, R.Z. Kavtaradze, D.O. Ornishchenko, Bauman Moscow State Technical University; A. Kozlov, FSUE NAMI	Ultrasonic Oil Film Thickness Measurement and EHD Correlation E. Özdemir, Ford Otomotiv	Research in Flow Control Towards an Adaptive Vehicle Aerodynamics. Open Loop and an Outlook on Machine Learning Integration G. Minelli, S. Krajnović, Chalmers University of Technology
15:00	Development of Efficient Model Implementation Methodology in Testbed using Model.CONNECT™/Testbed.CONNECT™ T. Taira, Toyota Motor Corporation	Quenching		
		Expanding the Quenching Power: Combining MAGMA Casting Simulation with AVL FIRE™ M to Create New Applications J. Jan, S. Swisher, FORD Motor Company	The Influence Study and Optimization of Design Factors on the Engine Dynamic Components Friction F. Wang, S. Lianjun, C. Tao, L. Yuntao, L. Jun, Geely Auto	
15:20	Coffee Break			
	Virtual Vehicle Development	ICE Performance and Emissions	ICE Durability & NVH	
	Model based Development	Natural Gas Combustion	Bearing Analysis	
15:40	Artificial Intelligence Based Solutions for Development and Calibration in a Virtual Development Environment E. Lappano, A. Ravi, H. Akimatsu, AVL List GmbH	Evaluation of Ignition Modeling with AVL FIRE™ S. Narasimhamurthy, Prometheus Applied Technologies	Tribological Behaviour of Sliding Bearings in Slow Running Planetary Gears J. Marheineke, G. Jacobs, F. König, C. Sous, RWTH Aachen University	
16:00	An Advanced System Level Modelling Framework for Real-Time Simulation of SI Engines T. Katrašnik, University of Ljubljana	Simulation of Knock Onset in the Heavy-Duty Gas Engine A. Kozlov, N. Zuev, A. Terenchenko, I. Gattarow, FSUE NAMI	Analysis of Crankshaft Journal Bearings during Starting D. Sander, H. Altmair, C. Krauder, Kompetenzzentrum - Das Virtuelle Fahrzeug Forschungsgesellschaft mbh	
16:20	Transient Simulation of a Reversible Heat Pump Cycle for Automotive Applications J. Schulz, C. Schulte, I. Frohböse, TLK Thermo GmbH	Assessment of Solver Setup, Mesh Quality and Time-Step for Simulation of Auto-Ignition and Flame Propagation within a Homogeneous Pre-Mixed Variable Volume Combustion Reactor Using 3D-CFD and Detailed Chemical Kinetics J. Judith, S. Holzberger, M. Kettner, S. Bernhardt, T. Koch, HS Karlsruhe	Investigations of the ICE Friction Power Losses Using a Hybrid Analysis Methodology - Combination of Predictive Journal Bearing Simulation and Measurements C. Krauder, Kompetenzzentrum - Das Virtuelle Fahrzeug Forschungsgesellschaft mbh	
16:40	End of Speeches			
17:00	Best Paper Award and Closing			