AVL International Simulation Conference 2019 - Preliminary 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. Sodian, 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 Guangxi Yuchai Machinery Co. Ltd.			
11:30	**The Hydrogen Combustion Engine as the Most Effective CO_2-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**			
	Room 1a		**Room 1b**	
13:30	**Microsoft**		**Magna**	
13:40	**ATOS IT Solution and Services**		**Rescale**	
13:50	**CPU 24/7**		**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, BMW	**Crankshaft Dynamics on Vehicle and Test Bench: AVL Designer Simulation and Correlation with Experimental Data** M. Mafrica, General Motors	**Validation of Highly Autonomous Cyber-Physical Systems using Model-Based Generated Test Suits** F. Klück, H. Felbinger, L. Klampfl, M. Nica, J. Tao, F. Wotawa, 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. Thévenin, 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 Crancshaft** 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. Werz, 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 Hils 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, J. Bardoczy, Triumph Designs Ltd.	**Piston Analysis of a Small 2-Stroke Engine with AVL EXCITE™** A. Klimmek, S. Telsemeyer, 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. Iftikhar, 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. Schöggl, 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 Compositonally 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. Miklautschitsch, M. Janic, SET Sustainable Energy Technologies; T. Parikyan, 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. Wölken, 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.Fiereder, 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. Falkenberger, 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. Erlandsson, 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 Watermanagment 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. Schleef, 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
			Bearing Analysis	**Vehicle Aerodynamics**
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	**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			
14:40	**Model based Development** **AVL CRUISE M™ based Engine Virtual Calibration Model Buiding and Application** X. Lv, J. Liu, Weichai Power Co., Ltd.	**Analysis of Local Heat Transfer in Combustion Chamber and Injector Nozzle of Perspective Dual-Fuel Gas Engine** A.A. Zelentcov, R.Z. Kavtaradze, D.O. Onishchenko, 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
		Quenching		
15:00	**Development of Efficient Model Implementation Methodology in Testbed using Model.CONNECT™/Testbed.CONNECT™** T. Taira, Toyota Motor Corporation	**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. Gattarov, FSUE NAMI	**Analysis of Crankshaft Journal Bearings during Starting** D. Sander, H. Allmaier, C. Knauder, Kompetenzzentrum - Das Virtuelle Fahrzeug Forschungsgesellschaft mbh	
16:20	**Transient Simulation of a Reversible Heat Pump Cycle for Automotive Applications** J. Schulz, C. Schulze, 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. Knauder, Kompetenzzentrum - Das Virtuelle Fahrzeug Forschungsgesellschaft mbh	
16:40	**End of Speeches**			
17:00	**Best Paper Award and Closing**			