




2017 North American Simulation Conference

DAY 1

Tuesday, September 19, 2017

AGENDA AT A GLANCE

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| 8:00 am | Registration & Coffee | |
| 8:30 am | Welcome Address | |
| 8:45 am | Virtualization Drives Powertrain Simulation Technologies <i>Dr. Gothard Rainer, VP Advanced Simulation Technologies, AVL</i> |  |
| 9:15 am | Engine Development Driven by Simulation at John Deere <i>Paul Wynthein, Head of Design Analysis, John Deere</i> |  |
| 9:45 am | Coffee Break | |
| 10:00 am | Interconnection as Key to Digital Transformation <i>Christian Mayr, AVL</i> |  |
| 10:30 am | Overcoming Complexity in Powertrain Engineering <i>Paul Whitaker, AVL</i> |  |
| 11:00 am | Coffee Break | |

Grand Oaks I

Grand Oaks II

Grand Oaks III

| | STRENGTH & DURABILITY | SYSTEM SIMULATION | CFD: IC ENGINE MODELING |
|----------|---|--|--|
| 11:30 am | Validation of Crankshaft Bending Dynamics <i>Martin Hamper, Toyota Motor NA Inc.</i> | Integrated & Open Development Platform <i>Christian Mayr, AVL</i> | AVL TABKIN™ - Maximizing the Efficiency of Detailed Chemistry Simulation <i>Casper Meijer, AVL Dacolt</i> |
| 11:50 am | Recent Application of AVL EXCITE™ at Cummins <i>Jiawei (Derek) Liu, Cummins Inc.</i> | Driving Simulation with IODP Toolchain at HONDA <i>Christian Mayr, AVL</i> | Recent Application of AVL TABKIN™ at General Motors <i>Seunghwan Keum, General Motors</i> |
| 12:10 pm | Equivalent Modeling of Torsional Vibration Dampers in Frequency and Time Domain <i>Oliver Knaus, AVL</i> | Performing Driveability Trade-offs for Turbocharged Engines <i>Andrew Shabashevich, AVL</i> | Combustion Analysis Solving Detailed Reaction Chemistry <i>Maik Suffa, AVL</i> |

Lunch Break

| | BEARING AND PISTON ANALYSIS | SYSTEM SIMULATION | CFD: IC ENGINE MODELING |
|---------|---|--|---|
| 1:30 pm | Using AVL EXCITE™ Engine Dynamics and Bearing EHD for Engine Design <i>Misha Ejakov, Ford Motor Company</i> | Realtime and System Simulation of Large Engines and Marine Applications <i>Harshit Couthino, AVL</i> | New Learning in Galleried Cooled Piston Simulation <i>Cliff Arnold, Sage Physics</i> |
| 1:50 pm | Local Deformation of Hollow Crankshafts under Transient Conditions and their Effect <i>Brian McCaskey, AVL</i> | AVL CRUISE M™ - Detailed and Simplified VTMS Model for Office and HiL <i>Andrej Kodrin, AVL</i> | AVL Injector Wetting and its Impact on Emission Formation <i>Dr. David Greif, AVL</i> |
| 2:10 pm | New Thermal Model for AVL EXCITE™ - Elasto Hydro Dynamic (EHD+T) <i>Brett Sheets, AVL</i> | VTMS Customer Presentation <i>David Colavincenzo, Bendix</i> | In-Cylinder CNG, Diesel Pilot Ignited, Combustion Simulation <i>Venkatesh Venkadasamy, AVL</i> |
| 2:30 pm | Piston TMF Analysis with Thermal Boundary from AVL EXCITE™ <i>Oliver Knaus, AVL</i> | Development of Predictive Energy Management, AVL DRIVE™ / ADAS Functions <i>Thomas Mueller-Werth and Bill Rotramel, AVL</i> | AVL FIRE™ M for Thermo Load Analysis <i>Maik Suffa, AVL</i> |

Coffee Break

| | NEWS AND OUTLOOK | SYSTEM SIMULATION | CFD: MULTIPHASE |
|---------|---|--|--|
| 3:00 pm | AVL EXCITE™ PowerUnit v2017 - Integrated Valve Train <i>Brett Sheets, AVL</i> | Development of Predictive Energy Management, AVL DRIVE™ / ADAS Functions <i>Fred Jacquelin and Bill Rotramel, AVL</i> | Simulation of Low Pressure Doser Injector Spray <i>Karthik Ramisetty, Cummins, Inc.</i> |
| 3:20 pm | 3D Piston Ring Capabilities in AVL EXCITE™ Piston&Rings v2017 <i>Oliver Knaus, AVL</i> | AVL's Model Based Calibration - a Complete Process Supporting Toolchain <i>Franz Dorfer and Nilufar Damji, AVL</i> | Quenching Analysis using AVL FIRE™ / FIRE™ M <i>Dr. David Greif, AVL</i> |
| 3:40 pm | AVL EXCITE™ Outlook <i>Oliver Knaus, AVL</i> | Capabilities of the Virtual Test Bed <i>Franz Dorfer and Nilufar Damji, AVL</i> | AVL FIRE™ / FIRE™ M Outlook <i>Dr. David Greif, AVL</i> |

Evening Social event at JD Racing Indoor Karting and Expo


4:00 pm Join us for food, drinks, electric kart racing, virtual testbed demonstrations, real-time driving simulator, and experience AVL DRIVE for ADAS during ride and drives.
44225 W Twelve Mile Road, Novi, MI 48377



DAY 2

Wednesday, September 20, 2017

AGENDA AT A GLANCE

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| 8:00 am | Registration & Coffee | |
| 8:30 am | Meshless CFD for Liquid Dominated Flow – Introducing PreonLab | Dr. David Greif, AVL  |
| 9:00 am | Paper Presentations Highlights from the International Simulation Conference in Graz | Maik Suffa, Oliver Knaus and Andrej Kodrin, AVL |
| 10:00 am | Coffee Break | |

Grand Oaks I

ELECTRIFICATION

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| 10:20 am | E-Machine Thermal Analysis <i>Maik Suffa, AVL</i> |
| 10:40 am | E-Machine Acoustics - Experience in Accurate Simulation - Measurement Comparison <i>Oliver Knaus, AVL</i> |
| 11:00 am | Modeling a Full Electric Vehicle using AVL CRUISE™ and CRUISE™ M <i>Andrej Kodrin, AVL</i> |
| 11:20 am | Simulation of Batteries and Fuel Cells <i>Shanmugasundaram Chandrakesan, AVL</i> |
| 11:40 am | CAE Based Development of Fuel Cell Systems <i>Ken Kernyo, AVL</i> |

Grand Oaks II

EXHAUST GAS AFTERTREATMENT

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|----------|--|---|
| 10:20 am | SCR CFD Correlation Experiences with FTIR Data Using Advanced Models <i>Bishwadipa Das Adhikary, John Deere</i> |  |
| 10:40 am | Simulating Aftertreatment systems using AVL BOOST™ <i>Siddarth Sitamraju, Johnson Matthey</i> |  |
| 11:00 am | AVL BOOST™ & FIRE™ for SCR Development <i>Maik Suffa, AVL</i> | |
| 11:20 am | AVL CRUISE™ M Aftertreatment Modeling <i>Maik Suffa, AVL</i> | |
| 11:40 am | Experiments Supporting the Development of SCR Systems <i>Maik Suffa, AVL</i> | |

12:00 pm Lunch Break

TRANSMISSION AND TURBOCHARGER ANALYSIS

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| 1:00 pm | Gear Whine Noise Investigation of a Bus Rear Axle with AVL EXCITE™ <i>Oliver Knaus, AVL</i> |
| 1:20 pm | Durability Analysis of Transmission Components <i>Oliver Knaus, AVL</i> |
| 1:40 pm | Flex Gear and Planetary Gear Set Modeling <i>Brian McCaskey, AVL</i> |
| 2:00 pm | Turbocharger Dynamic Simulation <i>Brett Sheets, AVL</i> |

SYSTEM MODELING

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| 1:00 pm | Gear Ratio Optimization Workflow for a Hybrid Transmission with AVL CRUISE™ M and Design Explorer <i>Andrej Kodrin, AVL</i> |
| 1:20 pm | AVL CRUISE™ M Engine Automated Model Calibration - Hints and Tips <i>Andrej Kodrin, AVL</i> |
| 1:40 pm | Integrated Controls Software MiL Testing on PC using Virtual ECU's <i>Ambarish Desai, AVL</i> |
| 2:00 pm | AVL CRUISE™ Outlook <i>Andrej Kodrin, AVL</i> |

2:20 pm Networking with AVL Experts and Coffee

FOR FURTHER INFORMATION PLEASE CONTACT:

AVL Advanced Simulation Technologies, 47519 Halyard Drive, Plymouth, Michigan, USA
T: +1 734 414 9600, Email: avlpowertrainsimulation@avl.com, www.avl.com/simulation