

SAE 2010 Commercial Vehicle Engineering Congress Technical Session Schedule

As of 10/11/2010 07:40 pm

Tuesday, October 5

Global Executive Leadership Panel

Session Code: CV903

Room 1 & 2

Session Time: 10:00 a.m.

How Engineering Plays a Role and Impacts Military and Defense Lines of Business

This panel will target CEOs or Presidents from Navistar Defense, Oshkosh Defense, BAE Systems, and possibly AM General. Implications of ITAR may also be included in this discussion. We will carry on the tradition of having one of the current Executive Co-Chairs for the event serve as the panel moderator.

Organizers - Patrick Charbonneau, Navistar Inc.

Moderators - Donald Verhoff, Oshkosh Corporation

Panelists - Michael Bolon, General Dynamics Corp.; R. Andrew Hove, Oshkosh Corporation; Archie Massicotte, International Truck & Engine Corp.; Gary Slack, BAE Systems;

Planned by ComVec Executive Council / EMB Land and Sea Group

Tuesday, October 5

55th Annual L. Ray Buckendale Lecture

Session Code: CV801

Room 1 & 2

Session Time: 1:30 p.m.

Organizers - Vern Caron, ARVINMITOR; Nicole Iorfido, SAE International

Time	Paper No.	Title
1:30 p.m.	2010-01-2053	Merge Ahead: Integrating Heavy Duty Vehicle Networks with Wide Area Network Services Mark P. Zachos, DG Technologies

Tuesday, October 5

Military Business Needs from Commercial Vehicle Sector Executive Panel

Session Code: CV902

Room 1 & 2

Session Time: 4:45 p.m.

The focus on the panel is identify and discuss what is needed to better align the needs of the military branches with ground based vehicles and mobile equipment with the design and development activities of the commercial vehicle industry. The panelist will each give an overview of their vehicle/equipment requirements and provide direction to the Commercial Vehicle sector on areas where the sector should focus to better support their expectation and design requirements.

Organizers - Gregory Fredericksen, Oshkosh Corp.; Richard E. Kleine, Cummins Inc.; Mark L. Pedrazzi, BAE Systems; Donald Verhoff, Oshkosh Corporation; Graham Weller, Ricardo Inc.

Moderators - Thomas Mathes SR, US Army TARDEC

Panelists - Ruben Garza, US Marine Corps; Dave Hansen, Joint Project Office; Grant Hayden, National Guard Bureau; Michael Micucci, USMC; Paul F. Skalny, US Army Research & Development;

Tuesday, October 5

Thermal Underhood Incidents

Session Code: CV603

Room 11

Session Time: 7:30 a.m.

Issue: A significant increase in underhood thermal events is being reported by trucking fleets either in a static condition or from a vehicle involved in an accident. This increase has shown in later model heavy duty vehicles from the last 4-5 model years.

- 1) Basics
 - a. Things to look at wiring, hotel loads, repairs, types of wiring used, connections and connectors, corrosion, drip loops,
 - b. Construction
- 2) Findings
- 3) Stories from the front lines
- 4) Potential fixes and mitigation

Organizers - Paul N. Abelson, Land Line Magazine; James LeClaire, Transportation Operations Professionals

Moderators - Paul N. Abelson, Land Line Magazine

Panelists - Greg Cybor, Vitran Express Inc.; James LeClaire, Transportation Operations Professionals; Bruce Purkey, Purkey's Electrical Consulting Inc.; Ronald L. Szapacs, Air Products & Chemicals Inc.;

Planned by CV Maintenance Group / Commercial Vehicle Activity

Tuesday, October 5

Tires, Wheels, & Materials Inside Tires

Session Code: CV609

Room 11

Session Time: 1:00 p.m.

This session will address the current and future trends regarding:

- Tire Inflation: To Inflated or Not to Inflate: Is that even an option?
- Wheel trends: Aluminum vs steel vs alloy
- Reduction in the use of lead balancing weights
- Balancing Materials Inside Tires
- Concentric tire bead seating
- Wheel Installation

Organizers - Al E. Cohn, Pressure Systems International Inc.

Moderators - Al E. Cohn, Pressure Systems International Inc.

Panelists - Kevin Rohlwing, Tire Industry Association; Asa C. Sharp; Dave Walters, Alcoa Wheel Products;

Planned by CV Maintenance Group / Commercial Vehicle Activity

Tuesday, October 5

Sustainability

Session Code: CV706

Room 11

Session Time: 2:45 p.m.

In its most basic definition, sustainability means "meeting the needs of the present without compromising the ability of future generations to meet their own needs." Manufacturers are going green, not only to reduce regulatory costs, but also to attract the next generation of talent for their workforces. This session will provide insight into how companies can achieve their targets with initiatives such as sustainable fuels (for example hydrogen), bio-materials, and lifecycle planning.

Organizers - Radhey Kushwaha, Univ. of Saskatchewan; Richard Miller, NIOSH; Satya Panigrahi, Univ. of Saskatchewan

Time	Paper No.	Title
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2:45 p.m.	2010-01-2025	Implementation of Lean Manufacturing to Improve Competitiveness <i>Abhijeet Pingale, Deepak Vani, DivgiWarner Pvt Ltd.</i>
3:15 p.m.	2010-01-2029	Characterization of Palm Fiber for Development of Biocomposites Material for Automotive Industries <i>Satya Panigrahi, Univ. of Saskatchewan</i>
3:45 p.m.	2010-01-2026	Impact of Fiber Loading on Injection Molding Processing Parameter and Properties of Biocomposite <i>Satya Panigrahi, Univ. of Saskatchewan</i>
4:15 p.m.	2010-01-2028	The Effect of Fiber Loading and Chemical Treatment on Mechanical and Thermal Properties of Jute Biocomposites <i>Satya Panigrahi, Univ. of Saskatchewan</i>
	2010-01-2024	Effect of Drying Methods on the Physical and Structural Changes in Oil-Seed Flax Fiber (Written Only -- No Oral Presentation) <i>Anand C. Tripathy</i>
	2010-01-2027	Mechanical Performance of Recycled Thermoplastic and Flax Fiber Based Composite (Written Only -- No Oral Presentation) <i>Satya Panigrahi, Univ. of Saskatchewan</i>
	2010-01-2030	Oil Palm Fiber Biocomposite for Automotive Industries (Written Only -- No Oral Presentation) <i>Satya Panigrahi, Univ. of Saskatchewan</i>

The papers in this session are available in a single publication, V119-2, and also individually.
Planned by Total Vehicle Group / Commercial Vehicle Activity

Tuesday, October 5

Truck Freight Efficiency Challenges

Session Code: CV712

Room 12

Session Time: 7:30 a.m.

The U.S. trucking industry is the driving force behind the U.S. economy with more than 500,000 interstate motor carriers employing nearly 9 million people to move about 11 billion tons of freight annually. Trucks play a critical role in our lives and our economy and move nearly everything we consume or use, delivering 70 percent of all freight tonnage or that 80 percent of U.S. communities receive their goods exclusively by truck. As our needs increase, so too will the miles trucks travel.

Organizers - Richard Wood, SOLUS-Solutions and Technologies, LLC

Chairpersons - Richard Wood, SOLUS-Solutions and Technologies, LLC

Moderators - Richard Wood, SOLUS-Solutions and Technologies, LLC

Panelists - Marty Fletcher, Aerofficient; Michael D. Roeth, NACFE; Charles Salter, Consultant;

Tuesday, October 5

Sustainability (Panel)

Session Code: CV711

Room 12

Session Time: 1:00 p.m.

In its most basic definition, sustainability means "meeting the needs of the present without compromising the ability of future generations to meet their own needs." Manufacturers are going green, not only to reduce regulatory costs, but also to attract the next generation of talent for their workforces. This session will provide insight into how companies can achieve their targets with initiatives such as sustainable fuels (for example hydrogen), bio-materials, and lifecycle planning.

Organizers - Richard Miller, NIOSH

Time	Paper No.	Title
1:00 p.m.	ORAL ONLY	HEV Architecture Optimization Through Partnerships Scott Harrison, Azure Dynamics Corp.
1:30 p.m.	2010-01-2043	Current Situation of Lignocellulosic Ethanol Production in Western Canada Satya Panigrahi, Univ. of Saskatchewan
2:00 p.m.	ORAL ONLY	Integrated Product Development Approach: Are We There? Amrut Patki; Mahesh Raul
2:30 p.m.	ORAL ONLY	Strategic Review of Sustainability Amrut Patki

Planned by Total Vehicle Group / Commercial Vehicle Activity

Tuesday, October 5

Aerodynamic and Fuel Economy Assessment Methods and Techniques

Session Code: CV710

Room 12

Session Time: 2:45 p.m.

It is projected that over the next decade the freight movement needs of the global economy will increase dramatically placing a growing demand on the commercial vehicle industry. However the current economic uncertainty greatly limits the options available to individual companies. Several government and private sector organizations have launched initiatives addressing the need for new freight movement solutions. The panel will discuss the programs underway to increase freight efficiency.

Organizers - Richard Wood, SOLUS-Solutions and Technologies, LLC; Richard Current, NIOSH; Teri H. Elliot, Transportation Research Center Inc.

Chairpersons - Richard Wood, SOLUS-Solutions and Technologies, LLC

Moderators - Richard Wood, SOLUS-Solutions and Technologies, LLC

Time	Paper No.	Title
2:45 p.m.	2010-01-2038	In Fleet Testing of Fuel Saving Measures Sumon Kumar Sinha, Sinhatech; Sujata Sinha PhD, Rust College
3:15 p.m.	2010-01-2040	Aerodynamic Study of a Production Tractor Trailer Combination using Simulation and Wind Tunnel Methods Mathew Heinecke, Volvo Trucks North America; Jeremy Beedy, Kevin Horrigan, Exa Corporation; Raja Sengupta, Volvo Trucks North America
3:45 p.m.	2010-01-2039	A Computer Simulation of the Effect of Wind on Heavy Truck Fuel Consumption Testing Stargel Doane, Drew Landman, Old Dominion University; Richard M. Wood, Solus-Solutions and Technologies
4:15 p.m.	ORAL ONLY	A Practical Wind-Averaged Fuel Consumption Assessment Method Richard M. Wood, Solus-Solutions and Technologies
	2010-01-2041	Benchmarking Vehicle Fuel Economy with mpk and kpg Calculation (Written Only -- No Oral Presentation) Bernard J. Simon, Innovative Power Systems, LLC

Planned by Total Vehicle Group / Commercial Vehicle Activity

Tuesday, October 5

National Research Council Report: Assessment of Fuel Economy Technologies for Medium and Heavy Duty Vehicles

Session Code: CV802

Room 13

Session Time: 1:00 p.m.

Recently Congress required the Department of Transportation to establish fuel economy standards for medium- and heavy-duty vehicles, which use about 26 percent of the transportation fuel consumed in the U.S. Dr. Brown chaired this committee, and will present the results of the Committee's efforts and its recommendations.

Panelists - Andrew Brown, Delphi Corp.;

Tuesday, October 5

Advances in Fluid Power Research

Session Code: CV502

Room 13

Session Time: 2:45 p.m.

This session focuses on advancements in fluid power technology related to commercial vehicles. Industrial and academic research presentations cover new system topologies, control methods, modeling and simulation techniques for on and off road vehicles. Hydraulic hybrids, articulated lifts, wheel loaders, and pump/motors are scheduled in this session.

Organizers - David Herbert, Sun Hydraulics Corp.; John H. Lumkes, Purdue Univ.

Time	Paper No.	Title
2:45 p.m.	2010-01-2006	Modeling and Optimization of the Control Strategy for the Hydraulic System of an Articulated Boom Lift <i>Andrea Vacca, Univ. of Parma; Giovanni Campanella, Purdue University</i>
3:15 p.m.	2010-01-2008	Preliminary Numerical Analysis of Valve Fatigue in a Checkball Pump for Driveline Applications <i>Yang Yang, Center For Advanced Vehicle Design, Western Michigan Univ; Benjamin Morris, Eaton Corporation; William Liou, Center For Advanced Vehicle Design, Western Michigan Univ</i>
3:45 p.m.	2010-01-2010	A Power-Split Hybrid Hydraulic Vehicle Transmission Modeling and Comparative Analysis <i>Josko Petric</i>

Planned by Fluid Power and Hydraulics Group / Commercial Vehicle Activity

Tuesday, October 5

Electrification of the Commercial Vehicle, New Techniques for Efficiency and Reliability

Session Code: CV404

Room 14

Session Time: 7:30 a.m.

CV404 covers electrical and electronic technologies with broad application and interest to the OEM industry.

Organizers - James C. Miller, Deere & Company

Time	Paper No.	Title
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7:30 a.m.	2010-01-1989	Systems to Silicon: A Complete System Approach to Power Semiconductor Selection for Environmentally Friendly Vehicles <i>Charles Sullivan, Robert J. Campbell, Tanto Sugiarto, Delphi Corp.</i>
8:00 a.m.	2010-01-1990	LED Illumination for Commercial Vehicles <i>Lawrence M. Rice, Osram Sylvania</i>
8:30 a.m.	2010-01-1991	Low Cost Engine Monitoring System for Commercial Vehicles <i>Ajay Ramlal Dandge, Tata Technologies Ltd</i>

Planned by Electrical and Electronics Group / Commercial Vehicle Activity

Tuesday, October 5

Government / Industry Brake Research, Rule Making and Technologies - Part 1. Impact of Regulations on Commercial Vehicle Components and Systems. (Part 1 of 2)

Session Code: CV102

Room 14

Session Time: 1:00 p.m.

During 2009, previous proposed regulation changes have been finalized and we enter the new decade with activities to meet these new requirements. Likewise, NHTSA, FMCSA, states and other agencies are in the process of updating their strategic plans to further enhance highway safety. This session will provide an update on the current implementation activities as well as what looks to be a very comprehensive view of where regulations may take technology.

Organizers - Mark Iasiello, Heavy Duty Manufacturers Association; Paul M. Johnston, Meritor WABCO Vehicle Control Systems; Randall Petresh, Haldex Commercial Vehicle Systems; Alrik L. Svenson, National Hwy Traffic Safety Admin; James E. Szudy, Bendix Commercial Vehicle Systems LLC

Moderators - Paul M. Johnston, Meritor WABCO Vehicle Control Systems

Panelists - Deborah M. Freund, US Dept. of Transportation; Stephen Keppler, Commercial Vehicle Safety Alliance; Anthony Moore, Daimler Trucks North America LLC; Sarah Olson, Federal-Mogul Friction Products, Ltd.;

Planned by Braking and Steering Group / Commercial Vehicle Activity

Tuesday, October 5

Government / Industry Brake Research, Rule Making and Technologies - Part 2. New Product and System Technology on Future Regulations and Vehicles..

Session Code: CV102

Room 14

Session Time: 2:45 p.m.

Commercial vehicle manufacturers along with the tier 1 suppliers are not necessarily waiting for regulation activities to drive product and system technologies. The product and system providers continue to evolve current and new technologies to offer improved performance and payback to the fleet customers along with enhancing highway safety. This session will provide a look into what technologies are here now or just around the corner that will also impact regulatory activities.

Organizers - Mark Iasiello, Heavy Duty Manufacturers Association; Paul M. Johnston, Meritor WABCO Vehicle Control Systems; Randall Petresh, Haldex Commercial Vehicle Systems; Alrik L. Svenson, National Hwy Traffic Safety Admin; James E. Szudy, Bendix Commercial Vehicle Systems LLC

Moderators - Paul M. Johnston, Meritor WABCO Vehicle Control Systems

Panelists - Richard John Conklin, Bendix; Jim Crawley, Haldex Brake Products; Jonathan Mueller, FMCSA; Alrik L. Svenson, National Hwy Traffic Safety Admin; John Woodrooffe, University of Michigan Truck Research Institute;

Planned by Braking and Steering Group / Commercial Vehicle Activity

Tuesday, October 5

Hybrid Vehicle Integration & Optimization (Part I of 2)

Session Code: CV310

7:30 a.m.

Room 22

Session Time:

This session will focus on integration of a hybrid transmission in to a vehicle whether from simulation which allows ability to predict improved vehicle performance or actual applications with data based on vehicle duty cycles to show improved performance versus current production transmission options.

Organizers - Richard W. Job, Richard W Job & Associates; Gary D. McConeghey, Sauer-Danfoss; Uwe Zink, Corning Incorporated

Time	Paper No.	Title
7:30 a.m.	2010-01-1933	Medium-Duty Plug-in Hybrid Electric Vehicle for Utility Fleets Helene Cornils, Eaton Corp.
8:00 a.m.	2010-01-1931	Modeling the Hybridization of a Class 8 Line-Haul Truck Dominik Karbowski, Antoine Delorme, Aymeric Rousseau, Argonne National Laboratory
8:30 a.m.	2010-01-1930 ORAL ONLY	Hydraulic Hybrid Hydro-Mechanical IVT for Commercial Vehicles and Construction Equipment Lawrence Folsom, Folsom Technologies International

Planned by Drivetrain, Powertrain and Transmissions Group / Commercial Vehicle Activity

Tuesday, October 5

Hybrid Vehicle Integration & Optimization (Part 2 of 2)

Session Code: CV310

Room 22

Session Time: 1:00 p.m.

This session will focus on integration of a hybrid transmission in to a vehicle whether from simulation which allows ability to predict improved vehicle performance or actual applications with data based on vehicle duty cycles to show improved performance versus current production transmission options.

Organizers - Richard W. Job, Richard W Job & Associates; Gary D. McConeghey, Sauer-Danfoss; Uwe Zink, Corning Incorporated

Time	Paper No.	Title
1:00 p.m.	ORAL ONLY	Hybrid Powertrain Control for a Class of Heavy Duty Tactical Vehicles Ron Zhang, Oshkosh Truck Corp.
1:30 p.m.	ORAL ONLY	Energy Storage Challenges in Severe Duty Vehicle Applications Mike Bolton, Oshkosh Corporation
	2010-01-1932	Feasibility Study of a Heavy-duty Tractor - Motorized Semi-trailer Hybrid Electric Combination (Written Only -- No Oral Presentation) Marius-Dorin Surcel, Jan Michaelsen, FPIInnovations

Planned by Drivetrain, Powertrain and Transmissions Group / Commercial Vehicle Activity

Tuesday, October 5

Design and Analysis of 2010/Tier 4 Emissions Compliant Cooling Systems

Session Code: CV301

Room 22

Session Time: 2:45 p.m.

This session will provide opportunities for cooling system design engineers and analysts to discuss the latest methods for the design and analysis of cooling systems, sub-systems and/or components. Special emphasis will be placed on highlighting important concerns that the design engineer or analyst must consider which result from the meeting the requirements of 2010/Tier 4 emissions.

Organizers - Eduardo F. Goncalves, Steve P. Gravante, Navistar Inc.

Time	Paper No.	Title
2:45 p.m.	2010-01-1927	A Practical Simulation Approach for Truck Cooling System At Early Stage Design Process and Development Fongloon Peter Pan, Ronald Schoon, Suresh Putta, Navistar Inc; Anil Ogale, ICC Navistar; Cheng Chen, Navistar Inc
3:45 p.m.	2010-01-1925	Virtual Testing and Simulation Methods for Aerodynamic Performance of A Heavy Duty Cooling Fan Phuriwat Anusonti-Inthra, William Liou, Western Michigan University; Andreas Baumann, Kenneth Kacynski, L-3 Communications
	2010-01-1926	Analytical Modeling and Simulation of Auxiliary Cooling System of Hybrid Electric Vehicle for Improving System Performance (Written Only -- No Oral Presentation) Anurodh Saxena, Gade prasad, Ashok Leyland
	2010-01-2054	Improvement of Engine Cooling Performance for a Construction Truck using Numerical and Experimental Methods (Written Only -- No Oral Presentation) Cenk Dinc, Ozgur Arslan, Tolga Akgun, Ford Otosan AS; Roger Almenar, Mindware Deutschland Gmbh

Planned by Drivetrain, Powertrain and Transmissions Group / Commercial Vehicle Activity

Tuesday, October 5

Powertrain & Drivetrain NVH (Part 1 of 2)

Session Code: CV327

Room 23

Session Time: 7:30 a.m.

This session is focused on analytical, experimental studies and developing solutions to noise and vibration problems of powertrain and its components. Related topics include, but not limited to, engine NVH, mounts, accessories, fuel injection system, powertrain dynamics, transmission noise and vibration, gear and bearing noise, driveline dynamics.

Organizers - Antoun Y. Calash, Alexander L. Gnesin, Navistar Inc.; Nicole Iorfido, SAE International

Time	Paper No.	Title
7:30 a.m.	2010-01-1987	Diesel Engine Assembly Noise Assessment Using Dynamic Excitation Lezza A. Mignery, Christopher Conklin, Navistar Inc.
8:00 a.m.	2010-01-1984	Application of Inverse Boundary Element Method for Far Field Sound Pressure Prediction of a Diesel Engine Zequang Tao, Ying Ren, Navistar Inc.
8:30 a.m.	2010-01-1988	Noise and Sound Quality Optimization of Agricultural Machine Cab Gabriella Cerrato, Sound Answers Inc.

Planned by Drivetrain, Powertrain and Transmissions Group / Commercial Vehicle Activity

Tuesday, October 5

Powertrain & Drivetrain NVH (Part 2 of 2)

Session Code: CV327

1:00 p.m.

Room 23

Session Time:

This session is focused on analytical, experimental studies and developing solutions to noise and vibration problems of powertrain and its components. Related topics include, but not limited to, engine NVH, mounts, accessories, fuel injection system, powertrain dynamics, transmission noise and vibration, gear and bearing noise, driveline dynamics.

Organizers - Antoun Y. Calash, Alexander L. Gnesin, Navistar Inc.

Time	Paper No.	Title
1:00 p.m.	2010-01-1983	Experimental Analysis for Bolt Stress of Crank Pulley in a Diesel Engine Jouji Kimura, Makoto Kidokoro, Shinichiro Kobayashi, Isuzu Motors Ltd.
1:30 p.m.	2010-01-1986	Elastomer Blend for Vibration Isolators to Meet Vehicle Key on - Key off Vibrations and Durability Anandan Sivakumar, Ashish Tiwari, TATA Motors Ltd. India; G. Raghvendra, Tata Motors, Ltd.; V M Kolhe, Tata Technologies, Ltd.
2:00 p.m.	2010-01-1985	Air Intake System Optimization for Acoustic Advantage on Automotive Vehicles Shital Shah, Defiance Technologies; Shaiju M Belsus, Nissan Ashok Leyland Technologies

Planned by Drivetrain, Powertrain and Transmissions Group / Commercial Vehicle Activity

Tuesday, October 5

Advanced Transmission and Driveline Component Design

Session Code: CV326

Room 23

Session Time: 2:45 p.m.

Organizers - Nicole Iorfido, SAE International; Girish Parvate Patil, Caterpillar Global Mining

Time	Paper No.	Title
2:45 p.m.	ORAL ONLY	Science of Friction & High Performance, Cost Effective & Sustainable Solutions Volker Plehn, DuPont Automotive
3:15 p.m.	2010-01-1978	Simulation and Studies on a Double Transition Shift Transmission Di Wu; Yin-ping Chang, Oakland Univ
3:45 p.m.	2010-01-1981	Drivability Analysis of Heavy Goods Vehicles Sufyan Abuasaker, Aldo Sorniotti, Univ of Surrey
4:15 p.m.	2010-01-1982	Independent Power Take Off (IPTO) with Mechanically Operated Multiplate Wet Clutch for Agricultural Tractors Ramaraj Range Gounder, Sethuraman Sriraman, Rakesh Verma, Tractors and Farm Equipment Limited
	2010-01-1980	Improvements of Truck Fuel Economy using Mechanical Regenerative Braking (Written Only -- No Oral Presentation) Alberto Boretti

Planned by Drivetrain, Powertrain and Transmissions Group / Commercial Vehicle Activity

Tuesday, October 5

Engine Exhaust Aftertreatment & Integration (Part 1 of 5)

Session Code: CV313

Room 24

Session Time: 7:30 a.m.

This session discusses technologies that address the treatment of engine exhaust emissions to meet commercial vehicle requirements. These technologies cover developments in catalysis, materials, controls, and integration with the complete engine/vehicle system design.

Organizers - Brad J. Adelman, Edward M. Derybowski, Navistar Inc.

Time	Paper No.	Title
7:30 a.m.	ORAL ONLY	Bosch Modular Exhaust Aftertreatment System to fulfill TIER4 final and Retrofit Requirements Katja Baur, Bosch Corp.; Wolfgang Albrecht, Bosch Emission Systems
8:00 a.m.	ORAL ONLY	Overview of EPA2010 Aftertreatment System with SCR Ataman Kayim, Daimler Trucks NORTH AMERICA LLC
8:30 a.m.	2010-01-1934	Meeting the US Heavy-Duty EPA 2010 Standards and Providing Increased Value for the Customer Steve Charlton, Thomas Dollmeyer, Thomas A. Grana, Cummins Inc.
	2010-01-1935 CANCELLED	Minimizing Catalyst Thermal Exposure for a DOC+DPF+SCR Aftertreatment System with Optimized Soot Removal and DPF Protection Strategies Qunlong Dong, Volvo Powertrain North America

Planned by Drivetrain, Powertrain and Transmissions Group / Commercial Vehicle Activity

Tuesday, October 5

Engine Exhaust Aftertreatment & Integration (Part 2 of 5)

Session Code: CV313

Room 24

Session Time: 1:00 p.m.

This session discusses technologies that address the treatment of engine exhaust emissions to meet commercial vehicle requirements. These technologies cover developments in catalysis, materials, controls, and integration with the complete engine/vehicle system design.

Organizers - Brad J. Adelman, Edward M. Derybowski, Navistar Inc.

Time	Paper No.	Title
1:00 p.m.	2010-01-1945 CANCELLED	Fleet Owner's Experiences on SCR Technology Euro IV/V Vehicles in Finland Anu Susanna Solla, VTT Technical Research Center of Finland; Tommi Mutanen, Kabus Oy; Matti Ahtiainen, Nils-Olof Nylund, Kimmo Erkkilä, Tuukka Hartikka, VTT Technical Research Center of Finland
1:30 p.m.	2010-01-1938	Optimization of a Urea SCR System for On-Highway Truck Applications Gabriel Salanta, Guanyu Zheng, Adam Kotrba, Rafael Rampazzo, Tenneco Inc.; Leonardo Bergantim, MWM International
2:00 p.m.	2010-01-1941	Investigation of Urea Deposits in Urea SCR Systems for Medium and Heavy Duty Trucks Guanyu Zheng, Adam Fila, Adam Kotrba, Ryan Floyd, Tenneco Inc.

Planned by Drivetrain, Powertrain and Transmissions Group / Commercial Vehicle Activity

Tuesday, October 5

Engine Exhaust Aftertreatment & Integration (Part 3 of 5)

Session Code: CV313

Room 24

Session Time: 2:45 p.m.

This session discusses technologies that address the treatment of engine exhaust emissions to meet commercial vehicle requirements. These technologies cover developments in catalysis, materials, controls, and integration with the complete engine/vehicle system design.

Organizers - Brad J. Adelman, Edward M. Derybowski, Navistar Inc.

Time	Paper No.	Title
2:45 p.m.	2010-01-1936	The Influence of Substrate on Ammonia-Based Cu-SCR Activity Gerard H. Hilbers, Umicore
3:15 p.m.	ORAL ONLY	DEF Heated Hose using Positive Control Technology Elastomer Provides Mechanical & Electrical Efficiencies for NOx Reduction James Quigley, Hutchinson - ESPA
3:45 p.m.	2010-01-1937	LNT NO_x Storage Modeling and Estimation via NARX Hanlong Yang, Eaton Truck Component Operations
4:15 p.m.	2010-01-1942	Aftertreatment System Performance of a Fuel Reformer, LNT and SCR System Meeting EPA 2010 Emissions Standards on a Heavy-Duty Vehicle James Edward McCarthy, Jr., Erik Dykes, Evan Ngan, Eaton Corporation; Vadim O. Strots, Navistar Inc.

Planned by Chassis and Suspension Group / Commercial Vehicle Activity; Drivetrain, Powertrain and Transmissions Commercial Vehicle Activity

Tuesday, October 5

Vehicle Dynamics (Part 1 of 2)

Session Code: CV210

Room 5

Session Time: 7:30 a.m.

This session will provide presentations in regards to various vehicle dynamics of various type of vehicles.

Organizers - Tjong T. Lie

Time	Paper No.	Title
7:30 a.m.	2010-01-1920	Adaptation of TruckSim Models to Simulate Experimental Heavy Truck Hard Braking Test Data Under Various Levels of Brake Disablement Jiantao Deng, Ohio State University; Ashley L. Dunn, SEA Ltd.; Dennis A. Guenther, Gary J. Heydinger, Ohio State University
8:00 a.m.	2010-01-1921	Straight-Line Dry Tractor-Semitrailer Braking and Handling Comparison to HVE Computer Simulation Fawzi P. Bayan, Anthony Cornetto, Ashley Dunn, Ronny Wahba, Eric Sauer, Charles Tanner, SEA Limited
8:30 a.m.	2010-01-1922	A Useful Tire Model for ATV Ride Performance on Rough Roads (Written Only -- No Oral Presentation) Yen-Chi Chang, UCLA; Tseng-Ti Fu, Hua-Chuang Auto Info Tech Ctr (HAITEC)
	2010-01-1919 CANCELLED	Analysis of the Effect of Tire and Suspension Non-Linearities on the Frequency Response of Rigid and Articulated Vehicles Noor-u-Zaman Laghari, Aldo Sorniotti, Univ of Surrey

Planned by Chassis and Suspension Group / Commercial Vehicle Activity

Tuesday, October 5

Vehicle Dynamics (Part 2 of 2)

Session Code: CV210

Room 5

Session Time: 1:00 p.m.

This session will provide presentations in regards to various vehicle dynamics of various type of vehicles.

Organizers - Benjamin Duprey, Mechanical Simulation Corp.; Tjong T. Lie

Time	Paper No.	Title
1:00 p.m.	2010-01-1923	Examination of Digging Efficiency Considering Force Feedback for Hydraulic Excavators <i>Takayuki Koizumi, Tatsuya Yoshida, Doshisha University; Hiroaki Andou, Caterpillar Japan Ltd; Nobutaka Tsujiuchi, Doshisha University</i>
1:30 p.m.	2010-01-1924	Using Collocation to Propagate Uncertainties Through ζBlack-Boxζ Vehicle Models <i>Corina Sandu, James Allen, Emmanuel Blanchard, Virginia Tech.</i>

Planned by Chassis and Suspension Group / Commercial Vehicle Activity

Tuesday, October 5

Education and Professional Development in Vehicle Dynamics (Recruitment focus)

Session Code: CV202

Room 5

Session Time: 2:45 p.m.

This session addresses important educational aspects related to the formal instruction in vehicle dynamics in academia and professional development institutions. A panel of experts will present their experience in teaching vehicle dynamics, emphasizing the course topics and format, laboratory and/or associated projects and homework assignments. A moderated discussion will address current and future instructional needs, as related to the industry demands and recommended pedagogical strategies.

Organizers - Corina Sandu, Virginia Tech.; Vladimir V. Vantsevich, Lawrence Technological Univ.

Panelists - Thomas D. Gillespie, Mechanical Simulation Corp.; Jianbo Lu, Ford Motor Co.; Marshall Molen, Center For Advanced Vehicular Systems; Xiaobo Yang, Oshkosh Corporation;

Planned by Chassis and Suspension Group / Commercial Vehicle Activity

Tuesday, October 5

Heavy Vehicle Tire Modeling/Testing & Evaluation

Session Code: CV209

Room 6

Session Time: 7:30 a.m.

This session presents tire modeling, simulation, design, and test technology as developed for and applied to heavy vehicles. The application domains may cover highway vehicles, military vehicles, and agricultural/mining/construction equipments. The topics may include tire mechanics, tire/vehicle dynamics, tire noise, tread wear, traction, rolling resistance, fatigue, durability/reliability, design, test, advances in tire manufacturing processes, etc.

Organizers - Lin Li, Liebherr Mining Equipment; Brian Southern, Volvo Trucks North America

Time	Paper No.	Title
7:30 a.m.	2010-01-1917	Evaluation of Tractor-Trailer Rolling Resistance Reducing Measures <i>Marius-Dorin Surcel, FPInnovations; Jan Michaelsen, FPInnovations</i>

8:00 a.m.	2010-01-1918	A Tire Model for Off-Highway Vehicle Simulation on Short Wave Irregular Terrain <i>Thomas Heegaard Langer, A/S Hydrema Produktion; Lars B Kristensen, Hydrema Produktion Weimar GmbH; Ole Østergaard Mouritsen, Aalborg University; Michael Rygaard Hansen, University of Agder</i>
8:30 a.m.	2010-01-1916	A 3D Semi-Empirical On-Road Transient Tire Model <i>Anake Umsrithong; Corina Sandu, Virginia Tech.</i>
9:00 a.m.	ORAL ONLY	Impact of Run-flat Insert and Suspension Design on Vehicle Ride Performance <i>Xiaobo Yang, Oshkosh Corporation</i>

Planned by Chassis and Suspension Group / Commercial Vehicle Activity

Tuesday, October 5

Roadmap to Autonomous Vehicles (Part 1 or 2)

Session Code: CV409

Room 6

Session Time: 1:00 p.m.

The industry has experienced dramatic growth in deployment of products towards autonomy. Systems like lane departure warning, collision avoidance, parallel parking, and adaptive cruise control provides assistance and driving safety. For full-vehicle autonomy the major OEM manufacturers, suppliers, and researchers face many technical challenges before autonomy can become viable. These include control solutions for pedestrian detection, steering, braking, decision-making, and legal litigation.

Organizers - Joe Steiber, Southwest Research Institute

Time	Paper No.	Title
1:00 p.m.	ORAL ONLY	Complex Composite Objects for Environment Description <i>Par Degerman, Scania CV AB; Lars Andersson PhD, Linköpings universitet</i>
1:30 p.m.	2010-01-2005	Investigating Control of Vision Based Autonomous Navigation in the Image Plane <i>Rachana Ashok Gupta, Wesley Snyder, W Shepherd Pitts, North Carolina State University</i>
2:00 p.m.	ORAL ONLY	Commercial Vehicle Infrastructure Integration: Improving Safety and Mobility With Enhanced Communications <i>Michael Brown, Southwest Research Institute</i>

Planned by Electrical and Electronics Group / Commercial Vehicle Activity

Tuesday, October 5

Roadmap to Autonomous Vehicles (Part 2 of 2)

Session Code: CV409

Room 6

Session Time: 2:45 p.m.

The industry has experienced dramatic growth in deployment of products towards autonomy. Systems like lane departure warning, collision avoidance, parallel parking, and adaptive cruise control provides assistance and driving safety. For full-vehicle autonomy the major OEM manufacturers, suppliers, and researchers face many technical challenges before autonomy can become viable. These include control solutions for pedestrian detection, steering, braking, decision-making, and legal litigation.

Organizers - Joe Steiber, Southwest Research Institute

Time	Paper No.	Title
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2:45 p.m.	ORAL ONLY	Decision-Making for Autonomous Vehicles George T. McWilliams, Southwest Research Institute
3:15 p.m.	ORAL ONLY	Vehicle to Vehicle (V2V) Communication Based Adaptive Cruise Control and Autonomous Convoying Chris Mentzer, Southwest Research Institute
3:45 p.m.	ORAL ONLY	Large Truck Unmanned Vehicle Development John Beck, Oshkosh Corp

Planned by Electrical and Electronics Group / Commercial Vehicle Activity

Tuesday, October 5

New Developments in Sensors

Session Code: CV408

Room 7

Session Time: 7:30 a.m.

Achieving innovative growth requires new technology, and many of these new technologies include electronics and software. In order for electronics and software products to be successful, they require accurate measurements of machine properties, material properties, and the operating environment - in a word sensors. New sensor technologies will be presented concerning Controls, Diagnostics, and Guidance/Awareness.

Organizers - James Lenz, John Deere & Co.

Time	Paper No.	Title
7:30 a.m.	2010-01-2002	Modeling and Calibration of Combine, Impact Plate, Yield Sensors Ryan Reinke, University of Illinois, Urbana-Champaign; James Phelan, Deere & Co.; Harry Dankowicz, University of Illinois, Urbana-Champaign
8:00 a.m.	2010-01-2003	Developments in Steering Angle Sensing for Commercial Vehicle Applications Paul C. Cain, John Richard Adams, Piher Intl. Corp.
8:30 a.m.	2010-01-2004	Reduction of Fuel Consumption with Intelligent Use of Navigation Data Raimund H.J. Varnhagen, Christian Korthaus, Continental Automotive GmbH
9:00 a.m.	ORAL ONLY	Low Cost Sensor Development: Transducers and Signal Processing Michael L. Rhodes, Jeff Puhalla, Phoenix International Corporation

Planned by Electrical and Electronics Group / Commercial Vehicle Activity

Tuesday, October 5

Model Based Design & Embedded Software Development (Part 1 of 2)

Session Code: CV406

Room 7

Session Time: 1:00 p.m.

To reduce development time and improve quality while delivering technical innovations, leading companies are using math-based models and a process known as Model-Based Design for developing embedded controllers. Engineers use an executable specification to iterate quickly through design concepts using simulation and without relying on physical prototypes. The executable specification then serves as the basis for early verification, hardware in-the-loop test, and production code generation.

Organizers - Wensi Jin, The MathWorks Inc.

Time	Paper No.	Title
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1:00 p.m.	2010-01-1997	Cummins Vehicle Mission Simulation Tool: Software Architecture and Applications <i>Nagesh Belludi, Jeremy Raymond, Joshua Receveur, Cummins Inc.; Arvind Hosagrahara, The MathWorks, Inc.</i>
1:30 p.m.	2010-01-1999	Model Based Design Accelerates the Development of Mechanical Locomotive Controls <i>John Reedy, Stephen Lunzman, Caterpillar Inc.</i>
2:00 p.m.	2010-01-2000	Automatic Report Generation in Model-Based Design <i>Saurabh Mahapatra, MathWorks</i>

Planned by Electrical and Electronics Group / Commercial Vehicle Activity

Tuesday, October 5

Model Based Design & Embedded Software Development (Part 2 of 2)

Session Code: CV406

Room 7

Session Time: 2:45 p.m.

To reduce development time and improve quality while delivering technical innovations, leading companies are using math-based models and a process known as Model-Based Design for developing embedded controllers. Engineers use an executable specification to iterate quickly through design concepts using simulation and without relying on physical prototypes. The executable specification then serves as the basis for early verification, hardware in-the-loop test, and production code generation.

Organizers - Wensi Jin, The MathWorks Inc.

Time	Paper No.	Title
2:45 p.m.	ORAL ONLY	Efficient Implementation of Software Variants with Model-Based Design <i>Dirk Fleischer, dSPACE Inc.</i>
3:15 p.m.	2010-01-1998	Validation of a Line-Haul Class 8 Combination Truck <i>Antoine Delorme, Dominik Karbowski, Argonne National Laboratory</i>
3:45 p.m.	2010-01-1996	Plug-and-Play Software Architecture to Support Automated Model-Based Control Process <i>Aymeric Rousseau, Shane Halbach, Neeraj Shidore, Phillip Sharer, Ram Vijayagopal, Argonne National Laboratory</i>
4:15 p.m.	2010-01-2001	Modeling and Validation of an Over-the-Road Truck <i>Lijuan Wang, Nigel Clark, Pinggen Chen, West Virginia Univ</i>

Planned by Electrical and Electronics Group / Commercial Vehicle Activity

Tuesday, October 5

Air Suspension, Off-Road Chassis and Suspension

Session Code: CV201

Room TBD

Session Time:

This session presents modeling, simulation, design, and test technology as developed for and applied to off-road vehicles, as well as air suspension. It is limited in scope to vehicle systems. The off-road chassis & Suspension and air suspension session may be targeted to various application domains such as vehicle modeling, simulation, analysis, design, fatigue, durability/reliability, mobility, ride comfort, handling, vibration, and power management.

Organizers - Brendan Chan, Bendix Commercial Vehicle Systems LLC; Lin Li

Time	Paper No.	Title
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- 2010-01-1892 **Load Calculations for Slewing Bearings (Written Only -- No Oral Presentation)**
Noboru Kashino, Antex Corp.
- 2010-01-1893 **Influence of Oil Compressibility of Fluidic Suspensions on Vehicle Roll Stability and Ride Dynamics (Written Only -- No Oral Presentation)**
Dongpu Cao, Univ. of Waterloo
- 2010-01-1894 **Experimental and Analytical Property Characterization of a Self-Damped Pneumatic Suspension System (Written Only -- No Oral Presentation)**
Zhihong Yin, Hunan University; Amir Khajepour, Dongpu Cao, Babak Ebrahimi, University of Waterloo; Konghui Guo, Jilin University

Planned by Chassis and Suspension Group / Commercial Vehicle Activity

Tuesday, October 5

COMVEC Poster Session

Session Code: CV800

Room TBD

Session Time:

The COMVEC poster session is a program targeted to stimulate participation among authors and attendees and will provide an excellent forum for authors to present their work in an informal and interactive setting. Posters are ideal for presenting speculative, late-breaking results or for giving an introduction to interesting, innovative work. Posters are intended to provide authors and participants with the ability to connect with each other and to engage in discussions about the work.

Organizers - Richard Miller, NIOSH

Time	Paper No.	Title
ORAL ONLY		Analysis of Leaf - Air Suspension System for Ride Quality Improvement in Commercial Vehicles Jasdeep Singh Arora, Reddaiah Tappeta, Ashok Leyland Limited
ORAL ONLY		DEF Heated Hose using Positive Control Technology Elastomer Provides Mechanical & Electrical Efficiencies for NOx Reduction James Quigley, Hutchinson - ESPA
ORAL ONLY		Science of Friction & High Performance, Cost Effective & Sustainable Solutions Volker Plehn, DuPont Automotive
ORAL ONLY		Autonomous Vehicle Network System Jaywant Mahajan, Mahindra Engineering Services
ORAL ONLY		Universal Time Triggered Network Jaywant Mahajan, Mahindra Engineering Services
ORAL ONLY		Hybrid Braking Systems for Commercial Trailers Guy Rini
ORAL ONLY		Hybrid Braking System Guy Rini, GTR Development LLC
ORAL ONLY		Performance Powered by Innovation David McGraw, Oshkosh Corp.
2010-01-2044 CANCELLED		Case Study of Design of Experiment Conducted on Passenger Van Vehicle for Optimization of Suspension Parameters to Reduce Rollover Tendency Renuka Avachat, Jitendra S Mahajan, Kamaljeet Nandkeolyar, Tata Motors, Ltd.

- 2010-01-2045** — **A Comparison of Hydrolysis and Fermentation Processes for Lignocellulosic Bioethanol Production**
ORAL ONLY Anand C. Tripathy
- 2010-01-2046** — **Corrosion Behavior of Ultra Fine Grain Pure Magnesium for Automotive Applications.**
CANCELLED P K Ajeet Babu, Vellore Institute of Technology
- 2010-01-2047** — **Integrated Radiator with Auxiliary Tank for Light Commercial Vehicles**
ORAL ONLY Nilesh Kulkarni, Tata Motors, Ltd.; Kamaljeet Nandkeolyar, Narayan Jadhav, Tata Motors Ltd
- 2010-01-2048** — **Best Practices and Alignment with the Strategy**
CANCELLED Amrut Patki
- 2010-01-2049** — **Digital Human Modeling and Ergonomic Factors in Commercial Vehicle Design**
CANCELLED Julie Charland, Dassault Systemes
- 2010-01-2050** — **Multifunctional Joystick Grips with Integrated CAN Bus System and Capacitive Presence Detection**
ORAL ONLY Francois J. Mortier, Elobau Sensor Technology
- 2010-01-2052** — **Active Balancing Method in Lithium Ion Battery Stacks**
ORAL ONLY Carl J. Bonfiglio, Infineon Technologies

Wednesday, October 6

Blue Ribbon Panel - Sustainability

Session Code: CV901

Room 1 & 2

Session Time: 10:00 a.m.

Panel will address several topics on sustainability which may include emerging technologies, government/regulatory impacts, and how sustainability is factored into future business plans and growth.

Organizers - John Amdall, Caterpillar; Gwenne A. Henricks, Caterpillar Inc.

Panelists - Deepak Kapur, Navistar Inc.; Douglas Oberhelman, Caterpillar Inc.;

Wednesday, October 6

Electronics Executive Panel Series: Managing Rapid Electronics Growth and Complexity in Commercial Vehicles

Session Code: CV904

Room 1 & 2

Session Time: 3:15 p.m.

An electronics themed Executive Panel touching on Vehicle Electronic Architecture Management is in process. Areas to be addressed include: model-based system engineering processes and tools; systems integration and early system-level validation testing; role of vehicle manufacturer and the system / component supplier; and successes, challenges, and future considerations.

Organizers - Shawn Dagley, Siemens PLM Solutions; Jon Friedman, MathWorks Inc.; Alain P. Jablonowski, Bosch Automotive Diesel Systems Co., Ltd.; Mark D. Jensen, Vector CANtech Inc.

Moderators - Karina Kay Morley, Ricardo Inc.

Panelists - Elizabeth Carey, Cummins Inc.; Deanna Carroll, Navistar Inc.; Jim Daily, Honeywell Aerospace; Duane Pillar, Oshkosh Corporation; Kyle W. Williams, Robert Bosch LLC;

Wednesday, October 6

Vehicle Solutions and Technologies for Freight Efficiency

Session Code: CV709

Room 10

Session Time: 1:00 p.m.

It is projected that over the next decade the freight movement needs of the global economy will increase dramatically placing a growing demand on the commercial vehicle industry. However the current economic uncertainty greatly limits the options available to individual companies. Successful companies will explore technologies and solutions related to material, structures, powertrain and aerodynamics to name a few. This session provides a snap shot of the solution landscape.

Organizers - Richard Wood, SOLUS-Solutions and Technologies, LLC

Chairpersons - Richard Wood, SOLUS-Solutions and Technologies, LLC

Moderators - Richard Wood, SOLUS-Solutions and Technologies, LLC

Time	Paper No.	Title
1:00 p.m.	2010-01-2033	Innovative Design Concepts for Lightweight Floors in Heavy Trailers Gergis W. William, West Virginia Univ.
1:30 p.m.	2010-01-2032	Optimization of Aerodynamics and Engine Cooling Performance of a JMC Mid-Size Truck using Simulation Lipeng Lu, Linfeng Zhang, Shuying Liu, JMC Company; Erwan Le Loc'h, Heinz Friz, Exa Corporation
2:00 p.m.	2010-01-2031	Development of a Method for the Long-Term Efficiency and Cost Evaluation of Mobile Idle-Reduction Technologies (MIRT) Robert Hupfer, Georg Habbel, Webasto Product North America Inc.
2:30 p.m.	2010-01-2034	Simulation and Modeling of Bi-Fuel Engine for Improving the Performance Parameters Kambiz Rezapour, Islamic Azad University, Karaj Branch; Kambiz M. Ebrahimi, Alastair S. Wood, University of Bradford; Abolfath Nikranjbar, Islamic Azad University, Karaj Branch
3:00 p.m.	ORAL ONLY	Implementation of 3D Thermal Management Simulation into Vehicle Design Process lihan Bayraktar, Oshkosh Corp.
	2010-01-2035	Aerodynamic Shape Optimization of a Container-Truck's Wind Deflector Using Approximate Model (Written Only -- No Oral Presentation) Xu Gong; Zhengqi Gu; Zhenlei Li; Xin Song; Yiping Wang
	2010-01-2036	Performance Evaluation of Metal Matrix Composites Bolted Joints (Written Only -- No Oral Presentation) Gergis W. William, West Virginia Univ.

Planned by Total Vehicle Group / Commercial Vehicle Activity

Wednesday, October 6

Advancements in Diesel Particulate Filter (DPF) Cleaning Technologies

Session Code: CV606

Room 11

Session Time: 7:30 a.m.

The need for proper maintenance and cleaning of DPFs will be discussed and review new advancements in cleaning using various techniques to remove Ash, Soot, and Oil such as; (1) Pulsing with pressurized air, (2) Blowing air with rotating nozzle blowers, (3) Baking off hydrocarbons for controlled oxidation and thermal stress, and (4) Washing with liquid.

Organizers - Karl Dedolph, D3 Consulting Inc.; Lew Flowers, US Postal Service

Moderators - Karl Dedolph III, D3 Consulting Inc.; Lew Flowers, US Postal Service

Panelists - Jeremy Anderson; Charles Kinkade, SPX Service Solutions; Fred Schmidt, Donaldson Company Inc.; Jeff

A. Vandenabeele, Mann + Hummel GmbH;

Planned by CV Maintenance Group / Commercial Vehicle Activity

Wednesday, October 6

Smoother Rides Ahead? Current Research, Standards Development, and Regulations on Tire Pressure and Performance

Session Code: CV602

Room 11

Session Time: 1:00 p.m.

This session will provide an update on current activities on tire pressure monitoring and maintenance. Our panelists will present results of a large USDOT-sponsored field operational test, other tire research, SAE standards recently published and in development, and regulatory development activities.

Organizers - Deborah M. Freund, US Dept. of Transportation

Moderators - Deborah M. Freund, US Dept. of Transportation

Panelists - Joseph Bachman, U.S. EPA; Stephen Brady, Booz Allen Hamilton Inc.; Gregory Felder, Michelin North America Inc.; Steve Graham, Schneider National Inc.; George J. Soodoo, NHTSA;

Planned by CV Maintenance Group / Commercial Vehicle Activity

Wednesday, October 6

Machine Health & Conditioned Based Maintenance

Session Code: CV702

Room 12

Session Time: 7:30 a.m.

In recent years the concepts of Machine Health, Condition Based Maintenance, Prognostics and Telematics emerged to address customer demands, increase productivity and reduce cost of ownership. How do these concepts implement on alternative fuel, electrification, electric and hybrid vehicles? Learn to apply these concepts on today's and tomorrow's "green" products to increase customer satisfaction, first time fix and reduce No Fault Found.

Organizers - Mark N. Pope, General Motors LLC; Arnold Taube, Deere & Company

Moderators - Mark N. Pope, General Motors LLC

Panelists - Joseph J. Barkai, IDC Manufacturing Insights; Shuvo Bhattacharjee, ETAS Inc.; Michael J. Erny, Ivy Tech. Community College of Indiana; James Lenz, John Deere & Co.; Arnold Taube, JOHN DEERE COMPANY;

Time	Paper No.	Title
	2010-01-2016	An Expert System to Evaluate the Wear between Cylinder Kit Parts for the Vehicle Engine (Written Only -- No Oral Presentation) Mohamed Khalil, Helwan Univ.

Planned by Total Vehicle Group / Commercial Vehicle Activity

Wednesday, October 6

Service Issues

Session Code: CV701

Room 12

Session Time: 1:00 p.m.

Today's global & stressed economy with changing technologies and tightening energy makes new demands on service information. Globally distributed, integrated teams, "world" products, globally sourced components and short development cycles along with alternative fuels and electrification all affect serviceability and service information. Learn how leading OEMs and suppliers are adapting to achieve "better, faster, cheaper" authoring, production, distribution and use of service information.

Organizers - Mark N. Pope, General Motors LLC; Arnold Taube, Deere & Company

Time	Paper No.	Title
1:00 p.m.	2010-01-2012	Determining Rational Geometry Distortion for Publishing Light-Weight 3-D Models <i>Arnold Taube, John Deere & Co.; Matthew Cappel, Exact Metrology; Vincent Boens, John Deere & Co.</i>
1:30 p.m.	2010-01-2011	Using 3D Product Data Beyond Engineering <i>Carsten John, University of Applied Sciences Mannheim</i>
2:00 p.m.	2010-01-2014	High Voltage Safety for the Service Technician <i>Chris Merkle, Lisa Kennedy, Raytheon Professional Services</i>
2:30 p.m.	2010-01-2015	Investigation of Frequent Pinion Seal and Hub Seal Leakages on Heavy Commercial Vehicles <i>Saurabh Singh, Tata Motors, Ltd.; Narayan Jadhav, Kamaljeet Nandkeolyar, Shirish Pandav, Pankaj Sali, Tata Motors Ltd</i>
	2010-01-2013	Development of an Implementation Guide for In-Vehicle Intelligent Transportation Systems (Written Only -- No Oral Presentation) <i>Marius-Dorin Surcel, Jan Michaelsen, Jean-Sebastien Foisy, FPINNOVATIONS</i>

Planned by Total Vehicle Group / Commercial Vehicle Activity

Wednesday, October 6

Human Factors in Occupant Safety (Part 1 of 2)

Session Code: CV704

Room 13

Session Time: 7:30 a.m.

Providing adequate control, protection and comfort to the driver and passengers are important design issues to providing safety in commercial vehicles. The issues are all related by biomechanics, human factors and testing. This session presents current topics in human factors and occupant safety. This session was made broad because researchers normally have a broad interest in protection, testing, and mitigation.

Organizers - Richard Current, NIOSH; Radhey Kushwaha, Univ. of Saskatchewan

Time	Paper No.	Title
7:30 a.m.	2010-01-2020	Field Demonstration of a Camera/Video Imaging System for Heavy Vehicles - Driver Lane Change Performance Preliminary Results <i>Gregory Fitch, Myra Blanco, Richard Hanowski, Virginia Tech Transportation Institute; Paul Rau, National Highway Traffic Safety Administration; Chris Flanigan, US Department of Transportation</i>
8:00 a.m.	2010-01-2019	Development of Auditory Warning Signals for Mitigating Heavy Truck Rear-End Crashes <i>William Schaudt, Darrell Bowman, Walter Wierwille, Richard Hanowski, Virginia Tech; Chris Flanigan, US Dept of Transportation</i>
8:30 a.m.	2010-01-2022	Analysis of Ride Vibration Environment of Soil Compactors <i>Ario Kordestani, Ohive Inc.; Subhash Rakheja, Concordia University; Pierre Marcotte PhD, IRSST; Alireza Pazooki, Dainius Juras, Concordia University</i>
9:00 a.m.	2010-01-2023	Mitigating Heavy Truck Rear-End Crashes with the use of Rear-Lighting Countermeasures <i>Darrell Bowman, William Schaudt, Joseph Bocanegra, Richard Hanowski, Virginia Tech; Chris Flanigan, US Dept of Transportation</i>

Planned by Total Vehicle Group / Commercial Vehicle Activity

Wednesday, October 6

Human Factors in Occupant Safety (Part 2 of 2)

Session Code: CV704

Room 13

Session Time: 1:00 p.m.

Providing adequate control, protection and comfort to the driver and passengers are important design issues to providing safety in commercial vehicles. The issues are all related by biomechanics, human factors and testing. This session presents current topics in human factors and occupant safety. This session was made broad because researchers normally have a broad interest in protection, testing, and mitigation.

Organizers - Richard Current, NIOSH; Radhey Kushwaha, Univ. of Saskatchewan

Time	Paper No.	Title
1:00 p.m.	2010-01-2018	Long Term Transient Cooling of Heavy Vehicle Cabin Compartments Zhu Wang, Ales Alajbegovic, Jaehoon Han, Tristan Donley, Kevin Horrigan, Exa Corporation; David Bloch, Melinda Pell, Andrew Holz, AGCO Corp.
1:30 p.m.	2010-01-2017	Design Strategies for Meeting ECE R14 Safety Test for Light Commercial Vehicle Abhijit Vishnu Londhe, Suhas Kangde, Mahindra & Mahindra, Ltd.
2:00 p.m.	ORAL ONLY	Overview of SAE Heavy Truck Crashworthiness Recommended Practices James Chinni, CAPE, a division of IMMI; Ryan Hoover, IMMI (Indiana Mills & Mfg Inc)
	2010-01-2021	Study on Chest Injury of Occupants in Frontal Crash Tests Based on China NCAP Protocol (Written Only -- No Oral Presentation) Zhixin Liu, Hong Chen, Yongwan Shi, Xiaolong Zhang, China Automotive Technology and Research Center

Planned by Total Vehicle Group / Commercial Vehicle Activity

Wednesday, October 6

Braking, Steering and Integrated Chassis Safety Systems (Part 1 of 3 - Braking Focus)

Session Code: CV101

Room 14

Session Time: 8:00 a.m.

The session will explore advances in steering and braking technologies, as well as the integration of various chassis systems to allow safe commercial vehicle operation.

Organizers - Mark A. Eisenbarth, Volvo Trucks North America; Donald L. Long, R H Sheppard Co.; Daniel Williams, TRW Commercial Steering Systems

Time	Paper No.	Title
8:00 a.m.	2010-01-1890	Vehicle Performance Improvement by Steering a Third Axle Daniel Williams, Kenneth A. Sherwin, TRW Commercial Steering Systems
8:30 a.m.	ORAL ONLY	Lane Position Integrated into Artificial Steering Feel Kenneth A. Sherwin, TRW Commercial Steering Systems
9:00 a.m.	ORAL ONLY	Electronic Stability Control as a Standard in Commercial Vehicle Heiko Kopper, Thomas Dieckmann, Immanuel Henken, WABCO Development GmbH; Patrick McNally, Meritor WABCO

Planned by Braking and Steering Group / Commercial Vehicle Activity

Wednesday, October 6

Braking, Steering and Integrated Chassis Safety Systems (Part 2 of 3 - Steering Focus)

Session Code: CV101

Room 14

Session Time: 1:00 p.m.

The session will explore advances in steering and braking technologies, as well as the integration of various chassis systems to allow safe commercial vehicle operation.

Organizers - Mark A. Eisenbarth, Volvo Trucks North America; Donald L. Long, R H Sheppard Co.; Daniel Williams, TRW Commercial Steering Systems

Time	Paper No.	Title
1:00 p.m.	ORAL ONLY	Closed Center Steering Components and System for Commercial Vehicles Jeff Tipton, Scott Diehl, R H Sheppard Co. Inc.
1:30 p.m.	2010-01-1886	Electrically Powered Hydraulic Steering On Medium Duty Trucks Vishisht V. Gupta, Daniel Williams, Kenneth Sherwin, TRW Commercial Steering Systems
2:00 p.m.	2010-01-1887	Development of Methodology for Steering Effort Improvement for Mechanical Steering in Commercial Vehicles Vinay Upadhyay, Amul Pathak, Ajay Kshirsagar, Iqbal Khan, Kamaljeet Nandkeolyar, Tata Motors Ltd

Planned by Braking and Steering Group / Commercial Vehicle Activity

Wednesday, October 6

Braking, Steering and Integrated Chassis Safety Systems (Part 3 of 3 - Steering Focus)

Session Code: CV101

Room 14

Session Time: 4:45 p.m.

The session will explore advances in steering and braking technologies, as well as the integration of various chassis systems to allow safe commercial vehicle operation.

Organizers - Mark A. Eisenbarth, Volvo Trucks North America; Donald L. Long, R H Sheppard Co.; Daniel Williams, TRW Commercial Steering Systems

Time	Paper No.	Title
4:45 p.m.	2010-01-1891	Full-Scale Testing and Analysis of Tractor-Trailer Braking Performance With and Without Trailer Anti-Lock Brakes Jeffrey Ball, David Danaher, Trevor Buss, Veritech Consulting Engineering LLC
5:15 p.m.	2010-01-1885	Selection of EPDM Elastomer in Brake Hose Application for Improved Brake System Performance Anandan Sivakumar, Asmita Sathaye, TATA Motors Ltd.India
5:45 p.m.	2010-01-1888	Optimization of Brake Pedal Feel and Performance for Dual Air Over Hydraulic System on Light Commercial Vehicles Manjunath Keerthi, Tata Motors, Ltd.; Santosh Shete, Narayan Jadhav, Kamaljeet Nandkeolyar, Tata Motors Ltd; Santosh Sonar, Tata Technologies Ltd

Planned by Braking and Steering Group / Commercial Vehicle Activity

Wednesday, October 6

Diesel Engine System Design (Part 1 of 3)

Session Code: CV316

Room 22

Session Time: 7:30 a.m.

This session covers all system-level engine technologies and design/analysis/testing techniques related to diesel engine system design. It includes the areas of emissions, fuel economy, combustion, calibration/control, fuel systems, valvetrain integration, thermodynamic cycles, air/charging systems, EGR systems, and engine brakes. It also includes system-level integration issues for the engine/powertrain, and steady-state/transient performance for on/off-road and heavy/light-duty applications.

Organizers - Timothy Prochnau, Qianfan (Harry) Xin, Navistar Inc.

Time	Paper No.	Title
7:30 a.m.	2010-01-1956	Vehicle Integration For US EPA 2010 Emissions and Lowest Cost of Ownership Jeffrey P. Seger, Cummins
8:00 a.m.	2010-01-1948	A Semi-Empirical Model for Predicting Pressure Drops of Fouled EGR Coolers Ho Teng, AVL Powertrain Engineering Inc.
8:30 a.m.	2010-01-1955	Diesel EGR Cooler Fouling with Ni-Fe-Cr-Al DPF at Freeway Cruise Doug K. Chang, Ahmed Jawdat Sobh, Jimi S. Tjong, Daniel J. Styles, Joseph J. Szente, Ford Motor Co.
9:00 a.m.	2010-01-1958	A Cost-Efficient EGR Technology for Off-road Diesel Engines with Mechanical Fuel Injection Equipment to Satisfy Advanced Emissions Standards (Written Only -- No Oral Presentation) P. A. Lakshminarayanan, Ashok Leyland

Planned by Drivetrain, Powertrain and Transmissions Group / Commercial Vehicle Activity

Wednesday, October 6

Diesel Engine System Design (Part 2 of 3)

Session Code: CV316

Room 22

Session Time: 1:00 p.m.

This session covers all system-level engine technologies and design/analysis/testing techniques related to diesel engine system design. It includes the areas of emissions, fuel economy, combustion, calibration/control, fuel systems, valvetrain integration, thermodynamic cycles, air/charging systems, EGR systems, and engine brakes. It also includes system-level integration issues for the engine/powertrain, and steady-state/transient performance for on/off-road and heavy/light-duty applications.

Organizers - Timothy Prochnau, Qianfan (Harry) Xin, Navistar Inc.

Time	Paper No.	Title
1:00 p.m.	2010-01-1952	In-Use Emissions from Non-road Equipment for EPA Emissions Inventory Modeling (MOVES) Robert A. Giannelli, Carl Fulper, Constance Hart, David Hawkins, Jingnan Hu, James Warila, US Environmental Protection Agency; Sandeep Kishan, Michael A. Sabisch, Eastern Research Group Inc.; Paul W. Clark, Christopher L. Darby, Carl Ensfield, Don Henry, Ron Yoder, Sensors Inc.
1:30 p.m.	2010-01-1950	An Empirical Approach in Determining the Effect of Road Grade on Fuel Consumption from Transit Buses ABM Siddiq Khan, ACEEE; Nigel Clark, West Virginia Univ

- 2:00 p.m. **ORAL ONLY** **Development of High Performance Crankcase Ventilation Filtration Product and Technology through Advanced Characterization Tools and Methods**
Manpreet S. Phull, Tom Kotz, Veli Kalayci, Donaldson Company Inc.
- 2010-01-1949 **Exhaust Emission Tests from Agricultural Machinery under Real Operating Conditions (Written Only -- No Oral Presentation)**
Piotr Lijewski, Jerzy Merkisz, Pawel Fuc, Jacek Pielecha, Poznan University of Technology

Planned by Drivetrain, Powertrain and Transmissions Group / Commercial Vehicle Activity

Wednesday, October 6

Diesel Engine System Design (Part 3 of 3)

Session Code: CV316

Room 22

Session Time: 4:45 p.m.

This session covers all system-level engine technologies and design/analysis/testing techniques related to diesel engine system design. It includes the areas of emissions, fuel economy, combustion, calibration/control, fuel systems, valvetrain integration, thermodynamic cycles, air/charging systems, EGR systems, and engine brakes. It also includes system-level integration issues for the engine/powertrain, and steady-state/transient performance for on/off-road and heavy/light-duty applications.

Organizers - *Timothy Prochnau, Qianfan (Harry) Xin, Navistar Inc.*

Time	Paper No.	Title
5:45 p.m.	2010-01-1953	Infrared-excitation for Improved Hydrocarbon Fuels' Combustion Efficiency - Concept and Demonstration <i>Albert Wey, Aldi Far-IR Products Inc.</i>
	2010-01-1959	The Particle Emission Characteristics of a Light Duty Diesel Engine by Using Different Pilot Injections (Written Only -- No Oral Presentation) <i>Jun Zhang, Fan Zhang, Guohong Tian, Hongming Xu, Yanfei Li, Ritchie Daniel, Univ of Birmingham; Haiwen Song, Phil Price, Ford Motor Company</i>
	2010-01-1960	Self-Ignition Delay Prediction in PCCI Direct Injection Diesel Engines Using Multi-Zone Spray Combustion Model and Detailed Chemistry (Written Only -- No Oral Presentation) <i>Andrey Kuleshov, Bauman Moscow State Technical Univ.; A V Kozlov, East Ukrainian National University; Khamid Mahkamov, Durham Univ.</i>

Planned by Drivetrain, Powertrain and Transmissions Group / Commercial Vehicle Activity

Wednesday, October 6

Fuel Economy Effect on Commercial Vehicle Powertrain Through Thermal Management and Reduced Parasitics

Session Code: CV306

Room 23

Session Time: 7:30 a.m.

This session covers new technologies for fuel economy improvements of commercial vehicles with emphasis on powertrain/drivetrain components. The focus will include topics on thermal energy management, reduction of parasitics, and efficiency gains in powertrain subsystems.

Organizers - *Ryan Jefferis, Daimler Trucks North America LLC; Brian Walker, AVL Powertrain Engineering Inc.*

Time	Paper No.	Title
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7:30 a.m.	2010-01-1928	Waste Heat Recovery Concept to Reduce Fuel Consumption and Heat Rejection from a Diesel Engine Ho Teng, AVL POWERTRAIN ENGINEERING
8:00 a.m.	2010-01-1929	Impact of Advanced Technologies on Medium-Duty Trucks Fuel Efficiency Antoine Delorme, Dominik Karbowski, Argonne National Laboratory
8:30 a.m.	ORAL ONLY	A Viable Alternative for Boosting Diesel Engine Applications - Mechanically Driven Supercharger Christopher Suhocki, Eaton Supercharger Div.

Planned by Drivetrain, Powertrain and Transmissions Group / Commercial Vehicle Activity

Wednesday, October 6

Alternative Fuels/Fluids - Biofuels (Part 1 of 2)

Session Code: CV319

Room 23

Session Time: 1:00 p.m.

High volatility in petroleum pricing, finite resources and increased concerns with climate changes have intensified search and implementation of transport/equipment fuel alternatives. This session will address that challenges presented by alternative fuels as potential replacement of petroleum fuels, specifically in terms of engine system interactions on performance and emissions.

Organizers - Radhey Kushwaha, Satya Panigrahi, Univ. of Saskatchewan

Time	Paper No.	Title
1:00 p.m.	2010-01-1967	Comparative Emissions from Diesel and Biodiesel Fueled Buses from 2002 to 2008 Model Years Nigel Clark, David L. McKain, Petr Sindler, Ronald Jarrett, John Nuszowski, Mridul Gautam, W Wayne, Gregory Thompson, West Virginia Univ; Ricky Sonny , Central Florida RTA
1:30 p.m.	2010-01-1969	Experimental Study on Influence of Fuel Oxygen Content on Combustion and Emission Characteristics of a Direct Injection C.I. Engine Jilse Sebastian, Govindan Nagarajan, Anna University Chennai, India
2:00 p.m.	2010-01-1961	Influence of Fuel Injection Rate on the Performance, Emission and Combustion Characteristics of DI Diesel Engine Running on Calophyllum Inophyllum Linn Oil (Honne Oil) / Diesel Fuel Blend Venkanna Belagur, Basaveshwar Engineering College, Bagalkot; Venkataramana Reddy PhD, Guru Nanak Institute of Technology
2:30 p.m.	2010-01-1962	Waste Cooking Oil Conversion to Biodiesel in Presence of Solid K₃PO₄ as Catalyst Essam Al-Zaini, Adesoji A. Adesina, John F. Olsen, Univ. of New South Wales

Planned by Drivetrain, Powertrain and Transmissions Group / Commercial Vehicle Activity

Wednesday, October 6

Alternative Fuels/Fluids - Biofuels (Part 2 of 2)

Session Code: CV319

Room 23

Session Time: 4:45 p.m.

High volatility in petroleum pricing, finite resources and increased concerns with climate changes have intensified search and implementation of transport/equipment fuel alternatives. This session will address that challenges presented by alternative fuels as potential replacement of petroleum fuels, specifically in terms of engine system interactions on performance and emissions.

Organizers - Radhey Kushwaha, Satya Panigrahi, Univ. of Saskatchewan

Time	Paper No.	Title
4:45 p.m.	2010-01-1965	Effect of Injection Pressure and Ethyl Acetate Additive on Performance and Emissions of Water Diesel Emulsion Fueled DI Diesel Engine Swati Bhimasenrao Wadawadagi, Basaveshwar Engineering College; Venkataramana Reddy PhD, Guru Nanak Institute of Technology
5:15 p.m.	2010-01-1968	Biodiesel Blend Emissions of a 2007 Medium Heavy Duty Diesel Truck Idowu Olatunji, Scott Wayne, Mridul Gautam, Nigel Clark, Gregory Thompson, David McKain, Petr Sindler, John Nuszkowski, West Virginia Univ
5:45 p.m.	2010-01-1970	Investigation of Three Different Mixtures of Ecofuels Used on a Perkins Engine on a Test Bed Dimitrios Savvidis, Univ. of Leeds; Lech Sitnik, Wroclaw Technical University

Planned by Drivetrain, Powertrain and Transmissions Group / Commercial Vehicle Activity

Wednesday, October 6

Engine Exhaust Aftertreatment & Integration (Part 4 of 5)

Session Code: CV313

Room 24

Session Time: 7:30 a.m.

This session discusses technologies that address the treatment of engine exhaust emissions to meet commercial vehicle requirements. These technologies cover developments in catalysis, materials, controls, and integration with the complete engine/vehicle system design.

Organizers - Brad J. Adelman, Edward M. Derybowski, Navistar Inc.

Time	Paper No.	Title
7:30 a.m.	2010-01-1940	Fuel Injector Optimization for Diesel Aftertreatment Systems Coupled with Exhaust Aftertreatment System Performance on a Heavy-Duty Diesel Engine Powered Vehicle Daniel William Bamber, Steven Lee Ambrose, James Edward McCarthy, Jr., Eaton Vehicle Group/FEPC
8:00 a.m.	2010-01-1946	Integration of Diesel Burner for Large Engine Aftertreatment using CFD Manoj Kumar Sampath, Guanyu Zheng, Adam Kotrba, Tenneco Inc.
8:30 a.m.	2010-01-1944	Diesel Exhaust Aftertreatment System Packaging and Flow Optimization on a Heavy-Duty Diesel Engine Powered Vehicle Philip Wetzel, James Edward McCarthy, Jr., Eaton Corp.; Milind Kulkarni, Lokanath Mohanta, Eaton Technologies Private Limited; Gregory Griffin, Navistar, Inc.
9:00 a.m.	2010-01-1943	Evaluation of Mixer Designs for Large Diesel Exhaust Aftertreatment Systems Timothy Gardner, Manoj Kumar Sampath, Guanyu Zheng, Adam Kotrba, Michael Golin, Tenneco Inc

Planned by Drivetrain, Powertrain and Transmissions Group / Commercial Vehicle Activity

Wednesday, October 6

Engine Exhaust Aftertreatment & Integration (Part 5 of 5)

Session Code: CV313

Room 24

Session Time: 1:00 p.m.

This session discusses technologies that address the treatment of engine exhaust emissions to meet commercial vehicle requirements. These technologies cover developments in catalysis, materials, controls, and integration with the complete engine/vehicle system design.

Organizers - Brad J. Adelman, Edward M. Derybowski, Navistar Inc.

Time	Paper No.	Title
1:00 p.m.	2010-01-1939	The Application of Two Closely Coupled DPFs as the After-treatment System (Written Only -- No Oral Presentation) Jun Zhang, Guohong Tian, Hongming Xu, Fan Zhang, Ritchie Daniel, Univ of Birmingham
1:30 p.m.	2010-01-1947	Simulation of Ammonia SCR-Catalytic Converters: Model Development, Calibration and Application Avi Anthony Cornelio, Ankit Shukla, Mercedes Benz R&D India; Susumu Kouketsu, Shinji Nakayama, Satoshi Hiranuma, Akira Suzuki, Mitsubishi Fuso Truck and Bus Corp

Planned by Drivetrain, Powertrain and Transmissions Group / Commercial Vehicle Activity

Wednesday, October 6

Advanced Engine Component Design

Session Code: CV325

Room 24

Session Time: 4:45 p.m.

This session is focused on Advanced Engine Component / Sub-System / System Design, Development, Analysis, Testing and Validation. Related topics include, but not limited to, Base Engine Components 5C's, FEAD / Accessories, Fuel System, Air Management, Powertrain Dynamics, Gear Train, Valve Train, Bearings & Driveline Dynamics.

Organizers - German Alonso Acosta, Antoun Y. Calash, Navistar Inc.

Time	Paper No.	Title
4:45 p.m.	2010-01-1975	Design / Analysis and Development of Cylinder Head for High Performance 3 Cylinder CRDi Euro-V Diesel Engine for a High Combustion Pressure of 200 Bar Bharani Dharan R, S S Ramdasi, Neelkanth Marathe, Automotive Research Association of India
5:15 p.m.	2010-01-1973	Design and Development of High Performance Diesel Engine Block for High Power Density Engines with an Integrated Approach S S Ramdasi, Bharani Dharan R, Automotive Research Association of India
	2010-01-1974	Determining Fatigue Limit at Case Depth for Crankshaft (Written Only -- No Oral Presentation) Naiqiang Wu, Navistar Inc.
	2010-01-1976	Direct Injection and Spark Controlled Jet Ignition to Convert A Diesel Truck Engine to LPG (Written Only -- No Oral Presentation) Alberto Boretti, University of Ballarat
	2010-01-1977	Research on Pulley Deformation of Metal Belt Continuously Variable Transmission (Written Only -- No Oral Presentation) Zhang Wu, Liu Kai, Zhou Chunguo, Xi'an University of Technology

Planned by Drivetrain, Powertrain and Transmissions Group / Commercial Vehicle Activity

Wednesday, October 6

All Wheel Drive/ Multi- Wheel Drive Vehicle Dynamics & Performance

Session Code: CV203

Room 5

Session Time: 7:30 a.m.

This session covers performance of conventional and autonomous, terrain and road vehicles with four and bigger number of driving wheels. Applications include terrain and high-way heavy-duty and pickup trucks, farm tractors, earth-moving equipment, and military vehicles. Research papers presenting results on analysis, optimization, and control of vehicle mobility and survivability, energy/fuel efficiency, stability and handling, smoothness of ride, and braking properties. ,

Organizers - Tjong T. Lie; Vladimir V. Vantsevich, Lawrence Technological Univ.

Time	Paper No.	Title
7:30 a.m.	2010-01-1897	AWD Vehicle with Individual Wheel Input Power Control: Dynamics and Ecological Properties Improvement Sergey B. Shukhman, Vladimir E. Malyarevich, NAMI-Service Innovation Firm
8:00 a.m.	2010-01-1895	Kinematic Discrepancy Minimization for AWD Terrain Vehicle Dynamics Control Vladimir Vantsevich, Lawrence Technological Univ; Klaus Augsburg, Barys Shyrokau, Valentin Ivanov, Ilmenau Technical Univ
8:30 a.m.	2010-01-1899	Combining Hybrid Electric Technology with Multi-axle Drivelines Alexander Kovnat, U.S. Army TARDEC
9:00 a.m.	2010-01-1896	Mathematical Modeling Software Series of Vehicle Propulsion System Vehicle Road Wheel/Sprocket Tractive Effort Milad H. Mekari, TACOM/RDECOM/TARDEC/GVPM/Engine Research; Bashir Mekari, US Army TACOM
9:30 a.m.	ORAL ONLY	Driver's Preview Strategy and its Impact on NATO Double Lane Change Maneuver Jesse Gander, Xiaobo Yang, Oshkosh Corporation
	2010-01-1898	Experimental Research on Stability of an Off-Road Vehicle on Deformable Surfaces (Written Only -- No Oral Presentation) Jaroslaw Pytka, Univ. of Lublin

Planned by Chassis and Suspension Group / Commercial Vehicle Activity

Wednesday, October 6

Recent Advances in Chassis and Suspension

Session Code: CV208

Room 5

Session Time: 1:00 p.m.

This session will include presentations by distinguished panelists from the original equipment manufacturers, suppliers, and government agencies. The purpose of the session is to discuss some of the recent advanced technologies in the area of commercial vehicle chassis and suspensions. The panelist will make a brief presentation of the technologies that their organization is involved with, and answer questions from the audience at the end of the session.

Organizers - Brendan Chan, Bendix Commercial Vehicle Systems LLC; Tjong T. Lie; Brian M. Southern, Volvo Trucks North America

Time	Paper No.	Title
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1:00 p.m.	2010-01-1912	Cost Effective High Strength Electric Resistance Welded Tubes For Structural Applications <i>Hariharan Venkatraman, Pallav Bhadauria, Tata Motors, Ltd.</i>
1:30 p.m.	2010-01-1914	Dynamic Analysis of Snow Falling from Roof of Cab on Cowl Tray with Equation of State Defined for Snow <i>Mahender Singh, Navistar</i>
2:00 p.m.	2010-01-1911	Analysis and Control of Displacement Transmissibility and Force Transmissibility for a Two DOF Model Based on Quarter Car Concept using a Mixed Mode Magnetorheological Fluid Mount <i>Shuo Wang, Mohammad Elahinia, University of Toledo; The Nguyen, University of Minnesota Duluth; Walter Anderson, University of Toledo; Constantin Ciocanel, Northern Arizona University</i>
2:30 p.m.	2010-01-1910	Comparison of a Hydraulic Engine Mount to a Magnetorheological Engine Mount <i>Walter Anderson, Shuo Wang, University Of Toledo; The Nguyen, Univ of Minnesota - Duluth; Constantin Ciocanel, Northern Arizona University; Mohammad Elahinia PhD, University Of Toledo</i>
	2010-01-1913	Optimal Control of Ride Comfort of a Passenger Car: Comparison between the Hydro Active and the Fully Active Suspension Systems (Written Only -- No Oral Presentation) <i>Ehsan Sarshari, Ali Khaki Sedigh, Hossein Sadati, K. N. Toosi University of Technology</i>

Planned by Chassis and Suspension Group / Commercial Vehicle Activity

Wednesday, October 6

Testing and Experimental Analysis of Chassis and Suspension (Part 1 of 2)

Session Code: CV207

Room 6

Session Time: 7:30 a.m.

Experimental studies are extremely valuable in better understanding the vehicle systems and sub-systems. Through testing and laboratory work one can substantially improve the design and performance of a vehicle, as well as validate computer models or theoretical assumptions. Examples of topics include experimental studies for trailer design, experimental testing for hybrid electric buses, tire-road pressure studies for heavy-vehicles.

Organizers - Brad Bean, Fame Automotive; Corina Sandu, Virginia Tech.

Time	Paper No.	Title
7:30 a.m.	2010-01-1906	A New Approach to Evaluate Wear on Automotive Leaf Spring Suspension Bushes <i>G. Raghvendra, Suresh Dasari, Tata Motors Ltd</i>
8:00 a.m.	2010-01-1908	The Limitations of Fatigue Testing <i>Gregory A. Fett, Dana Corporation</i>
8:30 a.m.	2010-01-1904	Performance Characterization and Modeling of Shim Stack Assemblies in Vehicle Shock Absorbers <i>Alireza Farjoud, Mehdi Ahmadian, Virginia Tech</i>
9:00 a.m.	2010-01-1909	Residual Stress Analysis of Punched Holes in 6013 Aluminum Alloy Commercial Vehicle Side Rails <i>Tory Smith, Jeremy Rickli, Virginia Polytechnic Inst & State Univ; Sean Fleming, Metalsa; Jaime Andres Camelio, Virginia Polytechnic Inst & State Univ</i>

Planned by Chassis and Suspension Group / Commercial Vehicle Activity

Wednesday, October 6

Testing and Experimental Analysis of Chassis and Suspension (Part 2 of 2)

Session Code: CV207

Room 6

Session Time: 1:00 p.m.

Experimental studies are extremely valuable in better understanding the vehicle systems and sub-systems. Through testing and laboratory work one can substantially improve the design and performance of a vehicle, as well as validate computer models or theoretical assumptions. Examples of topics include experimental studies for trailer design, experimental testing for hybrid electric buses, tire-road pressure studies for heavy-vehicles.

Organizers - Brad Bean, Fame Automotive; Corina Sandu, Virginia Tech.

Time	Paper No.	Title
1:00 p.m.	2010-01-1915	Optimization of Off-Road Mobility and Handling by Anti-Roll Bar Deletion and Shock-Up Tuning on Military Vehicle: A Case Study Vinay Upadhyay, Arun Prakash T. M., Zoeb Karampurwala, Kamaljeet Nandkeolyar, Tata Motors Ltd

Planned by Chassis and Suspension Group / Commercial Vehicle Activity

Wednesday, October 6

Advanced Chassis Control & Rollover

Session Code: CV206

Room 6

Session Time: 4:45 p.m.

This session, organized by the SAE Chassis & Suspension Committee, provides a technical discussion platform on one of the current popular topics in automotive engineering: advanced control systems for enhancing stability and safety of road vehicles, especially heavy vehicles. It includes various chassis control systems, vehicle roll dynamics and stability control, handling performance and directional stability.

Organizers - Brad Bean, Fame Automotive; Benjamin Duprey; Saied Taheri, Virginia Polytechnic Inst. & State Univ.

Time	Paper No.	Title
4:45 p.m.	2010-01-1902	Evaluation of Full and Partial Stability Systems on Tractor Semi Trailer Using Hardware-in-the-Loop Simulation Brendan Chan, Bendix Commercial Vehicle Systems LLC
5:15 p.m.	2010-01-1903	A Comparison of a Semi-Active Inerter and a Semi-Active Suspension Xinjie Zhang, Jilin University; Mehdi Ahmadian, Virginia Tech; Konghui Guo, Jilin University
5:45 p.m.	2010-01-1901	Yaw Stability Control and Emergency Roll Control for Vehicle Rollover Mitigation Brad Hopkins, Saied Taheri, Mehdi Ahmadian, Virginia Tech; Alexander Reid, US Army RDECOM-TARDEC

Planned by Chassis and Suspension Group / Commercial Vehicle Activity

Wednesday, October 6

Electronic Control Module Development and Test

Session Code: CV405

Room 7

Session Time: 1:00 p.m.

This session involves technical topics related to the testing of Electronic Control Modules. Various test methods, for the validation of control software will be discussed, such as open-loop and Hardware in-the Loop Simulation.

Organizers - Chad W. Harnish, dSPACE Inc.

<i>Time</i>	<i>Paper No.</i>	<i>Title</i>
1:00 p.m.	2010-01-1994	A New Passive Interface to Simulate On-Vehicle Systems for Direct-to-Module (DTM) Engine Control Module (ECM) Data Recovery Brian M. Boggess, Ashley Dunn, Douglas Morr, Timothy Martin, Anthony Cornetto, Fawzi Bayan, SEA, Ltd.
1:30 p.m.	ORAL ONLY	Modular Electronic Controller System Design Anna J. Murray, Axiomatic Technologies
2:00 p.m.	2010-01-1995 ORAL ONLY	Vehicle Dynamics Simulation for Developing Predictive Longitudinal Dynamics Controllers Tino Schulze, dSPACE GmbH
	2010-01-1992	The Bus Monitoring and Fault Diagnosis System Design of Hybrid Vehicle Based on Embedded System (Written Only -- No Oral Presentation) Wei Sun, Jilin University

Planned by Electrical and Electronics Group / Commercial Vehicle Activity

Wednesday, October 6

Vehicle Electrical Architecture

Session Code: CV410

Room 7

Session Time: 4:45 p.m.

While electronics are key in addressing emission and operating economics challenges, system cost, quality, and operator training are becoming pressing concerns. A flexible electrical and electronic architecture presents opportunities to address these concerns including the ability to implement integrated control functions for better operator efficiency. This session provides a forum to discuss benefits of a flexible architecture, successful implementations, and technology trends.

Organizers - Wensi Jin, The MathWorks Inc.; Georg Sobczyk, Delphi Corp.

Panelists - Wensi Jin, MathWorks Inc.; Laurence Matola, Delphi Corp.; Robert Schwabel, General Motors LLC; Georg Sobczyk, Delphi Corp.; Jens Svensson, Volvo Powertrain; Bjorn Villing SR, Volvo 3P; Ron Zhang, Oshkosh Truck Corp.;

Planned by Electrical and Electronics Group / Commercial Vehicle Activity