

SAE 2011 Noise and Vibration Conference and Exhibition Technical Session Schedule

As of 05/22/2011 07:40 pm

Monday, May 16

Science Fair Display (Monday - Wednesday) Exhibition Hall C

Session Code: NVCSF

Room Exhibit Hall

Session Time:

"The Science of Vehicle NVH: Materials, Innovations & Technology" </p>

The Science Fair will feature hands-on displays, video demonstrations and collections of acoustical materials and testing equipment. From damping to sound barriers, absorbers, sealing, isolation and more, the fair will provide a sound learning experience. Be sure to visit the Science Fair Display and vote for the display that is Best of Show. Winner will be announced during the Wednesday Keynote Luncheon.</p>

The following will be on display:

Organizers - David B. Reed, Janesville Acoustics

Time

Paper No.

Title

ORAL ONLY **Display: The Effects of Material Compression on Absorption Properties**

Marie Coverdale, 3M

ORAL ONLY **Display: Absorption of Acoustic Materials**

Jian Pan, Rieter Automotive North America Inc.

ORAL ONLY **Display: Barbie The Acoustician: Various Tests using a Reverberation Room**

Pranab Saha, Kolano and Saha Engineers Inc.

ORAL ONLY **Display: Recycled Materials in Acoustical Materials**

Diane Church, Janesville Acoustics

ORAL ONLY **Display: Transmission Loss Comparison of Various Materials**

Norio Sugawara, 3M

ORAL ONLY **Display: The Old-The New - The Reliable: Acoustical Instrumentation through the Years (OSU Spectrum Analyzer Museum - Hillquist Collection)**

Pranab Saha, Kolano and Saha Engineers Inc.; David B. Reed, Janesville Acoustics

ORAL ONLY **Display: General Motors Binuaral Sound Quality Technique: Circa 1952-1975**

James P. Shedlowsky; Wade R. Bray, HEAD Acoustics Inc.

ORAL ONLY **Display: Insulation of Acoustical Materials**

Art Ingraham, Rieter Automotive North America Inc.

Monday, May 16

Written Only

Session Code: NVC999

Room TBD

Session Time:

Time

Paper No.

Title

951375

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Application of Noise Control and Heat Insulation Materials and Devices in the Automotive Industry (Written Only -- No Oral Presentation)

Timothy Hirabayashi, General Motors Corp.; David McCaa, CertainTeed Corp.; Robert Rebandt, Ford Motor Co.; Phillip Rusch, Harley-Davidson Motor Co.; Pranab Saha, Kolano and Saha Engineers, Inc.; SAE Acoustical Materials Committee; SAE Thermal Materials Committee

* Previously published and/or presented at the Noise & Vibration Conference & Exposition

Tuesday, May 17

Materials (Part 1 of 3)

Session Code: NVC300

Room Gallery Overlook A&B

Session Time: 10:00 a.m.

This session will cover materials used to solve noise and vibration problems in vehicles. Topics covered will include new and traditional NVH materials, materials with unique or special NVH properties, case studies covering applications of NVH materials to solve specific vehicle problems, modeling of materials, manufacturing or processing of NVH materials, and engineering and design principles for the use of NVH materials.

Organizers - Steven R. Sorenson, Aearo Co.; Jason T. Kunio, Bruel & Kjaer North America Inc.; Jian Pan, Rieter Automotive North America Inc.; David B. Reed, Janesville Acoustics; Pranab Saha, Kolano and Saha Engineers Inc.; Barry Wyerman, Janesville Acoustics

Chairpersons - Jian Pan, Rieter Automotive North America Inc; Steven Sorenson, Aearo Co; David Reed, Janesville Acoustics

Time	Paper No.	Title
10:00 a.m.	2011-01-1623	Application of Micro-Perforated Composite Acoustic Material to a Vehicle Dash Mat Alan V. Parrett, Chong Wang, Xiandi Zeng, David Nielubowicz, Mark Snowden, General Motors; Jonathon H. Alexander, Ronald Gerdes, 3M Corp; Bill Leeder, Charles Zupan, Janesville Acoustics
10:20 a.m.	2011-01-1626	Random Incidence Absorption and Transmission Loss Testing and Modeling of Microperforated Composites Jonathan Alexander, 3M Co; David Reed, Janesville Acoustics; Ronald Gerdes, 3M Co
10:40 a.m.	2011-01-1627	Effect of Contamination on Acoustic Performance of Microperforated Panels J. Liu, D. W. Herrin, University of Kentucky
11:00 a.m.	2011-01-1625	A Comparative Study on Sound Transmission Loss and Absorption Coefficient of Acoustical Materials John G. Cherng, Univ. of Michigan-Dearborn; Qian Xi, Pravansu Mohanty, University of Michigan; Gordon Ebbitt, Carcoustics USA Inc
11:20 a.m.	2011-01-1634	Density Optimization of Underhood Sound Absorber Applications Michael Dinsmore, Acoustical Consulting Services; Richard Bliton, Precision Fabrics Group, Inc.; Scott Perz, Map of Easton, Inc.
11:40 a.m.	2011-01-1629	Transmission Loss Analysis through Porous Laminated Glass using Transfer Matrices Saurabh Suresh, Jeff Kastner, Teik Lim, Univ of Cincinnati

Tuesday, May 17

Materials (Parts 2 & 3 of 3)

Session Code: NVC300

2:30 p.m.

Room Gallery Overlook A&B

Session Time:

This session will cover materials used to solve noise and vibration problems in vehicles. Topics covered will include new and traditional NVH materials, materials with unique or special NVH properties, case studies covering applications of NVH materials to solve specific vehicle problems, modeling of materials, manufacturing or processing of NVH materials, and engineering and design principles for the use of NVH materials.

Organizers - Steven R. Sorenson, Aearo Co.; Jason T. Kunio, Bruel & Kjaer North America Inc.; Jian Pan, Rieter Automotive North America Inc.; David B. Reed, Janesville Acoustics; Pranab Saha, Kolano and Saha Engineers Inc.; Barry Wyerman, Janesville Acoustics

Chairpersons - Jason Kunio, Bruel & Kjaer North America Inc; Pranab Saha, Kolano and Saha Engineers Inc.; David Reed, Janesville Acoustics

Time	Paper No.	Title
2:30 p.m.	2011-01-1622	Acoustical Performance of Baffle Design Options for Water Management Ray Helferty, Walid Omar, Philip Weber, Sika Corp
2:50 p.m.	2011-01-1624	Evaluation of Acoustic Performance of Expandable Foam Baffles and Correlation with Incab Noise Prasanth B, Sachin Wagh, David Hudson, TATA Motors Technical Centre, Pune India
3:10 p.m.	2011-01-1628	Modeling the Stiffness and Damping Properties of Styrene-Butadiene Rubber Hejie Lin, Oakland Univ.; Turgay Bengisu, General Motors LLC; Zissimos Mourelatos, Oakland Univ
3:30 p.m.	2011-01-1621	Microcellular Polyurethane (MCU) for NVH Solutions Frank Friedrich, BASF
3:50 p.m.		Networking and Refreshment Break
4:20 p.m.	2011-01-1633	Damping Mass Effects on Panel Sound Transmission Loss Chong Wang, Alan Parrett, General Motors LLC
4:40 p.m.	2011-01-1736	Varying the Polyurethane Foam Ratio for Better Acoustic Performance and Mass Savings Gang Glenn Yin, General Motors LLC; Tariq Sami Oweimreen, Jan Ladewig, HP Pelzer Auto Systems Inc.
5:00 p.m.	2011-01-1632	Measuring Damping Loss Factors of High Performance LASD Coatings Ion Pelinescu, PPG Industries; Andrew Christie, PPG Industries - Germany

Tuesday, May 17

Active Noise and Vibration

Session Code: NVC302

Room Gallery Overlook C&D

Session Time: 10:00 a.m.

This session addresses the strategies and methods for implementing active noise and vibration control in a vehicle. It will cover sensors and transducers, feedback systems, control algorithms, software for active control, noise and vibration cancellation devices, noise and vibration measurement systems, and case studies.

Organizers - Mohamad S. Qatu, Mississippi State Univ.; Thomas L. Lagö; Marie Coverdale, 3M

Chairpersons - Thomas Lago; Marie Coverdale, 3M

Time	Paper No.	Title
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10:00 a.m.	2011-01-1635	Active Control of Gear Mesh Dynamics <i>Mingfeng Li, Jie Duan, Teik Lim, Univ of Cincinnati</i>
10:20 a.m.	2011-01-1640	Production Integration of Active Noise Control Systems in Working Locomotives - Challenges and Benefits <i>Daniel J. Maguire PhD, Technofirst SA/TechnoFirst USA; Kathleen Reilly, Electro-Motive Diesel Inc; Christian Carme PhD, TechnoFirst SA</i>
10:40 a.m.	2011-01-1639	Progress on Active Exhaust Silencers for Gasoline Engines <i>Jan Krueger, J. Eberspaecher GmbH Germany; Michael Pommerer, Eberspaecher; Tom Frei, Eberspaecher North America Inc</i>
11:00 a.m.	2011-01-1636	A Study on Active Hydraulic Engine Mount to Reduce Interior Car Noise and Vibration over Wide Frequency Band <i>Chiharu Togashi PhD, Isuzu Advanced Engineering Center, Ltd.; Mitsuo Nakano PhD, Tokyo University of Technology; Masao Nagai PhD, Tokyo University of Agriculture and Technology</i>
	2011-01-1637	Simulation of Noise Reduction in Passenger Trains Using Metal Foams (Written Only -- No Oral Presentation) <i>Ahad Khezerloo, Student, M. sc; Amin owhadi Esfahani PhD, Iran University of Science and Technolog; Sina Jalily Ing, Khajeh Nasir University</i>

Tuesday, May 17

Student Paper Competition

Session Code: NVCSPC

Room Gallery Overlook C&D

Session Time: 1:50 p.m.

The goal of the paper competition is to provide students who are the lead author and presenter of a paper in a regular technical session with an opportunity for additional exposure and practice in giving a technical presentation in front of judges and their peers. Each paper competition entrant will be judged on (1) paper quality according to standard SAE paper evaluation criteria, (2) effectiveness of the judged oral presentation, and (3) participant responses and discussion during Q & A followup. Undergraduate and graduate students are eligible to participate. Cash prizes and recognition will be awarded to the top three entries during the Wednesday luncheon of the conference.

Organizers - Chadwyck Musser, Cambridge Collaborative Inc.

Time	Paper No.	Title
1:50 p.m.	ORAL ONLY	SAE Paper: 2011-01-1629 Transmission Loss Analysis through Porous Laminated Glass using Transfer Matrices <i>Saurabh Suresh</i>
2:10 p.m.	ORAL ONLY	SAE Paper: 2011-01-1533 Novel, Compact Devices for Reducing Fluid-Borne Noise <i>Nicholas Earnhart, Georgia Institute of Technology</i>
2:30 p.m.	ORAL ONLY	SAE Paper: 2011-01-1548 Dynamics of Coupled Non-linear Hypoid Gear Mesh and Time-varying Bearing Stiffness Systems <i>Junyi Yang</i>
2:50 p.m.	ORAL ONLY	SAE Paper: 2011-01-1688 Application of Boundary Characteristic Orthogonal Polynomials on Vibration of Circular Plates with Circular Eccentric Holes <i>Khodabakhsh Saeedi</i>
3:10 p.m.	ORAL ONLY	SAE Paper: 2011-01-1681 In-vehicle Speech Intelligibility for the Hearing Impaired Using Speech Intelligibility Index <i>Nikolina Samardzic</i>

3:30 p.m.	ORAL ONLY	SAE Paper: 2011-01-1670 Reconstruction of Vibro-Acoustic Responses of a Complex Vibrating Structure using Helmholtz Equation Least Squares Logesh kumar Natarajan
3:50 p.m.		Networking and Refreshment Break
4:20 p.m.	ORAL ONLY	SAE Paper: 2011-01-1559 Numerical Simulation of Diesel Particulate Filters in Exhaust Systems Xin hua
4:40 p.m.	ORAL ONLY	SAE Paper: 2011-01-1720 Simulation of Airborne Path Attenuation of Partial Enclosures Limin Zhou
5:00 p.m.	ORAL ONLY	SAE Paper: 2011-01-1726 Noise and Vibration Phenomena of On-Line Electric Vehicle[®] Eun Gyeong Shin, Kaist
5:20 p.m.	ORAL ONLY	SAE Paper: 2011-01-1527 Prediction of Surge in a Turbocharger Compression System vs. Measurements Rick D. Dehner

Tuesday, May 17

Structural Analysis: Engine / Powertrain (Part 1 of 2)

Session Code: NVC100

Room Gallery Overlook F

Session Time: 10:00 a.m.

The focus of the Structural Analysis session is to share experiences on analyzing, testing, and developing solutions to structural noise and vibration problems from powertrain sources. Analytical modeling, experimental testing and predictive correlation are just a few of the tools used in this endeavor.

Organizers - Deane Jaeger, HARLEY-DAVIDSON; Robert F. Hand, Redbud Technology Group; Christopher Morgan, Autoliv ASP

Time	Paper No.	Title
10:00 a.m.	2011-01-1509	A Study on Shudder in Automatic Transmission Lock-up Clutch Systems and Its Countermeasures Takahiro Ryu, Oita University; Kenichiro Matsuzaki, Kyushu University; Takashi Nakae, Toyama National College of Technology; Atsuo Sueoka, Kyushu University; Yoshihiro Takikawa, Yoichi Ooi, Aisin AW Co.,LTD; Daisuke Nakagoshi, Yuichiro Hirai, Oita University
10:20 a.m.	2011-01-1502	CAE Techniques for System Analysis of Hypoid Gearset Vibration Brian K. Wilson, Romax Technology Inc.; Glen Peterson, Dana Holding Corporation; Amey Kulkarni, Ashish Kanase, Romax Solutions Pvt. Ltd.
10:40 a.m.	2011-01-1504	Sensitivity of Using Geometrically Incompatible Boundary Elements in Muffler and Silencer Analysis Limin Zhou, Jiawei Liu, Tim Wu, Univ. of Kentucky
11:00 a.m.	2011-01-1511	CAE Methodology for Optimizing NVH, Functional Reliability, and Mass Reduction at Engine Concept Design Phase Takahiro Mochihara, Ryusaku Sawada, Toyota Motor Corporation; Takumi Jinmon, Venkat Deshpande, Toyota Motor Engineering & Mfg NA, Inc.

11:20 a.m. 2011-01-1505 **Structural Optimization Method and Techniques to Reduce Radiation Noise**
Iku Kosaka, Juan Pablo Leiva, Brian Watson, Phani Adduri, Vanderplaats R&D Inc.; Takanori Ide, Aisin AW Co Ltd

Tuesday, May 17

Structural Analysis: Engine / Powertrain (Part 2 of 2)

Session Code: **NVC100**

Room Gallery Overlook F

Session Time: **2:30 p.m.**

The focus of the Structural Analysis session is to share experiences on analyzing, testing, and developing solutions to structural noise and vibration problems from powertrain sources. Analytical modeling, experimental testing and predictive correlation are just a few of the tools used in this endeavor.

Organizers - *Deane Jaeger, HARLEY-DAVIDSON; Robert F. Hand, Redbud Technology Group; Christopher Morgan, Autoliv ASP*

Time	Paper No.	Title
2:30 p.m.	2011-01-1500	Powerplant NVH Benchmarking <i>Joseph L. Stout, Ford Motor Co.</i>
2:50 p.m.	2011-01-1503	Radiated Noise Reduction in a Single Cylinder Direct Injection (DI) Naturally Aspirated (NA) Engine <i>Sudhakara Naidu T, Tata Motors, Ltd.; Chaitanya Krishna Balla, Tata Motors Ltd; Chris carlson, Tata Motors European Technical Centre pl; David Hudson, Tata Motors Ltd.</i>
3:10 p.m.	2011-01-1512	Front Loading NVH Test on the Highly Dynamic Powertrain Test Bed <i>Jaegon Yoo, Hyundai Motor Company; Klaus Pfeiffer, AVL LIST GmbH; Koo-Tae Kang, Hyundai Motor Company</i>
3:30 p.m.	2011-01-1501	Idle Combustion Stability Modeling <i>Joseph L. Stout, Ford Motor Co.</i>
	2011-01-1510	Improving Vehicle NVH Behavior via Tuning the Engine Mount Stiffness Using DOE Method (Written Only -- No Oral Presentation) <i>Arash Keshavarz, Mohsen Bayani Khaknejad, R&D center of SAIPA; Shahram Azadi, K N Toosi Univ of Technology</i>

Tuesday, May 17

Drive-By-Noise (Part 1 of 2)

Session Code: **NVC207**

Room Grand Gallery Room A

Session Time: **10:00 a.m.**

This session covers noise sources, measurement techniques, noise attenuation strategies, case studies, prediction and modeling methods, and community regulations related to drive-by noise.

Organizers - *Paul R. Donavan, Illingworth & Rodkin Inc.; Deane Jaeger, HARLEY-DAVIDSON; Richard F. Schumacher, RS Beratung LLC*

Time	Paper No.	Title
10:00 a.m.	2011-01-1607	Revised ISO 10844 Test Surface: Technical Principles <i>Douglas Moore, General Motors LLC</i>

10:20 a.m.	2011-01-1608	Vehicle Pass-by Noise Estimations for Component-Level Design Todd Freeman, Sound Answers Inc.; Gabriella Cerrato, Sound Answers Inc
10:40 a.m.	2011-01-1609	Time-Domain Source Contribution Analysis Method for In-Room Pass-By Noise Karl Janssens, Pieter Aarnoutse, Peter Gajdatsy, Laurent Britte, Filip Deblauwe, Herman Van der Auweraer, LMS International
11:00 a.m.	2011-01-1610	Synthesis of Drive-by Noise Based on Numerically Evaluated Source-Receiver Transfer Functions Employing the FMBEM Jacobus Huijssen, Katholieke Universiteit Leuven; Raphael Hallez, LMS International; Bert Pluymers, Katholieke Universiteit Leuven; Stijn Donders, LMS International; Wim Desmet, Katholieke Universiteit Leuven
11:20 a.m.	2011-01-1611	Drive by Noise System and Corresponding Facility Upgrades for Test Efficiency, Data Quality and Customer Satisfaction Dhanesh Purekar, Cummins Inc.
11:40 a.m.	2011-01-1612	Comparisons of Global Drive-By Noise Regulations and Levels for Medium and Heavy Duty Trucks Dan Faylor, Navistar Inc.

Tuesday, May 17

Drive-By-Noise (Part 2 of 2)

Session Code: NVC207

Room Grand Gallery Room A

Session Time: 2:30 p.m.

This session covers noise sources, measurement techniques, noise attenuation strategies, case studies, prediction and modeling methods, and community regulations related to drive-by noise.

Organizers - Paul R. Donovan, Illingworth & Rodkin Inc.; Deane Jaeger, HARLEY-DAVIDSON; Richard F. Schumacher, RS Beratung LLC

Time	Paper No.	Title
2:30 p.m.	2011-01-1614	Development of the J2825 On-Highway Motorcycle Sound Test Procedure Thomas C. Austin, Sierra Research, Inc.; Pamela Amette, Motorcycle Industry Council, Inc.; Christopher F. Real, DPS Technical, Inc.; John F. Lenkeit, Dynamic Research, Inc.
2:50 p.m.	2011-01-1613	Contributors to Lower Frequency Pass-by Noise Levels under Cruise Conditions Paul R. Donovan, Illingworth & Rodkin Inc.

Tuesday, May 17

Aerospace

Session Code: NVC802

Room Grand Gallery Room A

Session Time: 4:20 p.m.

This session is devoted to NVH issues arising within the aeronautical and aerospace industries, such as community noise, aircraft interior noise, aerospace vibro-acoustics, noise prediction, modeling and modal analysis.

Organizers - Christian M. Fernholz, Ford Motor Co.; Todd Eric Rook, Goodrich Aircraft Wheel & Brake

Time	Paper No.	Title
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- 4:20 p.m. 2011-01-1734 **Energy Finite Element Analysis Developments for Vibration Analysis of Composite Aircraft Structures**
Nickolas Vlahopoulos, Univ. of Michigan; Noah Schiller, NASA; Sungmin Lee, University of Michigan
- 4:40 p.m. 2011-01-1733 **Development of a Large-Scale Microphone Array for Aircraft Jet Plume Noise Source Characterization**
Kurt Veggeberg, National Instruments; Michael James, Blue Ridge Research and Consulting

Tuesday, May 17

Windnoise and Aeroacoustics

Session Code: *NVC208*

Room *Grand Gallery Room B*

Session Time: *10:00 a.m.*

This session is to present numerical and experimental work on noise due to flow around the vehicle body, such as flow-induced interior noise, flow over protrusions, sunroofs, windows, noise from ventilation systems, or flow noise in exhaust systems. Papers on aerodynamics alone without sound are excluded. Numerical studies may include new models or models based on existing theory as long as they are adequately supported by experimental or theoretical verifications.

Organizers - *Robert E. Powell, Exa Corporation; Alice Botteon Rodrigues, General Motors*

Chairpersons - *Robert Powell, Exa Corporation*

<i>Time</i>	<i>Paper No.</i>	<i>Title</i>
<i>10:00 a.m.</i>	<i>2011-01-1617</i>	Design of a Quiet Inlet for a 6×6 Boundary Layer Flow Duct <i>T.S. Miller, Spirit AeroSystems Inc; S.W. Lee, G. Holup, J.M. Gallman, M.J. Moeller, Spirit AeroSystems Inc.</i>
<i>10:20 a.m.</i>	<i>2011-01-1618</i>	Measurement of Exterior Surface Pressures and Interior Cabin Noise in Response to Vehicle Form Changes <i>George Chaoying Peng, Jaguar Land Rover</i>
<i>10:40 a.m.</i>	<i>2011-01-1620</i>	A Computational Approach to Evaluate the Vehicle Interior Noise from Greenhouse Wind Noise Sources - Part II <i>Anna Graf, David Lepley, Nissan Technical Center NA; Sivapalan Senthoooran, Exa Corporation</i>
<i>11:00 a.m.</i>	<i>2011-01-1619</i>	Whistle Map: A Hybrid Method of Whistle Prediction <i>Shi Zheng, Chris Kleinfeld, Tenneco Inc.</i>
<i>11:20 a.m.</i>	<i>2011-01-1615</i>	Investigation of Airflow Induced Whistle Noise by HVAC Control Doors Utilizing a V-Shapeζ Rubber Seal <i>Darius Kurniawan, Valeo Climate Control Inc.; Eric Rogers, Kettering University</i>

Tuesday, May 17

Buzz, Squeak and Rattle

Session Code: *NVC204*

Room *Grand Gallery Room B*

Session Time: *2:30 p.m.*

This session is focused on the vehicle body interior noise issues caused by friction and/or impact due to the vibration of interfacing components. The papers in this session will investigate those issues through the best practice of analytical and experimental applications.

Organizers - *Ivanna G. Malinow, TRW Occupant Safety Systems Inc.; Ganesh Narasimhan, TRW Automotive US LLC*

Chairpersons - *Ivanna Malinow, TRW Occupant Safety Systems Inc*

<i>Time</i>	<i>Paper No.</i>	<i>Title</i>
2:30 p.m.	2011-01-1583	A Finite Element Method for Effective Reduction of Speaker-Borne Squeak and Rattle Noise in Automotive Doors Naga Narayana, NISSAN TECHNICAL CENTER NA
2:50 p.m.	2011-01-1585	Predicting the Acoustics of Squeak and Rattle P.J. Shorter, V. Cotroni, S. Chaigne, ESI Group; R.S. Langley, Univ. of Cambridge
3:10 p.m.	2011-01-1584	A Simplified Approach to Quantifying Gear Rattle Noise Using Envelope Analysis Christian M. Fernholz, Ford Motor Co.
3:30 p.m.	2011-01-1586	Drive Rattle Elastodynamic Response of Manual Automotive Transmissions Malika Perera, Loughborough University; Stephanos Theodossiades, Loughborough Univ.; Homer Rahnejat, Loughborough Univ; Patrick Kelly, Ford Werke AG

Tuesday, May 17

Vibro Acoustic Analysis (Part 1 of 2)

Session Code: NVC602

Room Grand Gallery Room C

Session Time: 10:00 a.m.

This session covers the relationships between vibration and noise that can be generated throughout the vehicle. Included in this session are modal vibration studies related to noise, vibration transfer paths throughout the vehicle, and coupling of vibration and acoustical modes. Both experimental and analytical approaches are included in this session.

Organizers - Taner Onsay, Chrysler Group LLC; Jay H. Kim, Univ. of Cincinnati; Y Charles Lu, Univ. of Kentucky; Patty Manning, Cambridge Collaborative Inc.

<i>Time</i>	<i>Paper No.</i>	<i>Title</i>
10:00 a.m.	2011-01-1708	Application of the Hybrid FE-SEA Method to Predict Sound Transmission Through Complex Sealing Systems Julio A. Cordioli, Federal University of Santa Catarina; Márcio Calçada, Teo Rocha, General Motors do Brasil (GMB); Vincent Cotroni, Phil Shorter, ESI Group
10:20 a.m.	2011-01-1710	Numerical Prediction of the Exhaust Noise Transmission to the Interior of a Trimmed Vehicle by Using the Finite/Infinite Element Method Diego d'Udekem, Masatake Saitoh, Benoit Van den Nieuwenhof, Free Field Technologies; Takashi Yamamoto, Nissan Motor Co Ltd
10:40 a.m.	2011-01-1713	On the Use of the Wave Based Technique for a Three-Dimensional Noise Radiation Analysis of Coupled Vibro-Acoustic Problems Jan Rejlek, Hans H. Pribsch, Virtual Vehicle Research and Test Center
11:00 a.m.	2011-01-1717	Improvements to Vehicle Interior Noise Simulation Easwaran Viswanathan, Siemens PLM Software Inc.; Mark Donley, Siemens PLM Software Inc
11:20 a.m.	2011-01-1719	An Efficient Modeling Approach for Mid-frequency Trim Effects Chong Wang, Sejoong Oh, Qijun Zhang, Kurt Schneider, General Motors LLC
11:40 a.m.	2011-01-1720	Simulation of Airborne Path Attenuation of Partial Enclosures L. Zhou, D. W. Herrin, University of Kentucky

Tuesday, May 17

Vibro Acoustic Analysis (Part 2 of 2)

Session Code: NVC602

Room Grand Gallery Room C

Session Time: 2:30 p.m.

This session covers the relationships between vibration and noise that can be generated throughout the vehicle. Included in this session are modal vibration studies related to noise, vibration transfer paths throughout the vehicle, and coupling of vibration and acoustical modes. Both experimental and analytical approaches are included in this session.

Organizers - *Taner Onsay, Chrysler Group LLC; Jay H. Kim, Univ. of Cincinnati; Y Charles Lu, Univ. of Kentucky; Patty Manning, Cambridge Collaborative Inc.*

Time	Paper No.	Title
2:30 p.m.	2011-01-1721	Demonstration of Vibro-Acoustic Reciprocity including Scale Modeling <i>J. Liu, L. Zhou, D. W. Herrin, University of Kentucky</i>
2:50 p.m.	2011-01-1723	Understanding the Effect of Spot-Weld/Bolt Joint Distribution on the Sound Radiation from Panel Structures <i>Xuefeng Zhang, Wen L. Li, Wayne State Univ.</i>
	2011-01-1715	Transmission Loss Prediction of Multilayered Components - A New Impedance Formulation to Take in Account Finite Structural Connection (Written Only -- No Oral Presentation) <i>Giovanni Visconte, Studio Visconte; Alessandro Fasana, Politecnico di Torino - DIMEC</i>
	2011-01-1722	Prediction of Structural Acoustic Radiation for Compressor Considering Airflow Pulsed Load (Written Only -- No Oral Presentation) <i>Lu shouwei, Feng huihua, Shang jiao, Zuo zhengxing, Beijing Institute of Technology</i>

Tuesday, May 17

Student Poster Competition

Session Code: NVCSPC

Room Grand Gallery Room C

Session Time: 2:30 p.m.

The goal of the poster competition is to provide students with marketing, communications, and industry networking experience. Each poster display will be judged on (1) a ten-minute presentation that clarifies, defines, explains, demonstrates, instructs, and teaches concepts and applications of noise and vibration engineering, and (2) the quality, effectiveness, reproducibility and portability of the display. Undergraduate students only are eligible to participate. Cash prizes and recognition will be awarded to the top three entries during the Wednesday conference luncheon. See the posters on display Exhibition Hall C.

Organizers - *Chadwyck Musser, Cambridge Collaborative Inc.*

Time	Paper No.	Title
	ORAL ONLY	Poster: Aircraft Interior Noise Cold Damping Tests <i>Josh Locke, Calvin College & Seminary</i>

Tuesday, May 17

Driveline (Part 1 of 4)

Session Code: NVC103

Room Grand Gallery Room D

Session Time: 10:00 a.m.

This session deals with analytical, computational and experimental studies of the dynamic response including noise and vibration of automotive driveline system and components. Typical topics of interests include, but not limited to, torque converters, gear noise, axle noise driveline system dynamics, transmission noise and vibrations, powertrain dynamics, transient dynamic response and propshaft balancing.

Organizers - *Teik C. Lim, Univ. of Cincinnati; Kiran Govindswamy, FEV Inc.; Mohamad S. Qatu, Mississippi State*

Univ.; Joseph L. Stout, Ford Motor Co.; In-Soo Suh, KAIST

Time	Paper No.	Title
10:00 a.m.	2011-01-1538	Effect of Road Excitations on Driveline Output Torque Measurements Gi-Woo Kim, Kyungpook National University; Joseph Kucharski, Gregory Pietron, Diana Yanakiev, Yuji Fujii, Ford Motor Company; Kon-Well Wang, The University of Michigan
10:20 a.m.	2011-01-1543	An Application of Variation Simulation - Predicting Interior Driveline Vibration Based on Production Variation of Imbalance and Runout Glenn A. Meinhardt, American Axle & Mfg Inc.; Zhaohui Sun, Glen Steyer, American Axle & Mfg Inc; Sankar sengupta, Oakland University
10:40 a.m.	2011-01-1556	Driveline Boom Interior Noise Prediction Based on Multi Body Simulation Thomas Wellmann, Kiran Govindswamy, FEV Inc.; Georg Eisele, FEV Motorentchnik
11:00 a.m.	2011-01-1541	Difficulties Encountered in the Correlation of Vehicle Response to Bench Testing of Driveline Gearboxes for NVH Attributes Steven Balistreri, Linamar Corp; Michael Browne, Linamar Corp.
11:20 a.m.	2011-01-1548	Dynamics of Coupled Nonlinear Hypoid Gear Mesh and Time-varying Bearing Stiffness Systems Junyi Yang, Teik Lim, Univ of Cincinnati
11:40 a.m.	2011-01-1539	Signal Analysis Techniques to Identify Axle Bearing Defects Giovanni Rinaldi, Sound Answers Inc.; Gino Catenacci, Ford Motor Company Fund; Todd Freeman, Paul Goodes, Sound Answers Inc

Tuesday, May 17

Driveline (Parts 2 & 3 of 4)

Session Code: NVC103

Room Grand Gallery Room D

Session Time: 2:30 p.m.

This session deals with analytical, computational and experimental studies of the dynamic response including noise and vibration of automotive driveline system and components. Typical topics of interests include, but not limited to, torque converters, gear noise, axle noise driveline system dynamics, transmission noise and vibrations, powertrain dynamics, transient dynamic response and propshaft balancing.

Organizers - Teik C. Lim, Univ. of Cincinnati; Kiran Govindswamy, FEV Inc.; Mohamad S. Qatu, Mississippi State Univ.; Joseph L. Stout, Ford Motor Co.; In-Soo Suh, KAIST

Time	Paper No.	Title
2:30 p.m.	2011-01-1558	Experimental Study of the Factors Affecting Transfer Case NVH Performance in 4-Lo Operation Mode Haris Ligata, Habib Rehman, James Rutter, Jason Ley, American Axle & Manufacturing
2:50 p.m.	2011-01-1553	6 Speed Automatic Transmission Vibration Magnitude Prediction and Whine Noise Improvement through Transmission System Modeling Won Shin, Romax Technology, Ltd.; Ashish Kanase, Romax Solutions Pvt Ltd.; Sungwook Hwang, Sangbum Baek, Hyutae Shim, Hyundai Motor Company; Seiwoong Oh, Romax Technology, ltd
3:10 p.m.	2011-01-1542	Two-stage Gear Driveline Vibration and Noise Changshui Zhou, ChanganFord Mazda Company; Shaobo Young, Ford Motor Co; Yongwei Tang, Changan Ford Mazda Motor Company

3:30 p.m.	2011-01-1550	Nonlinear Characteristics Study and Parameter Optimization of DMF-RS Wei Sun; Yinong Li; Jingying Huang
3:50 p.m.		Networking and Refreshment Break
4:20 p.m.	2011-01-1546	Vehicle Design for Robust Driveline NVH Due to Imbalance and Runout Using a Monte Carlo Process Mohamad S. Qatu, Mississippi State Univ.; Roger King, Mississippi State Univ; Rachel Wheeler, Omar Shubailat, Mississippi State university
4:40 p.m.	2011-01-1547	Attenuation of Driveline Vibrations through Tuning of Propeller Shaft Liners Zhaohui Sun, American Axle & Mfg Inc.; David Schankin, William Braun, Jason Ley, American Axle & Mfg Inc
5:00 p.m.	2011-01-1544	Torsional Analysis of Different Powertrain Configurations for Torque and Combustion Phase Evaluation Vittorio Ravaglioli, Univ. degli Studi di Bologna; Fabrizio Ponti, Univ degli Studi di Bologna; Federico Stola, Magneti Marelli Powertrain

Wednesday, May 18

Brakes

Session Code: NVC201

Room Gallery Overlook A&B

Session Time: 10:00 a.m.

This session provides a good overview of current issues and problem-solving activities in vehicle braking system noise. Braking noise is one of the highest dollars cost warranty issues for the automakers, and therefore, gets considerable attention. The papers of this session will describe both experimental and analytical programs of investigations related to this issue.

Organizers - James K. Thompson, NIOSH; Mohamed Khalid Abdelhamid, Robert Bosch LLC

Time	Paper No.	Title
10:00 a.m.	2011-01-1576	Friction Force Measurement at Brake Discs Stefan Bernsteiner, Daniel Wallner, Graz University of Technology
10:20 a.m.	2011-01-1575	Hot Judder - An Investigation of the Thermo-Elastic and Thermo-Plastic Effects during Braking John David Fieldhouse, Univ. of Huddersfield; David Bryant; Chris John Talbot, Univ. of Huddersfield
10:40 a.m.	2011-01-1577	The Influence of Pad Abutment on Brake Noise Generation John David Fieldhouse, Univ. of Huddersfield; David Bryant; Chris John Talbot, Univ. of Huddersfield
11:00 a.m.	2011-01-1579	Experimental and Analytical Investigation of Countermeasure against Squeal in Floating Type of Car Disc Brake Takashi Nakae, Toyama National College of Technology; Takahiro Ryu, Oita University; Atsuo Sueoka, Kyushu University
11:20 a.m.	2011-01-1574	The Development of a Global Brake Insulator Damping Measurement Procedure Eric Denys, Material Sciences Corporation

Wednesday, May 18

Mounts and Shock Absorbers

Session Code: NVC206

Room Gallery Overlook A&B**Session Time: 2:30 p.m.**

This session includes papers in the areas of static, dynamic, and fatigue characterization of elastomers, bushings, mounts and shock absorbers used in the mobility industry. Particular emphasis is given to new and innovative analysis and testing methodologies to quantify the non-linear properties of these systems in addition to the effects of temperature, frequency, and aging. Papers dealing with specific applications and case studies of existing methodologies are also welcome.

Organizers - Mohan Rao, Michigan Technological Univ.; Mohamad S. Qatu, Mississippi State Univ.

Chairpersons - Mohamad Qatu, Mississippi State Univ

Time	Paper No.	Title
2:30 p.m.	2011-01-1602	Simulating the Static and Dynamic Response of an Automotive Weatherstrip Component Christopher Hartley, Nissan Technical Center North America
2:50 p.m.	2011-01-1605	Design/Testing of Vibration Isolators for Reaction Wheel of Satellite based on Transmission Force Characterization YongHwa Heo, Kwang-joon Kim, NOVIC, Dept, of ME, KAIST; Shi-hwan Oh, Dae-kwan Kim, Ki-lyuk Yong, KARI; YoungMin Park, NOVIC, Dept, of ME, KAIST
	2011-01-1604	Finite Element Analysis of Light Vehicle Cab's Hydraulic Mount Based on Fluid-Structure Interaction Method (Written Only -- No Oral Presentation) Zhi-yong Chen, Guang-ming Wu, Wen-ku Shi, Jilin University; Qing-guo Wang, Teng Teng, FAW group corporation R&D center

Wednesday, May 18**Hybrid and Electric Vehicles****Session Code: NVC700****Room Gallery Overlook C&D****Session Time: 10:00 a.m.**

This session discusses the noise sources, noise signatures, noise control strategy, and NVH technology unique to electric and hybrid powered vehicles. It is intended to bring a greater awareness of the NVH characteristics of these new vehicles to all NVH practitioners. At the same time, it will provide a forum so that advances in power systems, drive trains, batteries, and energy storage can be addressed with appropriate NVH technology as needed.

Organizers - Saeed Siavoshani, Dow Chemical; Barry Wyerman, Janesville Acoustics; In-Soo Suh, KAIST; Gregory W. Hopton, AVL Instrumentation & Test System Inc.

Time	Paper No.	Title
10:00 a.m.	2011-01-1728	Sound Character of Electric Vehicles Kiran Govindswamy, FEV, Inc.; Georg Eisele, FEV Motorentchnik
10:20 a.m.	2011-01-1724	Electric Motor Noise in a Lightweight Steel Vehicle Juliette Florentin, Francois Durieux, LMS International; Yukihisa Kuriyama, Toyoki Yamamoto, Nippon Steel Corp
10:40 a.m.	2011-01-1726	Noise and Vibration Phenomena of On-Line Electric Vehicle Eun Gyeong Shin, KAIST; Michael Ahlswede, Christopher Muenzberg, TU Berlin; In-Soo Suh, KAIST; Ferhat Engel, TU Berlin
11:00 a.m.	2011-01-1545	NVH Considerations for Zero Emissions Vehicle Driveline Design Chi La, Ricardo Inc.; Marco Poggi, Ricardo; Patrick Murphy, Ricardo Inc; Ondrej Zitko, Ricardo Prague

11:20 a.m.	2011-01-1725	Detection of Hybrid and Quiet Vehicles by Blind and Visually Impaired Pedestrians Jay Pliskow, Koorosh Naghshineh, Robert Wall Emerson, Dae Kim, Kyle Myers, Western Michigan University
11:40 a.m.	2011-01-1727	An Initial Study to Develop Appropriate Warning Sound for a Luxury Vehicle Using an Exterior Sound Simulator Ashley Gillibrand, Iain Suffield, Xavier Vinamata, Jaguar Land Rover; Roger Williams, Andreas Brückmann, NoViSim Ltd.

Wednesday, May 18

Interior Noise and Vibration Sources (Part 1 & 2 of 2)

Session Code: NVC205

Room Gallery Overlook C&D

Session Time: 2:30 p.m.

This session covers noise and vibration sources and paths within a vehicle (automobiles, trucks and recreational vehicles). Examples of noise sources included are HVAC system, electric motor powered mechanisms and door closure and example of vibration sources are road and engine. Also included are Whole Body and Hand Arm Vibration experienced by professional drivers as well as acoustical design factors of audio, infotainment, and hands free devices.

Organizers - Gabriella Cerrato, Sound Answers Inc.; Thomas L. Lagö; Prakash T. Thawani

Time	Paper No.	Title
2:30 p.m.	2011-01-1592	Practical Approach for Vehicle HVAC Noise Reduction and Comfort Improvement Ashish Tiwari, Tata Motors, Ltd.; Maneesh Arora, Tata Motors Ltd; Ravi Kumar, TATA Technologies Limited; David Hudson, Tata Motors, Ltd.
2:50 p.m.	2011-01-1599	Structure Borne Noise and Vibration Reduction of a Sports Utility Vehicle by Body-Mount Dynamic Stiffness Optimization Dhanaji Kalsule, TATA Motors Ltd,India; David Hudson, Tata Motors Ltd.; Yogesh Yeola, Jakir Bohari, Tata Motors Ltd,India
3:10 p.m.	2011-01-1600	Noise Contribution Analysis at Suspension Interfaces Using Different Force Identification Techniques Theo Geluk, Peter Van der Linden, LMS International; Davide Vige', Massimo Caudano, Simone Gottardi, Fabio Ciraolo, Fiat Group Automobiles; Hamid Mir, Chrysler Group LLC
3:30 p.m.	2011-01-1596	The Experimental Consideration of Booming Noise Subjected to Vehicle Speed Hiroshi Yamauchi, Mitsubishi Motors R&D of America Inc.
3:50 p.m.		Networking and Refreshment Break
4:20 p.m.	2011-01-1591	Simulations Based Approach for Vehicle Idle NVH Optimization at Early Stage of Product Development Kumbhar S. Mansinh, Atul Miskin, Vishal Vasantrao Chaudhari, Mahindra & Mahindra, Ltd.; Ashish Rajput, Mahindra & Mahindra Ltd
4:40 p.m.	2011-01-1595	Investing Factors Affecting Door Slam Noise of SUV and Improved Performance by DFSS Approach Rajesh Bhangale, Kumbhar S. Mansinh, Mahindra & Mahindra, Ltd.
5:00 p.m.	2011-01-1594	Fast, High Resolution Panel Noise Contribution Method Emiel Tijs, Jelmer Wind, Daniel Fernández Comesaña, Microflown Technologies BV

2011-01-1601

Investigating Parameters Influencing Interior Noise of a Vehicle and Ways of Improving It (Written Only -- No Oral Presentation)

Abolfazl Eskandari, Mostafa haghroosta, Kia Valefi, Automotive Industry

Wednesday, May 18

Intake / Exhaust (Part 1 of 4)

Session Code: NVC101

Room Gallery Overlook F

Session Time: 8:30 a.m.

This session covers experimental, computational, and analytical efforts related to the basic mechanisms and control techniques of noise and vibration in the breathing system (induction, combustion chamber, and exhaust) of naturally aspirated and supercharged/turbocharged engines. Noise sources include airborne, flow, flow-acoustic and flow-structure coupling.

Organizers - Ahmet Selamet, Ohio State Univ.; Raymond A. Kach, Ford Motor Co.; Norman Huff, Owens Corning; Christopher E. Shaw, Visteon Corp.

Time	Paper No.	Title
8:30 a.m.	2011-01-1520	A Study on the Acoustic Simulation for the Components of an Intake System ChulMin Park, Jihoon Jeong, Gihwan Kim, Dohyun Kim, Sang-il Lee, Hyunku Lee, Hyundai Motor Company
8:50 a.m.	2011-01-1525	Sound Transmission in Automotive Turbochargers Heiki Tiikoja, Hans Rämmal, Mats Abom, Hans Boden, KTH-CCGEx, Marcus Wallenberg Laboratory
9:10 a.m.	2011-01-1527	Prediction of Surge in a Turbocharger Compression System vs. Measurements Rick Dehner, Ahmet Selamet, Ohio State Univ; Philip Keller, Michael Becker, BorgWarner Inc

Wednesday, May 18

Intake / Exhaust (Part 2 of 4)

Session Code: NVC101

Room Gallery Overlook F

Session Time: 10:00 a.m.

This session covers experimental, computational, and analytical efforts related to the basic mechanisms and control techniques of noise and vibration in the breathing system (induction, combustion chamber, and exhaust) of naturally aspirated and supercharged/turbocharged engines. Noise sources include airborne, flow, flow-acoustic and flow-structure coupling.

Organizers - Ahmet Selamet, Ohio State Univ.; Raymond A. Kach, Ford Motor Co.; Norman Huff, Owens Corning; Christopher E. Shaw, Visteon Corp.

Time	Paper No.	Title
10:00 a.m.	2011-01-1526	Development and Application of 3D Generic Cells to the Acoustic Modelling of Exhaust Systems Gianluca Montenegro, Augusto Della Torre, Angelo Onorati, Politecnico di Milano; Robert Fairbrother, Andreas Dolinar, AVL LIST GmbH
10:20 a.m.	2011-01-1524	Linear Acoustic Modelling using 1-D Flow Systems which represent Complex 3-D Components Steven Amphlett, Ricardo UK Ltd.; Patrick C. Niven, Ricardo Inc.; Francisco Payri, Antonio J. Torregrosa, CMT. Universidad Politecnica de Valencia

10:40 a.m.	2011-01-1522	A Study on Acoustical Time-Domain Two-Ports Based on Digital Filters with Application to Automotive Air Intake Systems Magnus Knutsson, Johan Lennblad, Volvo Car Corporation; Hans Bodén, Mats Abom, KTH CICERO, MWL
11:00 a.m.	2011-01-1517	Direct Aeroacoustic Simulation of Flow Impingement Noise in an Exhaust Opening Robert E. Powell, Dena Hendriana, Exa Corporation; Brian Gutzeit, Kevin Golsch, Gregory Fadler, General Motors LLC
11:20 a.m.	2011-01-1521	Effect of Flow on Helmholtz Resonator Acoustics: A Three-Dimensional Computational Study vs. Experiments Emel Selamet, Ohio State Univ.; Ahmet Selamet, Ohio State Univ; Asim Iqbal, Hyunsu Kim, Ohio State Univ.
11:40 a.m.	2011-01-1529	Three-pass Perforated Tube Muffler with End-resonator Zhenlin Ji, Zhi Fang, Harbin Engineering University

Wednesday, May 18

Intake / Exhaust (Parts 3 & 4 of 4)

Session Code: NVC101

Room Gallery Overlook F

Session Time: 2:30 p.m.

This session covers experimental, computational, and analytical efforts related to the basic mechanisms and control techniques of noise and vibration in the breathing system (induction, combustion chamber, and exhaust) of naturally aspirated and supercharged/turbocharged engines. Noise sources include airborne, flow, flow-acoustic and flow-structure coupling.

Organizers - Ahmet Selamet, Ohio State Univ.; Raymond A. Kach, Ford Motor Co.; Norman Huff, Owens Corning; Christopher E. Shaw, Visteon Corp.

Time	Paper No.	Title
2:50 p.m.	2011-01-1515	A Note on the Interpretation of Acoustic Impedance in Confined Flows Mikael K. Karlsson, Swenox AB
3:10 p.m.	2011-01-1523	Mobility at the Development of Exhaust System Mauricio Monteagudo Galindo, Faurecia Emissions Control Technologies
3:50 p.m.		Networking and Refreshment Break
4:20 p.m.	2011-01-1519	Acoustic Characterization of Shallow Flow Reversal Chambers Morten Nils Lindborg, Mikael Karlsson, Swenox AB; Ragnar Glav, Scania AB; Tony Karlsson, Scania CV AB
4:40 p.m.	2011-01-1528	Analysis of Flow Induced Noise in a Passenger Car Exhaust System - An Experimental and Numerical Approach Deepak Rana, Felix Regin, Mohan Makana, Maruti Suzuki India Limited
	2011-01-1516	Acoustic Matching Simulation of Muffler with Hybrid Approach (Written Only -- No Oral Presentation) Sifa Zheng, ZhongXu Kang, XiaoMin Lian, Tsinghua Univ.
	2011-01-1735	The Control of the Interference Pattern From a Double Exhaust Tailpipe During a Motorcycle Pass-by Test: An Additional Free Muffler (Written Only -- No Oral Presentation) Pietro Vaccarino, Francesco Borsa, Piaggio

Wednesday, May 18

Instrumentation Systems, Sensors and Methods (Part 1 of 4)

Session Code: NVC401

Room Grand Gallery Room A

Session Time: 8:30 a.m.

This session covers instrumentation sensors, systems and methods used in the measurement and analysis of noise and vibration. Analysis methods internal to instrumentation will also be covered.

Organizers - Wade R. Bray, HEAD Acoustics Inc.; James M. Nieters, NVH Sensors to Solutions LLC

Time	Paper No.	Title
8:30 a.m.	2011-01-1650	Measurement Dynamic Range Considerations for Sound Transmission Loss Testing <i>Michael Dinsmore, Acoustical Consulting Services</i>
8:50 a.m.	2011-01-1653	Measurement of Sound Transmission Loss Properties in Single & Multi-layered Systems - A Comparative Study between Two-room and Standing Wave Tube Techniques <i>Kent K.H. Fung, Xiaochuan Li, Wuxi Jixing Acoustic Auto Parts Co., Ltd; Wei Huang, Wuxi Jixing Acoustic Auto Parts Co Ltd; Richard E. Wentzel, Wuxi Jixing Acoustic Auto Parts Co., Ltd.; Keda zhu, Wuxi Jixing Acoustic Auto Parts Co Ltd</i>
9:10 a.m.	2011-01-1658	Multi Frequency Swept Sine Testing for Automotive Durability Testing of Engine Mounted Components <i>Thomas Joseph Reilly, Data Physics</i>

Wednesday, May 18

Instrumentation Systems, Sensors and Methods (Part 2 of 4)

Session Code: NVC401

Room Grand Gallery Room A

Session Time: 10:00 a.m.

This session covers instrumentation sensors, systems and methods used in the measurement and analysis of noise and vibration. Analysis methods internal to instrumentation will also be covered.

Organizers - Wade R. Bray, HEAD Acoustics Inc.; James M. Nieters, NVH Sensors to Solutions LLC

Time	Paper No.	Title
10:00 a.m.	2011-01-1660	Engine Fault Detection Using Vibration Signal Reconstruction in the Crank-Angle Domain <i>Ilenkaran Arasaratnam, Saeid Habibi, McMaster University; Christopher Kelly, Tony J. Fountaine, Jimi Tjong, University of Windsor</i>
10:20 a.m.	2011-01-1649	Signal Processing Parameters for Estimation of the Diesel Engine Combustion Signature <i>Andrew J. Morello, Jason R. Blough, Jeffrey Naber, Libin Jia, Michigan Technological University</i>
10:40 a.m.	2011-01-1662	Measuring and Comparing Frequency Response Functions of Torque Converter Turbines Submerged in Transmission Fluid <i>Chad Walber, Michigan Technological Univ; Jason R. Blough, Michigan Technological Univ.; Mark Johnson, Carl Anderson, Michigan Technological Univ</i>
11:00 a.m.	2011-01-1651	An Accurate Measurement of Rotation Velocity-Eliminating Measurement Errors Caused by Gear Tooth Shape Unevenness <i>Hideo Suzuki, Takashi Nakashima, Hirokazu Tatekawa, Hisanobu Mizukawa, A & D Co., Ltd.; Michael H. Smith, A&D Technology Inc.</i>

- 11:20 a.m. 2011-01-1663 **Determining Physical Properties for Rotating Components Using a Free-Free Torsional FRF Technique**
Darrell Robinette, Michael Grimmer, Randall Beikmann, General Motors Company
- 11:40 a.m. 2011-01-1652 **Modal Testing and Shaker Excitation: Setup Considerations and Guidelines**
Marco A. Peres, Richard W. Bono, Modal Shop, Inc.

Wednesday, May 18

Instrumentation Systems, Sensors and Methods (Parts 3 & 4 of 4)

Session Code: NVC401

Room Grand Gallery Room A

Session Time: 2:30 p.m.

This session covers instrumentation sensors, systems and methods used in the measurement and analysis of noise and vibration. Analysis methods internal to instrumentation will also be covered.

Organizers - Wade R. Bray, HEAD Acoustics Inc.; James M. Nieters, NVH Sensors to Solutions LLC

Time	Paper No.	Title
2:30 p.m.	2011-01-1656	Automated Identification of NVH- Phenomena in Vehicles Albers Albert, Alexander Schwarz, Research
2:50 p.m.	2011-01-1659	A Pragmatic Approach to Production NVH Test of Seat Adjusters Michael Albright, Signal.X Technologies LLC; Kurt Veggeberg, National Instruments
3:10 p.m.	2011-01-1665	Sensation and Measurement of Low and Very Low Frequency Time-Varying Sounds in Accordance with the Very Short Impulse Response of Low-Frequency Human Hearing Wade R. Bray, HEAD Acoustics Inc.
3:30 p.m.	2011-01-1654	Advanced Tire Noise Pass by Noise Solution Meets ISO 13325 and the Recently Updated ISO 362 Standards Timothy J. Copeland, INCE, m+p International Inc.; Richard S. Wilhoit, Cooper Tire and Vehicle Test Center
3:50 p.m.		Networking and Refreshment Break
4:20 p.m.	2011-01-1661	Reciprocal Measurements of Transfer Functions for Auralization Roland Sottek, Head acoustics GmbH
4:40 p.m.	2011-01-1664	A Scanning Method for Source Visualization and Transfer Path Analysis Using a Single Probe Daniel Fernández Comesaña, Jelmer Wind, Microflown Technologies BV
5:00 p.m.	2011-01-1657	Advanced Source Localization Techniques Using Microphone Arrays Sandro Guidati, Roland Sottek, Head acoustics GmbH

Wednesday, May 18

SEA (Statistical Energy Analysis) Design (Part 1 of 2)

Session Code: NVC601

Room Grand Gallery Room B

Session Time: 8:30 a.m.

This session provides a good overview of recent innovations to SEA modeling techniques. SEA models can be used alone or together with hybrid analytical or experimental techniques to establish good comparative NVH predictions at the earliest stage of the vehicle design process. The papers of this session will describe recent advances and / or validations of SEA theory, applications, or use in conjunction with hybrid techniques for high- and mid-frequency NVH predictions.

Organizers - Chadwyck Musser, Jerome E. Manning, Cambridge Collaborative Inc.; Mark Moeller, Spirit AeroSystems Inc.; Jian Pan, Rieter Automotive North America Inc.; Alan V. Parrett, General Motors LLC

Time	Paper No.	Title
8:30 a.m.	2011-01-1703	A Hybrid Method to Predict the Distribution of Vibro-Acoustic Energy in Complex Built-Up Structures Dmitrii N. Maksimov; Gregor Tanner
8:50 a.m.	2011-01-1704	Design of Rotorcraft Gearbox Foundation for Reduced Vibration and Increased Crashworthiness Characteristics Nickolas Vlahopoulos, Univ. of Michigan; Geng Zhang; Ricardo Sbragio
9:10 a.m.	2011-01-1700	Hybrid Technique for Underbody Noise Transmission of Wind Noise Philippe Moron, Exa Corporation; Andreas Hazir, FKFS; Bernd Crouse, Robert Powell, Barbara Neuhierl, Exa Corporation; Jochen Wiedemann, FKFS

Wednesday, May 18

SEA (Statistical Energy Analysis) Design (Part 2 of 2)

Session Code: NVC601

Room Grand Gallery Room B

Session Time: 10:00 a.m.

This session provides a good overview of recent innovations to SEA modeling techniques. SEA models can be used alone or together with hybrid analytical or experimental techniques to establish good comparative NVH predictions at the earliest stage of the vehicle design process. The papers of this session will describe recent advances and / or validations of SEA theory, applications, or use in conjunction with hybrid techniques for high- and mid-frequency NVH predictions.

Organizers - Chadwyck Musser, Jerome E. Manning, Cambridge Collaborative Inc.; Mark Moeller, Spirit AeroSystems Inc.; Jian Pan, Rieter Automotive North America Inc.; Alan V. Parrett, General Motors LLC

Time	Paper No.	Title
10:00 a.m.	2011-01-1707	SEA Wind Noise Load Case for Ranking Vehicle Form Changes George Chaoying Peng, Jaguar Land Rover
10:20 a.m.	2011-01-1706	Improvement of an SEA Model of Cab Interior Sound Levels Through Use of a Hybrid FE/SEA Method Ignatius Vaz, ESI North America; Karl Washburn, John Deere Moline Technology Innovation; Loren DeVries, John Deere Worldwide Product Development
10:40 a.m.	2011-01-1701	Improving SEA Predictions with Experimental Data Tongan Wang, John Maxon, Gulfstream Aerospace Corporation
11:00 a.m.	2011-01-1705	Prediction of Vehicle Interior Sound Pressure Distribution with SEA Chadwyck Musser, Cambridge Collaborative Inc.; Jerome Manning, Cambridge Collaborative Inc.; George Chaoying Peng, Jaguar Land Rover

Wednesday, May 18

Heavy Duty Truck / Off-Highway

Session Code: NVC800

Room Grand Gallery Room B**Session Time: 2:30 p.m.**

This session covers noise and vibration in heavy trucks and buses and all other off-road vehicles. Special attention will be focused on the noise and vibration problems found in these vehicles, as opposed to passenger cars and light trucks, and to the engineering solutions required to solve these problems. Included in the session are discussions of special measurement methods, modeling specifically directed to these vehicles, and NVH materials with special properties to address unique problems.

Organizers - *Peter A. Jackson, American Acoustical Products Inc.; Craig Birkett, FREIGHTLINER LLC; Charles T. Moritz, Blachford Inc.; Pranab Saha, Kolano and Saha Engineers Inc.*

Time	Paper No.	Title
2:30 p.m.	2011-01-1729	Identification and Reduction of Booming Noise on a Motor Grader <i>Jiantie Zhen, Chunhui Pan, Ashish Jangale, Brad Salisbury, Caterpillar Inc.</i>
2:50 p.m.	2011-01-1730	Vibro-Acoustic Source-Path-Receiver approach to Identifying and Troubleshooting in an Agricultural Tractor Mode Coupling Issue <i>Glenn Pietila, Sound Answers Inc.; Gabriella Cerrato, Sound Answers Inc; Brad Tadlock, Brian Kascht, Shawn Entriken, AGCO Corp</i>
3:10 p.m.	2011-01-1732	Obtaining Structure-Borne Input Power for a SEA Model of an Earthmoving Machine Cab <i>David Copley, Caterpillar Inc.; D. W. Herrin, University of Kentucky; Harvind Raman, Jiantie Zhen, Caterpillar Inc</i>
3:30 p.m.	2011-01-1731	Case Study of Pass-By Noise Development on a Class 8 Truck <i>Steven R. Sorenson, Steven Jorro, E-A-R Thermal/Acoustic Systems; James Knittel, HEAD Acoustics Inc; Christopher Waltenberry, Navistar Inc</i>

Wednesday, May 18**Tires****Session Code: NVC202****Room Grand Gallery Room B****Session Time: 4:20 p.m.**

This session includes papers regarding vehicle exterior or interior tire/pavement noise.

Organizers - *Paul R. Donovan, Illingworth & Rodkin Inc.; Richard F. Schumacher, RS Beratung LLC; Saeed Siavoshani, Dow Chemical*

Time	Paper No.	Title
4:20 p.m.	2011-01-1580	Determination of Interior NVH Levels from Tire/Wheel Variations using a Monte Carlo Process <i>Mohamad S. Qatu, Mississippi State Univ.; Roger King, Mississippi State Univ; Omar Shubailat; Rachel Wheeler</i>
4:40 p.m.	2011-01-1581	Modeling and Experimental Verification of Vibration and Noise Caused by the Cavity Modes of a Rolling Tire under Static Loading <i>Z. C. Feng, University of Missouri; Perry Gu, Fisker Automotive, Inc.</i>
5:00 p.m.	2011-01-1582	Challenges for Tire Noise Evaluation on Common Pavements <i>Paul R. Donovan, Illingworth & Rodkin Inc.; Alan Parrett, Dave Nielubowicz, Jinshuo Zhu, General Motors Company</i>

Wednesday, May 18**Structural Analysis: Numerical Methods (Part 1 of 2)****Session Code: NVC600****Room Grand Gallery Room C****Session Time: 8:30 a.m.**

This session focuses on the development and application of analytical methods for characterizing the dynamic behavior of structural systems. Analysis methods for all structural components, subsystems and complete systems found in automotive vehicles will be considered, except for powertrain and driveline which are covered in Powertrain Structural Analysis session. Examples include (but are not limited to) body structure, chassis structure, seats and interior structures.

Organizers - Gregory M. Goetchius, *Tesla Motors Inc.*; Christopher E. Shaw, *Visteon Corp.*

Time	Paper No.	Title
8:30 a.m.	2011-01-1691	Vibration Transmission Analysis of Automotive Body for Reduction of Booming Noise <i>Nobutaka Tsujiuchi, Takayuki Koizumi, Takuya Nagao, Doshisha Univ; Ichiro Kido, Masato Hashioka, Toyota Technical Development Corporation</i>
8:50 a.m.	2011-01-1692	Vehicle Interior Noise and Vibration Reduction Method Using Transfer Function of Body Structure <i>Seigo Yamamoto, Norimasa Kobayashi, Hiroo Yamaoka, Toyota Motor Corporation</i>
9:10 a.m.	2011-01-1690	Tire and Road Input Modeling for Low-Frequency Road Noise Prediction <i>Ichiro Kido, Sagiri Ueyama, Masato Hashioka, Toyota Technical Development Corporation; Seigo Yamamoto, Minoru Tsuchiyama, Hiroo Yamaoka, Toyota Motor Corporation</i>

Wednesday, May 18

Structural Analysis: Numerical Methods (Part 2 of 2)

Session Code: NVC600

Room Grand Gallery Room C

Session Time: 10:00 a.m.

This session focuses on the development and application of analytical methods for characterizing the dynamic behavior of structural systems. Analysis methods for all structural components, subsystems and complete systems found in automotive vehicles will be considered, except for powertrain and driveline which are covered in Powertrain Structural Analysis session. Examples include (but are not limited to) body structure, chassis structure, seats and interior structures.

Organizers - Gregory M. Goetchius, *Tesla Motors Inc.*; Christopher E. Shaw, *Visteon Corp.*

Time	Paper No.	Title
10:00 a.m.	2011-01-1695	The Prediction of Fuel Sloshing Noise Based on Fluid-Structure Interaction Analysis <i>Jong-Suh Park, Seung-Chan Choi, Seok-Gil Hong, Hyundai Motor Company</i>
10:20 a.m.	2011-01-1697	Finite Element Model for Spot Welds Using Multi-Point Constraints and its Dynamic Characteristics <i>Fumiyasu Kuratani, Kazuhei Matsubara, Takashi Yamauchi, University of Fukui</i>
10:40 a.m.	2011-01-1696	Modeling of Stiffened Panels Using the Energy Finite Element Analysis <i>Nickolas Vlahopoulos, Univ. of Michigan; Ricardo Sbragio; Aimin Wang, Univ of Michigan</i>
11:00 a.m.	2011-01-1688	Application of Boundary Characteristic Orthogonal Polynomials on Vibration of Circular Plates with Circular Eccentric Holes <i>Khodabakhsh Saeedi, Concordia University; Alfin Leo, Camfil Farr Canada Inc.; Rama Bhat, Ion Stiharu, Concordia University</i>
11:20 a.m.	2011-01-1689	FEM Evaluation of Elastic Wedge Method for Damping of Structural Vibrations at Low Frequencies <i>Jose Javier Bayod, IHI Corp.</i>

- 11:40 a.m. 2011-01-1693 **A FE Based Procedure for Optimal Design of Damping Package, with Presence of the Insulation Trim**
Luca Guj, Theophane Courtois, Claudio Bertolini, Rieter Automotive Management AG
- 2011-01-1694 **Research on Simulation Method of Spot-weld Based on Vehicle Modal Analysis (Written Only -- No Oral Presentation)**
Hai sheng Song, Wen ku Shi, College of Automobile jilin univ; Yan long, FAW-volkswagen

Wednesday, May 18

Body Structure / Chassis

Session Code: NVC200

Room Grand Gallery Room C

Session Time: 2:30 p.m.

This session covers static and dynamic issues in the body and chassis that contribute to noise and vibration problems in vehicles. Included in this session are modal studies, measurement and analysis methods, transfer path analysis, design guidelines, and recommended practices for noise and vibration control of the body and chassis.

Organizers - Gregory W. Hopton, AVL Instrumentation & Test System Inc.; Christian M. Fernholz, Ford Motor Co.

Time	Paper No.	Title
2:30 p.m.	2011-01-1568	Pulley Optimization for Improved Steering Pump Airborne Noise Performance Christian Fernholz, Ronald Perri, David Watts, David Willmer, Jeff Williams, Ford Motor Company
2:50 p.m.	2011-01-1569	Dispersion of Test-Based NVH Characteristics at Various Trim Levels Andrzej Pietrzyk, Volvo Car Corporation
3:10 p.m.	2011-01-1573	Modeling the Vibrations of and Energy Distributions in Car Body Structures Wen L. Li, Wayne State University
3:30 p.m.	2011-01-1571	Transfer Function Analysis of Rear Multi-Link Suspension to Improve Ride Vibration and Road Noise Myung-Gyu Kim

Wednesday, May 18

Product Development Process

Session Code: NVC500

Room Grand Gallery Room D

Session Time: 2:30 p.m.

This session focuses on the development process used to achieve NVH goals and includes topics such as benchmarking, target setting, target cascading, the role and timing of simulation methods and test methods and cross functional coordination and optimization. Papers in this session will also explore the relevance and timing of component, subsystem and full system analysis and testing.

Organizers - Robert E. Powell, Exa Corporation; Pranab Saha, Kolano and Saha Engineers Inc.; Alan V. Parrett, General Motors LLC

Chairpersons - Pranab Saha, Kolano and Saha Engineers Inc

Time	Paper No.	Title
2:30 p.m.	2011-01-1676	Sound Power Troubleshooting Techniques Chris Moon, DJ Pickering, Sound Answers, Inc.; Tony Frazer, Bruel & Kjaer North America Inc; Chris Sievers, David Peffers, Vermeer Corporation

2:50 p.m.	2011-01-1675	Ease of Conversation Development Method for Passenger Vehicles <i>Ashwini Balasubramanian, Toyota Technical Center USA Inc.; Ian McGann, LMS Americas; Daniel Rauchholz, UGN Inc</i>
3:10 p.m.	2011-01-1674	Systematic Multi-Disciplinary Optimization of Engine Mounts <i>Magnus Olsson, Mikael Törmänen, Sylvain Sauvage, Catharina Hansen, Volvo Car Corporation</i>
3:30 p.m.	2011-01-1678	Vehicle Refinement Challenges for a Large Displacement Engine with Cylinder Deactivation Capability <i>Uday Senapati, Ian McDevitt, Aaron Hankinson, Bentley Motors Limited, Crewe, England</i>

Wednesday, May 18

Historical Perspectives

Session Code: NVC503

Room Grand Gallery Room D

Session Time: 4:20 p.m.

This session addresses a variety of subjects covering the historical development and evolution of NVH practices, unlike the other sessions which focus on specific areas of noise and vibration technology. These papers are from the more experienced practitioners of vehicle noise and vibration who will share with attendees their thoughts, concerns, and hopefully their wisdom, gained through many years of engineering practice.

Organizers - Mohamad S. Qatu, Mississippi State Univ.

Chairpersons - Pranab Saha, Kolano and Saha Engineers Inc

Time	Paper No.	Title
4:20 p.m.	2011-01-1687	NVH Challenges for Low Cost and Light Weight Small Cars <i>Sachin Wagh, Prasanth B, David Hudson, TATA Motors Technical Centre, Pune India</i>

Wednesday, May 18

Business Management Perspectives

Session Code: NVC501

Room Grand Gallery Room D

Session Time: 4:40 p.m.

This session focuses on the business side of NVH, including topics such as planning, organizing, staffing and managing NVH activities to optimize profitability and performance. Contributions from corporate management, small business owners, and project managers are a key part of the session. Topics to be highlighted include technology costs, facilities investment and payback, and future trends in the global NVH market.

Organizers - Barry Wyerman, Janesville Acoustics

Time	Paper No.	Title
4:40 p.m.	2011-01-1679	The Thought Process for Developing Sound Package Treatments for a Vehicle <i>Pranab Saha, Kolano and Saha Engineers Inc.</i>

Thursday, May 19

Diesel (Parts 1 & 2 of 2)

Session Code: NVC104

Room Gallery Overlook F

Session Time: 8:30 a.m.

The diesel NVH session is focused on issues related to making diesel engines achieve better NVH characteristics. Topics include both analytical and experimental techniques for developing low noise diesel engines and components. Related topics covered in this session include linear and torsional vibration of diesel engines, as well as features intended to reduce diesel specific intake and exhaust noise problems, such as turbocharger whine.

Organizers - Thomas Reinhart, SOUTHWESTT RESEARCH INSITUTE; Kalyan Singh Bagga, Navistar Inc.; Christopher E. Shaw, Visteon Corp.

Time	Paper No.	Title
8:30 a.m.	2011-01-1559	Numerical Simulation of Diesel Particulate Filters in Exhaust Systems X. Hua, J. Liu, D. W. Herrin, University of Kentucky; T. Elnady, Ain Shams University
8:50 a.m.	2011-01-1562	Investigation of the Acoustic Performance of After Treatment Devices Tamer Elnady, Sara Elsaadany, Ain Shams University; D. W. Herrin, University of Kentucky
9:10 a.m.	2011-01-1564	Simulation of the Sound Attenuation Properties in Highly Complex Exhausts System Using the 2-Port Technique Tony Karlsson, Ragnar Glav, Scania AB
9:30 a.m.		Networking and Refreshment Break
10:00 a.m.	2011-01-1563	Idle Sound Quality Development for Diesel V6 Engine Ki-Hwa Lee, Chung-Guen Nam, Hyung-Shin KIm, Dong-Kyu Yoo, Hyundai Motor Co.; Koo-Tae Kang, Hyundai Motor Co
10:20 a.m.	2011-01-1561	A Multi-Variable Experimental Study of Diesel Geartrain Rattle George Bailey, Douglas Fussner, Southwest Research Institute
10:40 a.m.	2011-01-1565	Vehicle NVH Prediction Technique for Engine Downsizing Jennifer Durfy, Ricardo Inc.; Sang-Bum Hong, Cummins, Inc.; Bibhu Mahanta, Cummins
11:00 a.m.	2011-01-1566	Noise Benchmarking of the Detroit Diesel DD15 Engine Thomas Reinhart, Mitchel Smolik, Southwest Research Institute
11:20 a.m.	2011-01-1560	Vibration Processing to Optimize Pressure Development in CR Diesel Engine Giancarlo Chiatti, Erasmo Recco, Ornella Chiavola, ROMA TRE University

Thursday, May 19

Sound Source Identification (Parts 1 & 2 of 2)

Session Code: NVC402

Room Grand Gallery Room A

Session Time: 8:30 a.m.

This session covers sound source identification and localization, acoustical holography, sound generation mechanisms, measurement techniques related to the sound source and noise propagation, and visualization techniques for sound pressure levels, sound radiation patterns, frequency content, and intensity. Also included are prediction and modeling methods related to the sound source.

Organizers - Gary Newton, Bruel & Kjaer; Gabriella Cerrato, Sound Answers Inc.; Saeed Siavoshani, Dow Chemical

Chairpersons - Gary Newton, Bruel & Kjaer

Moderators - Gary Newton, Bruel & Kjaer

Time	Paper No.	Title
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8:30 a.m.	2011-01-1671	Improved Noise Source Identification Using Sound Quality Metrics Mapping in Vehicle Noise Measurements <i>Wookeun Song, Brüel & Kjaer Sound and Vibration A/S; Haruki Saito, Isuzu Motors Limited; Karim Haddad, Brüel & Kjaer Sound And Vibration A/S</i>
8:50 a.m.	2011-01-1672	ACOUSTOMIZE₂ A Method to Evaluate Cavity Fillers NVH & Sealing Performance <i>Saeed Siavoshani, Dow Chemical; Jim Frost, Ford Motor Co</i>
9:10 a.m.	2011-01-1668	Optimization of the Impulsiveness Performance of a Diesel Engine <i>Volker Grützmacher, Stéphane Richter, Adam Opel AG</i>
9:30 a.m.		Networking and Refreshment Break
10:00 a.m.	Panel	Panel Discussion: Advanced Noise Source ID Moderators - <i>Dhanesh Purekar, Cummins Inc.</i> Panelists - <i>Gunnar Heilmann, gfai tech GmbH; Robert E. Powell, EXA Corporation; Wookeun Song, Bruel & Kjaer Sound/Vib Meas A/S; Sean F. Wu, Wayne State Univ.;</i>
10:40 a.m.	2011-01-1669	Contribution Analysis in Pass-By Testing Using Moving Source Beamforming <i>Kevin Bernard Ginn, Bruel & Kjaer; Gary Newton, Bruel & Kjaer North America Inc.</i>
11:00 a.m.	2011-01-1670	Reconstruction of Vibro-Acoustic Responses of a Complex Vibrating Structure Using Helmholtz Equation Least Squares <i>Logesh Kumar Natarajan, Sandeep Mylavarapu, Sean F. Wu, Wayne State University, Detroit, MI</i>
11:20 a.m.	2011-01-1673	Scan and Paint for Acoustic Leakage Inside the Car <i>Andrea Grosso, Hans-Elias De Bree, Steven Steltenpool, Emiel Tijs, Microflown Technologies BV</i>
11:40 a.m.	2011-01-1667	Locating Multiple Incoherent Sound Sources in 3D Space in Real Time <i>Sean F. Wu, Na Zhu, Wayne State Univ.</i>

Thursday, May 19

Facilities

Session Code: NVC400

Room Grand Gallery Room B

Session Time: 10:00 a.m.

This session is focused on the development and application of facilities to conduct noise and vibration measurements. The intent is to provide practical information on the engineering challenges to consider in the construction and/or adaptation of a facility to the specialized noise and vibration requirements. In addition, standards for chambers and acoustics environments and their evaluation are discussed.

Organizers - *Richard F. Schumacher, RS Beratung LLC; Christopher Morgan, Autoliv ASP; James K. Thompson, NIOSH*

Time	Paper No.	Title
10:00 a.m.	2011-01-1641	Numerical Simulation of the Measurement of the Diffuse Field Absorption Coefficient in Small Reverberation Rooms <i>Claudio Bertolini, Luca Guj, Rieter Automotive Management AG</i>
10:20 a.m.	2011-01-1642	Design of a Self-Contained Acoustical Testing Facility <i>Richard A. Kolano, P.E., KOLANO & SAHA ENGINEERS INC</i>

10:40 a.m.	2011-01-1643	Spirit AeroSystems Acoustics Lab: Measurement and Analysis Capabilities <i>Mary Drouin, Mark Moeller, Judith Gallman, Gerard Holup, Teresa Miller, Sang Lee, Spirit AeroSystems Inc</i>
11:00 a.m.	2011-01-1647	Acoustic Test Facility Capabilities at Gulfstream Aerospace <i>Kristopher Lynch, John Maxon, Gulfstream Aerospace Corp</i>
11:20 a.m.	2011-01-1645	Practical Considerations of Driveline Vibration and Acoustic Test Cell with Case Study of McLaren's Driveline Dynamometers <i>Michael Browne, Linamar Corp.</i>
11:40 a.m.	2011-01-1644	Development of an Experimental Facility to Characterize Performance, Surge, and Acoustics in Turbochargers <i>Greg Uhlenhake, Ahmet Selamet, Kevin Fogarty, Ohio State Univ; Kevin Tallio, Ford Motor Co; Philip Keller, BorgWarner Inc</i>

Thursday, May 19

Subjective Response (Parts 1 & 2 of 2)

Session Code: NVC502

Room Grand Gallery Room C

Session Time: 8:30 a.m.

This session covers subjective testing and analysis related to automotive noise and vibration, usually referred to as sound quality and vibration quality. The focus is on both subjective and objective tools and methods that can be used either to design sound or vibration quality into the automotive product, or to characterize and eliminate undesired sounds or vibrations.

Organizers - Peter Laux, Acoustics by Design; Michael Blommer, Ford Motor Co.; Steven R. Sorenson, Aearo Co.

Time	Paper No.	Title
8:30 a.m.	2011-01-1681	In-vehicle Speech Intelligibility for the Hearing Impaired Using Speech Intelligibility Index <i>Nikolina Samardzic, Colin Novak, University of Windsor</i>
8:50 a.m.	2011-01-1685	Evaluation of Source and Path Contributions to Sound Quality Using Vehicle Interior Noise Simulation <i>Todd Tousignant, Kiran Govindswamy, Christian Leibling, FEV Inc</i>
9:10 a.m.	ORAL ONLY	Acceleration Noise Metric for Vehicles with CVT Transmission - Invited presentation from 2011 World Congress & SAE Paper# 2011-01-0150 <i>Eugene Gregory Taschuk, Farokh Kavarana, John DeYoung, Nissan Technical Center NA</i>
9:30 a.m.		Networking and Refreshment Break
10:00 a.m.	2011-01-1684	Impact Sound Evaluation Base on Two Dimensional Sound Indexes <i>Sang Kwon Lee, Inha Univ.; Byungkook Bae, Hyundai Mortor Company; Jongho Park, Inha Univ</i>
10:20 a.m.	2011-01-1686	Analysis of Determining Parameters of Acoustical Comfort Inside Vehicles <i>Oliver Jung, Volker Grützmacher, Adam Opel AG</i>
10:40 a.m.	ORAL ONLY	Development of Approaching Vehicle Sound for Pedestrians (VSP) for Quiet Electric Vehicles - Invited presentation from 2011 World Congress - SAE Paper# 2011-01-0928 <i>Heather Konet, NISSAN TECHNICAL CENTER NA; Manabu Sato, Todd Schiller, Andy Christensen, Nissan Technical Center NA; Toshiyuki Tabata, nissan motor company ltd.; Tsuyoshi Kanuma, nissan motor company ltd</i>

11:00 a.m. **ORAL ONLY** **Active Sound Design - Invited presentation from 2011 World Congress & SAE Paper# 2011-01-0927**
Jean-Pierre Bretaudeau, Hutchinson

Thursday, May 19

Components / Accessories (Parts 1 & 2 of 2)

Session Code: **NVC102**

Room Grand Gallery Room D

Session Time: **8:30 a.m.**

This session is focused on base engine, mounts, accessories, fuel injection system, combustion system, transmission related design or development noise and vibration topics. The papers of this session will have both experimental and analytical approaches to problem solving.

Organizers - *Kalyan Singh Bagga, Navistar Inc.; In-Soo Suh, KAIST; Prakash T. Thawani; Joachim Wolschendorf, FEV Inc.*

Time	Paper No.	Title
8:30 a.m.	2011-01-1532	Flow Noises Associated with Integrated Compressor Anti-Surge Valve <i>Charlie Teng, Fumin Pan, Jemai Missaoui, Scott Deraad, Ford Motor Co.</i>
8:50 a.m.	2011-01-1531	Derivation of the Force Interaction within Strongly Coupled Systems - Application to Diesel Engine Oil Pumps <i>Michael Thivant, Vibratec; pascal BOUVET PhD, VIBRATEC; Alexandre Carbonelli, Ecole Centrale de Lyon</i>
9:10 a.m.	2011-01-1533	Novel, Compact Devices for Reducing Fluid-Borne Noise <i>Nicholas Earnhart, Kenneth Marek, Kenneth Cunefare, Georgia Institute of Technology</i>
9:30 a.m.		Networking and Refreshment Break
10:00 a.m.	2011-01-1536	Single and Multiple Misfire Detection in Internal Combustion Engines Using Vold-Kalman Filter Order-Tracking <i>Mohammad Kazem Baghi Abadi, Iran Test & Research Auto Center; Ali Hajnayeb, Shahid Chamran University; Ali Hosseingholizadeh, Iran Test & Research Auto Center; Ahmad Ghasemloonia, Memorial University of Newfoundland</i>
10:20 a.m.	2011-01-1537	Gas Injector Rail Calibration and Diagnosis by Means of Vibroacoustic Signal <i>Bartosz Flekiewicz, Auto Gaz Slask; Marek Flekiewicz, Silesian Univ of Technology</i>
10:40 a.m.	2011-01-1535	Analytical Evaluation of Fitted Piston Compression Ring: Modal Behaviour and Frictional Assessment <i>Christopher Edward Baker, Homer Rahnejat, Ramin Rahmani PhD, Stephanos Theodossiades, Loughborough University</i>
11:00 a.m.	2011-01-1534	Experimental and Calculation Analysis of Rotational Vibration for an Engine Front End Accessory Drive System <i>Wen-Bin Shangguan, South China Univ. of Technology</i>
11:20 a.m.	2011-01-1530	Sound Metric Balance of Engine Cooling Fan Noise to enable Delivery of Good Exterior Sound Quality <i>Uday Senapati, Graham Evans, Aaron Hankinson, Bentley Motors Limited, Crewe, England</i>

