The NVH complexity challenge: achieving appealing 'green' vehicles
June 22-24, 2016
Graz / Austria

Program

Sessions:
• Engine, Transmission & Drivetrain NVH
• Structure-borne Sound Source Characterisation
• Vehicle and HVAC Aeroacoustics
• Intake and Exhaust NVH & Turbocharger Aeroacoustics
• Vehicle NVH
• NVH of HEVs & BEVs
• Active Control
• Noise Control Material Characterization and Modeling
• Powertrain Tribology and Contact Modeling
• Numerical NVH: Uncertainties, Robust Design, Optimization & Concept Modeling
• Noise Quality & Sound Design
• New Methodologies & Materials
Welcome to ISNVH 2016!

The NVH complexity challenge: achieving appealing ‘green’ vehicles

Driven by this challenge, international experts in the field of noise, vibration & harshness (NVH) will meet for the 9th International Styrian Noise, Vibration & Harshness Congress in Graz, Austria, from June 22-24, 2016.

We are witnessing continuous evolutions in automotive transmission technology characterized by a steadily increasing number of gear ratios combined with reduction of losses and dual clutch technology. And of course there is the “revolution” of alternative propulsion systems featuring many possible architectures and introducing new components.

This new scenario poses overwhelming challenges to the NVH engineer, who is faced with systems of exponentially growing complexity exhibiting new features with huge impact on the NVH performances. Still, new cars must be appealing and meet the customer’s taste and expectations with respect to comfort, fun to drive and brand sound signature.

Continuing the initiative of Acoustic Competence Centre in 1999, the VIRTUAL VEHICLE Research Center is now organizing this renowned congress for the ninth time in cooperation with its industrial partners AVL and MAGNA STEYR, as well as the International Society of Automotive Engineers (SAE International). During the last decade, the ISNVH congress has evolved into the premier European NVH event dedicated to mobility, taking place bi-annually in Graz (Austria) and Michigan (USA).

Sessions and workshops will be complemented by a technical exhibition presenting the latest simulation and experimental technologies. For up-to-date information on the sessions and workshops, please visit www.isnvh.com

We cordially invite you to participate in this international exchange of engineers and specialists from industry, research centers and universities all around the world!

We are looking forward to welcoming you in Graz!

Welcome to ISNVH 2016!

Hans H. Priebsch
Scientific Conf. Chair

Eugenius Nijman
Scientific Conf. Chair

Jost Bernasch
Conference Chair

Anton Fuchs
Conference Chair
Keynotes

**Henry Bensler**
Volkswagen AG

*An Overview of Vehicle Aeroacoustic Simulation at Volkswagen Group Research*

**Wim Desmet**
KU Leuven

*Model based virtual sensing techniques for robust NVH analysis and identification*

**Jürgen Kohler**
Daimler AG

*NVH Challenges in Modern Vehicle Development*

**Steffen Marburg**
TU München

*Identification of uncertain elastic and damping parameters of composite structures*

Sessions:

- Engine, Transmission & Drivetrain NVH
- Structure-borne Sound Source Characterization
- Vehicle and HVAC Aeroacoustics
- Intake and Exhaust NVH & Turbocharger Aeroacoustics
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- Noise Quality & Sound Design
- New Methodologies & Materials

Workshops:

- Robust Design, Uncertainties and Fuzzy Modeling
- Noise Quality of HEV Vehicles - Methodology & Modeling
- HVAC Acoustics
- Material Characterization & Modeling
Chairs & Committee

Conference Chair:
Jost Bernasch
CEO,
VIRTUAL VEHICLE, Austria
Anton Fuchs
Head of NVH & Friction
VIRTUAL VEHICLE, Austria

Scientific Conference Chair:
Eugenius Nijman
Scientific Head of NVH & Friction
VIRTUAL VEHICLE, Austria
Hans H. Priebsch
Scientific Consultant, NVH & Friction
VIRTUAL VEHICLE, Austria

Scientific Program Committee:
Mats Abom
KTH Stockholm, Sweden
Hannes Allmaier
VIRTUAL VEHICLE, Austria
Noureddine Atalla
Université de Sherbrooke, Canada
Stefan Becker
Friedrich Alexander University Erlangen-Nürnberg, Germany
Thilo Bein
Fraunhofer LBF, Germany
Jan-Welm Biermann
RWTH Aachen University, Germany
Henry-Paul Bensler
Volkswagen AG, Germany
Bernard Challen
Shoreham Services, Engineering Consultancy, Shoreham-by-Sea, UK
Christoph Fankhauser
MAGNA STEYR Fahrzeugtechnik, Austria
Leon Gavric
PSA Peugeot Citroën, France
Martin Grabenstein
BMW GROUP, Germany
Bernhard Graf
AVL List GmbH, Austria
Jeong-Guon Ih
Korea Advanced Institute of Science and Technology, Korea
Masao Ishihama
Automotive Technology Center Kanagawa Institute of Technology, Japan
Manfred Kaltenbacher
TU Vienna, Austria
Roberto Mangiantini
Fiat Chrysler, Italy
Matthew Maunder
Ricardo, UK
Eugenius Nijman (Chair)
VIRTUAL VEHICLE, Austria
Jörg Ocker
Dr. Ing. h.c.F. Porsche AG, Germany
Hans H. Priebsch (Co-Chair)
VIRTUAL VEHICLE, Austria
Detlef Schulze-Fehrenbach
Daimler AG, Germany
Antonio J. Torregrosa
Technical University of Valencia, Spain
Shanjin Wang
Renault SA, Paris, France

General Information:
The congress is organised by VIRTUAL VEHICLE Research Center, AVL List GmbH, MAGNA STEYR Fahrzeugtechnik AG & Co KG in cooperation with the Society of Automotive Engineers (SAE International).

Congress location: congress | graz
Sparkassenplatz 1
8010 Graz, AUSTRIA

Information and Online Registration: www.isnvh.com

Congress language: English

Congress office: VIRTUAL VEHICLE
Inffeldgasse 21A, 8010 Graz

Julia D’Orazio
Tel.: +43 (316) 873 9094
Fax: +43 (316) 873 9072
e-mail: julia.dorazio@v2c2.at

Coordinator SAE: Melissa Jena
SAE International
Warrendale, USA
# Program Overview

## Wed, June 22nd, 2016

<table>
<thead>
<tr>
<th>Start Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>13:00</td>
<td>Arrival &amp; Registration</td>
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<tr>
<td>13:30</td>
<td><strong>Workshops</strong>&lt;br&gt;Workshop 1: Robust Design, Uncertainties and Fuzzy Modelling&lt;br&gt;Chair: Christian Magele, TUGraz&lt;br&gt;Workshop 2: Noise Quality of HEV Vehicles - Methodology and Modelling&lt;br&gt;Chair: Alois Sontacchi, University of Music and Performing Arts Graz</td>
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<tr>
<td>15:45</td>
<td>Coffee Break</td>
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## Thu, June 23rd, 2016

<table>
<thead>
<tr>
<th>Start Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>08:00</td>
<td>Registration</td>
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<tr>
<td>08:45</td>
<td>Opening Session</td>
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<tr>
<td>19:30</td>
<td>Social Evening</td>
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## Fri, June 24th, 2016

<table>
<thead>
<tr>
<th>Start Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>08:30</td>
<td><strong>Sessions</strong> (cont.)&lt;br&gt;Sessions (cont.)&lt;br&gt;Keynote Lectures&lt;br&gt;Congress Summary&lt;br&gt;Farewell Lunch</td>
</tr>
<tr>
<td>12:30</td>
<td>Keynote Lectures</td>
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<tr>
<td>16:00</td>
<td>End of Congress</td>
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## Program

**Thu., June 23rd, 2016**

### Regular Session 9
**Congress Room 3**
**Powertrain Tribology & Contact Modelling**
Chair: Hannes Almaier, Virtual Vehicle

<table>
<thead>
<tr>
<th>Start Time</th>
<th>Session Title</th>
<th>Chair/Institution</th>
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<tbody>
<tr>
<td>10:40</td>
<td>16SNVH-0005 / 2016-01-1855</td>
<td>Piston Design for Optimizing Trade-off of Friction and NVH (Alastair Jay, Ricardo UK Ltd.)</td>
</tr>
<tr>
<td>11:05</td>
<td>16SNVH-0025 / 2016-01-1854</td>
<td>3d-Elastohydrodynamic Simulation Model for Structure-borne Noise Analyses of a DI Diesel Engine (Johannes Seifriedsberger, Graz Univ. of Technology)</td>
</tr>
<tr>
<td>11:30</td>
<td>16SNVH-0068 / 2016-01-1852</td>
<td>Efficiency and Durability Predictions of High Performance Racing Transmissions (Ehsan Fatourechi, Loughborough University)</td>
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<tr>
<td>12:20</td>
<td>Lunch Break</td>
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### Structured Session 4
**Congress Room 2**
**Intake and Exhaust NVH & Turbocharger Aeroacoustics**
Chair: Mats Åbom, KTH

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<th>Start Time</th>
<th>Session Title</th>
<th>Chair/Institution</th>
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<tbody>
<tr>
<td>10:40</td>
<td>16SNVH-0042 / 2016-01-1819</td>
<td>Compact High-Pressure Intake Silencer with Multilayer Porous Material (Antonio J. Torregrosa, Universitat Politècnica de València)</td>
</tr>
<tr>
<td>11:05</td>
<td>16SNVH-0099 / 2016-01-1810</td>
<td>Numerical Aeroacoustics Prediction of a Ducted Diaphragm Chaining RANS-LES and DES Results to a Parallel Boundary Element Method (Marie Escouffaire, ESI Group)</td>
</tr>
<tr>
<td>11:30</td>
<td>16SNVH-0032 / 2016-01-1817</td>
<td>Turbocharger Noise Quality Parameters for Efficient TC Noise Assessment and Refinement (Juergen Veit, AVL List GmbH)</td>
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### Invited Lecture

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<tr>
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<th>Chair/Institution</th>
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<tbody>
<tr>
<td>10:40</td>
<td>16SNVH-0001 / 2016-01-1781</td>
<td>System for Realistic Augmentation of Sporty Engine Sound Quality (Matthew Mauder, Ricardo UK Ltd.)</td>
</tr>
<tr>
<td>10:40</td>
<td>16SNVH-0046 / 2016-01-1820</td>
<td>Predicting Fluid Driven Whistles in Automotive Intake and Exhaust Systems (Mikael Karlsson, Escenda Engineering AB)</td>
</tr>
<tr>
<td>11:05</td>
<td>16SNVH-0010 / 2016-01-1845</td>
<td>Reduced-Order Robust Controller Design for Vibration Reduction (Xueji Zhang, Siemens Industry Software NV)</td>
</tr>
<tr>
<td>11:55</td>
<td>16SNVH-0105 / 2016-01-1844</td>
<td>Experimental Studies on Different Actuator-Sensor Configurations of Active Control Systems for the Reduction of Noise and Vibration in Vehicles (Jonathan Mittler, Fraunhofer Institute LBF)</td>
</tr>
</tbody>
</table>

### Regular Session 11
**Congress Room 3**
**Noise Quality and Sound Design**
Chair: Detlef Schulze-Fehrenbach, Daimler AG

### Structured Session 4 (cont.)
**Congress Room 2**
**Intake and Exhaust NVH & Turbocharger Aeroacoustics**
Chair: Antonio J. Torregrosa, UPV

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<tr>
<th>Start Time</th>
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<tbody>
<tr>
<td>13:40</td>
<td>16SNVH-0044 / 2016-01-1825</td>
<td>Virtual Formation of a Woofer at the Roof Panel of a Vehicle by Using Array Actuators (Jeong-Guon Ih, Korea Advanced Institute of Science)</td>
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### Lunch Break

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<tr>
<th>Start Time</th>
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### Structured Session 2
**Congress Room 4**
**Structure-borne Sound Source Characterisation**
Chair: Jean-Louis Guyader, INSA (Co-Chair: Eugene Nijman)
### Thu., June 23rd, 2016
#### 14:05
**16SNVH-0006 / 2016-01-1787**
**Advanced Analysis Techniques for NVH and Sound Quality Improvement**
Graeme Maclean, Ricardo UK Ltd.

**16SNVH-0051 / 2016-01-1818**
**Optimization of Compact Non-Fibrous Silencer for the Control of Compressor Noise**
Raimo Kabral, The Royal Inst. of Technology, KTH CCGEx

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<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker/Institution</th>
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<tbody>
<tr>
<td>14:30</td>
<td><strong>Engine Presence in Diesel Engine Passenger Cars</strong></td>
<td>Per Alenius, Volvo Car Corporation</td>
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<tr>
<td>14:55</td>
<td><strong>Coffee Break</strong></td>
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</tbody>
</table>

### Regular Session 11 (cont.)
**Congress Room 3**
**Noise Quality and Sound Design**
Chair: Detlef Schulze-Fahrenbach, Daimler AG

### Structured Session 4 (cont.)
**Congress Room 2**
**Intake and Exhaust NVH & Turbocharger Aeroacoustics**
Chair: Jeong-Guon Ih, KAIST

### 15:35
**16SNVH-00054 / 2016-01-1782**
**Technology of an Emotional Engine Sound Designing for Active Sound Control Using Order Balance and Musical Instrument Sound**
Kyoung-jin Chang, Hyundai Motor Co.

**16SNVH-0083 / 2016-01-1822**
**Directivity Measurements of Low Frequency Sound Field Radiated from an Open Cylindrical Pipe with a Hot Mean Flow**
Drasko Masovic, Virtual Vehicle Research Center

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker/Institution</th>
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<tbody>
<tr>
<td>16:00</td>
<td><strong>CFD Investigation of the Effect of Fluid-Structure Interaction on the Transmission Loss of ICE Silencers</strong></td>
<td>Angelo Onorati, Politecnico di Milano</td>
</tr>
<tr>
<td>16:25</td>
<td><strong>Damping of Acoustic Waves in Straight Ducts and Turbulent Flow Conditions</strong></td>
<td>Fabio Auriemma, Tallinn University of Technology</td>
</tr>
</tbody>
</table>

### Coffee Break

### EXHIBITOR PRESENTATIONS
**Congress Room 3**
Microflowm Technologies B.V.
Brüel&Kjaer GmbH

**Congress Room 2**
Dewesoft
HEAD Acoustics
ESI GmbH

### Structured Session 5 (cont.)
**Congress Room 1**
**Vehicle NVH**
Chair: Jan-Weim Biermann, RWTH Aachen

### Coffee Break

### EXHIBITOR PRESENTATIONS
**Congress Room 4**
Magna Steyr Engineering AG & CO KG
MSC Software GmbH

### Regular Session 12
**Congress Room 4**
**New Methodologies & Materials**
Chair: Marlin Grabenstein, BMW

### Invited Lecture
**Overview of the RIFF Technique: Source Identification, Defect Detection and in-situ Material Properties Measurement by Verification of the Local Motion Equation**
Charles Pezerat LAUM, University of Maine

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<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker/Institution</th>
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<tr>
<td>16:50</td>
<td><strong>Coffee Break</strong></td>
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### 16:00
**16SNVH-0104 / 2016-01-1815**
**Methodology to Study the Impact of the Exhaust System on the Vehicle Interior Noise - Identification and Target Setting**
Matthew Maunder, Ricardo UK Ltd.

**16SNVH-0010 / 2016-01-1826**
**Enhancement of Full-Vehicle Road Noise Simulation Including Detailed Road Surface and Innovative Tire Modeling**
Giorgio Bartolozzi, Centro Ricerche Fiat SAcP

### Coffee Break

### 16:25
**16SNVH-0106 / 2016-01-1816**
**A Noise Source Identification Method as an Analysis Support Technique to Improve NVH Performances of 3D Structures**
Sandra Forget, RENAULT SAS
### An Overview of Vehicle Aeroacoustic Simulation at Volkswagen Group Research

#### Noise Quality and Sound Design

**Intake and Exhaust NVH & Vehicle & HVAC Aeroacoustics**

**Chair:** Matthew Maunder, Ricardo

<table>
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<tr>
<th>Invited Lecture</th>
<th>16SNVH-0090 / 2016-01-1773</th>
<th>Global NVH Optimisation Methodologies for Modern Automotive Powertrains</th>
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</thead>
<tbody>
<tr>
<td>Shanjin Wang, RENAULT SAS</td>
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<tr>
<th>Structured Session 3</th>
<th>16SNVH-0023 / 2016-01-1809</th>
<th>Flow Induced Interior Noise Prediction of a Passenger Car</th>
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<tbody>
<tr>
<td>Chair: Jörg Ocker, Porsche AG</td>
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**New Methodologies & Materials**

**Chair:** Wim Desmet, KUL

<table>
<thead>
<tr>
<th>Regular Session 10</th>
<th>Congress Room 1</th>
<th>Num. NVH: Uncertainties, Robust Design, Optimisation &amp; Concept Modelling</th>
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</thead>
<tbody>
<tr>
<td>Chair: Christoph Fankhauser, Magna</td>
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**Regular Session 12 (cont.)**

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<th>Congress Room 4</th>
<th>New Methodologies &amp; Materials</th>
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<tr>
<td>Chair: Wim Desmet, KUL</td>
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**Microflown Technologies B.V.**

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**Structure Session 8**

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<tr>
<th>16SNVH-0013 / 2016-01-1761</th>
<th>Dynamic Substructuring for Sources Contributions Analysis in Internal Combustion Engines</th>
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<tbody>
<tr>
<td>Antonio Acri, AVL List GmbH, Virtual Vehicle Research Center</td>
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<table>
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<tr>
<th>16SNVH-0026 / 2016-01-1807</th>
<th>On the Possibilities and Limitations of Wind Noise Testing in the Aerodynamical Wind Tunnel at Volvo Cars</th>
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<tbody>
<tr>
<td>Olga Rodticheva, Volvo Car Corporation</td>
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<thead>
<tr>
<th>16SNVH-0064 / 2016-01-1779</th>
<th>Excellent Brake NVH Comfort by Simulation - Use of Optimization Methods to Reduce Squeal Noise</th>
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<tbody>
<tr>
<td>Sergio Canajal, INTES GmbH</td>
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**Social Evening at Schlossberg Restaurant**

*hosted by City of Graz (please register in advance)*

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Graz offers many impressive locations for events, including the Schlossberg Restaurant, the Kunsthaus aka „Friendly Alien“ or the White Hall at the Grazier Burg.
Fri., June 24th, 2016

<table>
<thead>
<tr>
<th>Start Time</th>
<th>Regular Session 1 (cont.)</th>
<th>Structured Session 3 (cont.)</th>
<th>Regular Session 6</th>
<th>Structured Session 8</th>
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<tbody>
<tr>
<td>08:30</td>
<td>Congress Room 3</td>
<td>Vehicle &amp; HVAC Aeroacoustics</td>
<td>NVH of HEVs &amp; BEVs</td>
<td>Congress Room 4</td>
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<td>Engine, Transmission</td>
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<td>Noise Control Material Characterisation &amp; Modelling</td>
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<td>&amp; Drivetrain NVH</td>
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<td>Chair: Nouredine Atalla, Université de Sherbrooke</td>
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<td>(Co-Chair: Jan Rejek)</td>
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<tr>
<td>08:30</td>
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<td>Invited Lecture</td>
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<tr>
<td>08:55</td>
<td>16SNVH-0072 / 2016-01-1770</td>
<td>Closed-Loop Control Method for Monitoring and Improving the Diesel Combustion Noise</td>
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<td>Insoo Jung, Hyundai Motor Company</td>
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<td>09:20</td>
<td>16SNVH-0074 / 2016-01-1774</td>
<td>Simultaneous Sound Power Measurement of Engine Components</td>
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<td>Gert Herold, Brandenburg, University of Technology</td>
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<tr>
<td>09:45</td>
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<td>Coffee Break</td>
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<tr>
<td>10:10</td>
<td>16SNVH-0055 / 2016-01-1763</td>
<td>Development of Fuel System Components through a Virtual NVH Prototyping - Focus on High Pressure Pumps</td>
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<td>Thierry Bourdon, Continental Automotive France</td>
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<tr>
<td>10:10</td>
<td>16SNVH-0087 / 2016-01-1765</td>
<td>Damping Effects Introduced by a Nonlinear Vibration Absorber in Automotive Drivelines at Idle Engine Speeds</td>
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<td>Eliot Motto PhD Wolfson School, Loughborough University</td>
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<td>10:35</td>
<td>16SNVH-0033 / 2016-01-1814</td>
<td>Acoustic Conception of an Automotive HVAC</td>
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<td></td>
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<td>Maxime Lagros, Celim</td>
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Coffee Break

Fri., June 24th, 2016

<table>
<thead>
<tr>
<th>Start Time</th>
<th>Regular Session 1 (cont.)</th>
<th>Structured Session 3 (cont.)</th>
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<tr>
<td>10:10</td>
<td>Congress Room 3</td>
<td>Vehicle and HVAC Aeroacoustics</td>
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<td>&amp; Drivetrain NVH</td>
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<td>Characterisation &amp; Modelling</td>
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<td>Invited Lecture</td>
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<td>Chair: Nouredine Atalla,</td>
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<td>Université de Sherbrooke</td>
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<tr>
<td>10:10</td>
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<td>Invited Lecture</td>
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<td>10:10</td>
<td>16SNVH-0093 / 2016-01-1804</td>
<td>Aero-Vibro-Acoustic Simulation of the Flow around a Car Induced Windnoise</td>
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<td>Stefan Becker, FAU Erlangen-Nürnberg</td>
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<td>10:35</td>
<td>16SNVH-0092 / 2016-01-1838</td>
<td>Acoustic Conception of an Automotive HVAC</td>
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<td>Maxime Lagros, Celim</td>
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<td>10:35</td>
<td>16SNVH-0076 / 2016-01-1841</td>
<td>Low Cost Possibilities for Automotive Range-Extender/Hybrid Electric Vehicles to Achieve Low CO2 and NVH Objectives</td>
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<td>Peter R. Hooper, Auckland University of Technology</td>
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<td>10:35</td>
<td>16SNVH-00021 / 2016-01-1849</td>
<td>Modelling Acoustic Trims in FEM, an Overview of the Different Simulation Methods</td>
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<td>Arnaud Caillet, ESI GmbH</td>
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<td>10:35</td>
<td>16SNVH-00023 / 2016-01-1814</td>
<td>Magnetostrictive and Magnetic Sources of Noise in the Electric Motors</td>
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<td>Janko Slavic, University of Ljubljana</td>
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<td>10:35</td>
<td>16SNVH-00073 / 2016-01-1848</td>
<td>Sensitivity Analysis of Noise Control Treatments</td>
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<td>Jean-Loup Christen, Airbus Defence and Space</td>
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<tr>
<td>Time</td>
<td>Start Time</td>
<td>Title</td>
<td>Speaker(s)</td>
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<td>11:00</td>
<td>16SNVH-0089 / 2016-01-1772</td>
<td>Stamped-Cover Vibro-Acoustic Optimization for Diesel Automotive Applications</td>
<td>Giuseppe Credo, GM Powertrain</td>
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<td>11:25</td>
<td>16SNVH-0080 / 2016-01-1768</td>
<td>The Investigation of Self-Balanced Property and Vibration on the Particular Crankshaft System for an Opposed Piston Engine</td>
<td>He Changming, Tongji University</td>
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<td>11:25</td>
<td>16SNVH-0119</td>
<td>Assessment of Broadband Noise Generated by a Vehicle Sunroof at Different Flow Conditions using a Digital Wind Tunnel</td>
<td>Nicholas Oettle, Jaguar Land Rover</td>
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<td>11:50</td>
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<td>Lunch Break</td>
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<td>12:15</td>
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<td>Keynote Lecture</td>
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<td>Fri., June 24th, 2016</td>
<td>An Overview of Vehicle Aeroacoustic Simulation at Volkswagen Group Research</td>
<td>Henry Bensier, Volkswagen AG</td>
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<td>12:45</td>
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<td>Keynote Lecture</td>
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<td>Model based virtual sensing techniques for robust NVH analysis and identification</td>
<td>Wim Desmet, KU Leuven</td>
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<td>13:15</td>
<td></td>
<td>Congress Summary &amp; Concluding Remarks</td>
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<td>Jost Bernasch, Virtual Vehicle Research Center</td>
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<td>13:30</td>
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<td>Transport to Virtual Vehicle Research Center</td>
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<td>Farewell Lunch and Future Car Exhibition</td>
<td>at Virtual Vehicle Research Center</td>
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<td>16:30</td>
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<td>End of Congress &amp; Departure</td>
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**Many thanks to our Exhibitors and Sponsors!**

- AVL
- MAGNA
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- DEWESoft
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- ESI
- FFT
- Microtron Technologies
- Polytec
- HEAD acoustics
- INTES
- LB-acoustics
- virtual vehicle
VENUE

1. CONGRESS GRAZ
   Entrance: Sparkassenplatz 1
   June 22, 19.00h s.t.

2. ALTE UNIVERSITÄT
   Hofgasse 14
   Evening reception
   June 22, 21.30h

3. CAFE PROMENADE
   Erzherzog-Johann-Allee 1
   EM Cocktail Lounge
   June 23, 19.30h

4. SCHLOSSBERG
   RESTAURANT
   Social Evening
   June 24, 14.00h

5. VIRTUAL VEHICLE
   Farewell Lunch & Future Car Exhibition
   June 24, 14.00h
The Organizer reserves the right to relocate booths due to organizational/technical reasons. Status: 2016-05-31 / 2

9th International Styrian Noise, Vibration & Harshness Congress
The European Automotive Noise Conference
June 22-24, 2016  Graz / Austria
in cooperation with www.isnvh.com
The Organizer reserves the right to relocate booths due to organizational/technical reasons.

Status: 2016-05-31 / 2

9th International Styrian Noise, Vibration & Harshness Congress
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Coffee & Lunch breaks

Entrance
Reception Desk

AvL
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ESI Group
Brüel & Kjær
CDH
HEAD acoustics
INTES
FFT MSC
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Brüel & Kjær
CDH
HEAD acoustics
INTES
FFT MSC
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Graz, the 2003 European Cultural Capital, a UNESCO World Heritage Site and an insider tip for connoisseurs – visitors to Graz can enjoy the Mediterranean flair, the world heritage of the picturesque historic quarter, spacious parks and architectural highlights.

Graz is a vibrant regional capital and home to a wide variety of regional Styrian specialties (with world-famous wines and dark pumpkin seed oil leading the way). The Mediterranean flair is omnipresent, from charming pub gardens and quaint farmers’ markets to narrow alleys, lively squares and dreamy courtyards.

For further information, please visit: www.graztourismus.at