

AAC 2025

AACHEN ACOUSTICS COLLOQUIUM



PROGRAM

Development and Research in Automotive Acoustics

November 24 – 26, 2025

Aachen, Germany

FOREWORD

16TH AACHEN ACOUSTICS COLLOQUIUM



Parkhotel Quellenhof Aachen, Germany

MEETING VENUE

Parkhotel Quellenhof Aachen

Monheimsallee 52

52062 Aachen, Germany

☎ +49 241 91320

✉ info@parkhotel-quellenhof.de

🌐 www.parkhotel-quellenhof.de

Are you looking for new ideas and methods to improve the acoustics and vibrations of vehicles and drives? The Aachen Acoustics Colloquium is the perfect opportunity for experts from both industry and research to exchange knowledge and ideas within the field of acoustics and vibrations of vehicles. With 18 technical presentations, two plenary speeches and a poster session, you can stay up-to-date in this ever-evolving field. Attend the Aachen Acoustics Colloquium to get the competitive edge that you need and to get familiar with the latest innovations and insights around acoustics and vibrations of vehicles and drives.

Aachen is one of the most important centers for development and research in automotive acoustics. This year, the Aachen Acoustics Colloquium takes place for the 16th time under the aegis of Prof. S. Pischinger, FEV Group GmbH, Prof. L. Eckstein, fka GmbH, and Prof. K. Genuit, HEAD acoustics GmbH.

Organizers

FEV Europe GmbH, fka GmbH, HEAD acoustics GmbH



ORGANIZATIONAL AND LOCATIONS OF INTEREST

REGISTRATION

Please register for the Aachen Acoustics Colloquium at:
www.aachen-acoustics-colloquium.com

HOTEL RESERVATION

Please book your hotel room via aachen tourist service by using the following link:
www.aachen-acoustics-colloquium.com/accommodation

LOCATIONS OF INTEREST

- | | |
|---|--|
| 1 Parkhotel Quellenhof
Monheimsallee 52
52062 Aachen | 2 Rathaus Aachen
Markt
52062 Aachen |
|---|--|

PAYMENT

The registration fee of € 980 (plus 19 % VAT) also includes a welcome reception as well as a banquet dinner.

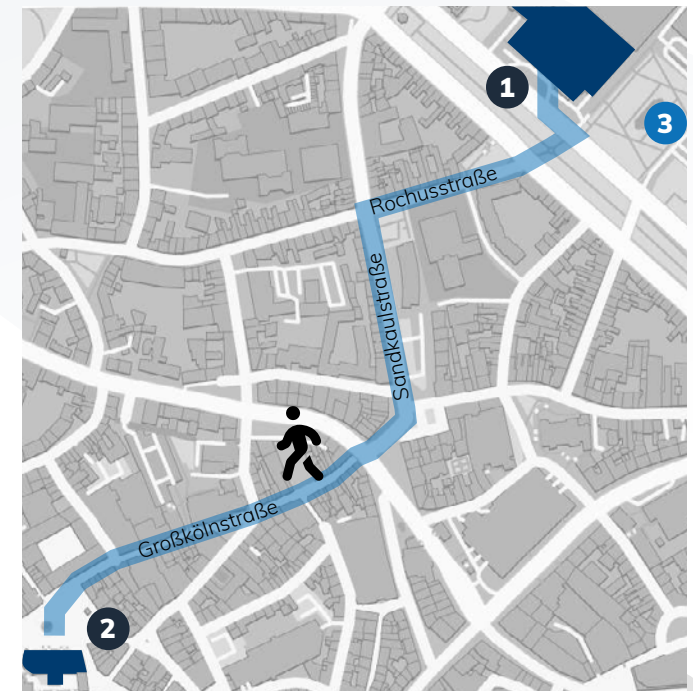
Registration fee for university staff is € 490 (plus 19 % VAT).

PARKING INFORMATION

You can park directly in the Quellenhof parking garage or in the APAG Eurogress parking garage in the immediate vicinity of the event.
The parking fee is not included in the ticket price.

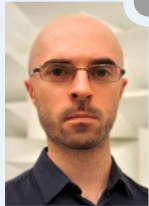
CAR PARKS

- 3 Parkhaus Eurogress**
Monheimsallee 40
52062 Aachen



PLENARY SPEAKER

16TH AACHEN ACOUSTICS COLLOQUIUM



Dr. Saâd Bennouna
Valeo Power Division

Electrification and comfort: NVH challenges and impact of Thermal systems

Automotive electrification is a major paradigm shift bringing highly complex challenges. These ambitious compromises consist of achieving performance and comfort while complying with regulations in a volatile political and economic environment. For instance, thermal embedded systems are of critical importance. This presentation gives an overview of the NVH R&D challenges within automotive electrification. For instance, the industrial and market contexts are described. Then, thermal systems are presented and the discrepancies between NVH metrics and subjective evaluations highlighted. A deeper analysis presents the benefits of NVH reduction solutions. Finally, the vehicle integration factors are studied. These investigations highlight the critical importance of innovation in future developments and raise questions about the right way to handle NVH topics nowadays from compliance and responsibility perspectives.



Prof. Daniel Rixen
Dept. of Mechanical Engineering, Technical University of Munich

Experimental substructuring - some history, current state of techniques and future challenges

Experimental substructuring is a powerful paradigm for analysing the dynamics of complex structural and vibro-acoustic systems. By assembling models of components obtained through experimentation and numerical analysis, it is possible to gain a deep understanding of the interaction between parts, of the effect of joints, and how to modify the dynamics of a product to optimally meet requirements. This concept is not new, but it has gained significant attention in recent years due to substantial advancements in measurement quality and the manipulation of experimental component representations with appropriate engineering intuition. In this talk, we will provide an historical overview of substructuring and discuss frequency-based substructuring and blocked forces in the context of transfer path analysis. We will discuss challenges and future research directions at the end.

SCIENTIFIC COMMITTEE

16TH AACHEN ACOUSTICS COLLOQUIUM



Prof. Jan-Welm Biermann
fmr. Vice Director and Head Vehicle NVH
Institute for Automotive Engineering (ika), RWTH Aachen University



Prof. Otto von Estorff
Head of the Institute of Modelling and Computation
Hamburg University of Technology



Dr. Michael Fischer
Chief Expert and Head Center of Competence NVH
Robert Bosch GmbH



Dr. Stephan C. Gsell
Sounddevelopment
AUDI AG



Dr. Christian Schuster
Manager Vehicle NVH
Ford-Werke GmbH



Dr. Per-Olof Stureson
Consultant, Cum Scientia Engineering, Sweden
Researche KTH Royal Institute of Technology, Sweden

PROGRAM

24TH & 25TH NOVEMBER

November 24TH

19:00 Welcome Reception for Colloquium Attendees

The welcome reception will take place at the exhibition, Parkhotel Quellenhof Aachen, with drinks and food. The reception is free of charge for our participants.



November 25TH

08:30 Welcome and Opening

Prof. Stefan Pischinger
FEV Europe GmbH
Prof. Lutz Eckstein
fka GmbH
Prof. Klaus Genuit
HEAD acoustics GmbH

MEASUREMENT TECHNOLOGY

Session Chair:
Dr. Andreas Herweg
HEAD acoustics GmbH

08:45 Electrification and comfort: NVH challenges and impact of Thermal systems

Dr. Saâd Bennouna
Valeo Power Division

09:30 Automotive Audio Quality: Communication and Entertainment

Dr. Magnus Schäfer
HEAD acoustics GmbH

10:00 In-situ Blocked Forces Determination in an End of Line Test Station by an OTPA Ansatz

Dr. Sören Keuchel
Novicos GmbH

10:30 Coffee Break & Snacks

Sound Design, Sound Quality and Human Perception

Session Chair:
Prof. Klaus Genuit
HEAD acoustics GmbH

11:00 Tonality ratings and unpleasantness judgements for synthesized EV acceleration sounds

Dr. Stephan Töpken
Carl von Ossietzky
Universität Oldenburg

11:30 Do people want virtual engine sounds? Customer acceptance of active sound design in electric vehicles

Dr. Oliver Jung
Hyundai Motor Europe
Technical Center GmbH

PROGRAM

25TH NOVEMBER

November 25TH

12:00 **A Comparative Study of Sound Pressure Level-Based and Listener-Based Assessments in Work Machinery: Focusing on Annoyance Effects Caused by Hydraulic Pump Noise**
Daniel Trojer
Hochschule Landshut

12:30 **Lunch**

POSTER SESSION

Session Chair:
Prof. Roland Sottek
HEAD acoustics GmbH

13:45 **Poster Pitch**
Short pitches of 2 – 3 minutes each, followed by discussions in the poster exhibition area

14:15 **Poster Session**

15:15 **Coffee Break**

TYRE ROAD NOISE PROJECT

Session Chair:
Prof. Lutz Eckstein
fka GmbH

15:45 **Integrated Acoustic Measurement Framework for Tyre-Road Noise Analysis**
Mario Winter
Institute for Automotive Engineering (ika), RWTH Aachen University

16:15 **Development and execution of tyre road noise measurements for Ty-RoN - Development of an Estimation Method for the Pass-by Noise**
Gregor Richartz
Dr. Ing. h.c. F. Porsche AG

16:45 **Coffee Break & Snacks**

17:15 **Interpretable Tyre-Road Noise Prediction Using Structured Multimodal Machine Learning**
Jiawen Meng
Karlsruhe Institute of Technology

17:45 **Deep Multi-Scale Sensor Fusion for Tire-Road Noise Prediction**
Dr. Mustafa Demetgül
Karlsruhe Institute of Technology

19:30 **Champagne Reception**

20:00 **Banquet**
Prof. Klaus Genuit
The banquet will take place at the historical city hall of Aachen and is free of charge for attendees.

The fee for accompanying persons is € 50.



PROGRAM

26TH NOVEMBER

November 26TH

MODEL-BASED NVH DEVELOPMENT

Session Chair:

Prof. Jan-Welm Biermann
Institute for Automotive
Engineering (ika), RWTH
Aachen University

09:00 **Modelling high-frequency vibroacoustic in large built-up structures using the Dynamical Energy Analysis**

Prof. Gregor Tanner
University of Nottingham

09:30 **A Study on Steering Wheel Vibration Transmission Mechanism by Modeling and Verification of Cowl Crossbar System**

Heesoo Pyo
Hyundai Motor Company

10:00 **Coffee Break & Snacks**

FREQUENCY-BASED SUBSTRUCTURING I

Prof. Stefan Pischinger
FEV Europe GmbH

10:30 **Experimental Substructuring – some history, current state of techniques and future challenges**

Prof. Daniel Rixen
Dept. of Mechanical
Engineering, Technical
University of Munich

11:15 **Hybrid NVH Analysis for Electric Drive Units: Substructuring-Based Integration of Simulation and Measurement Data**

Dr. Michael Häußler
FEV Vehicle GmbH

11:45 **Hybrid Modular NVH Engineering of an Electric Steering Gear**

Eric Pasma
VIBES.technology

12:15 **Lunch**

DRIVE TRAIN - VIBRATION AND ACOUSTICS

Session Chair:

Dr. Christoph Steffens
FEV Europe GmbH

13:30 **Mitigating NVH Challenges in CNG/CBG Engines: An Innovative Analysis and Experimental Approach**

Durga Prasad Mishra
Maruti Suzuki India Limited

14:00 **Criteria for Model-Based NVH Optimization of Electrified Drivetrains**

Julius Müller
Institute for Machine
Elements and Systems
Engineering, RWTH Aachen
University



PROGRAM

26TH NOVEMBER

November 26TH

14:30 **Influence of the System Tolerances on the Quasi-Static Excitation Behavior Using the Example of a Gearbox for Electric Vehicles**

Laurenz Roth

Laboratory for Machine Tools and Production Engineering (WZL),
RWTH Aachen University

15:00 **Coffee Break & Snacks**

FREQUENCY-BASED SUBSTRUCTURING II

Session Chair:

Dr. Christoph Steffens
FEV Europe GmbH

15:15 **Eliminating spurious peaks in hybrid Frequency-based Substructuring using an optimized modal resynthesis approach**

Eric Sorber

Siemens Digital Industries
Software

15:45 **New Advanced Root Cause Analysis Types in Numerical Sub-Structuring Methods**

Dr. Markus Herbst

BETA CAE Systems

16:15 **Final Remarks**

Prof. Stefan Pischinger

FEV Europe GmbH

Prof. Lutz Eckstein

fka GmbH

Prof. Klaus Genuit

HEAD acoustics GmbH



POSTER SESSION

16TH AACHEN ACOUSTICS COLLOQUIUM

For the second time, AAC 2025 will also include the presentation of scientific posters. These posters will be displayed in the poster exhibition area during the conference. On Tuesday from 1.45 pm to 3.15 pm, a time slot is dedicated to the posters. This session will start with short pitches of 2 – 3 minutes each, followed by open presentations and discussions in the poster exhibition area

A Study on the Transfer Function Synthesis Method for Analyzing Tire Noise Transmission Path into the Vehicle Interior

Jinung Jang
Hyundai Motor Company

Identification of Passenger Car Seat Dynamic Loads Using an Acoustic Dyno Test Bench

Jakub Jóska
KFB Acoustics

Hybrid Virtual Prototyping for Accelerated Development of Road Noise Performance

Domenico Minervini
Siemens Digital Industries Software

Evaluation of TPA Methods for eAxle Noise Assessment in Modular EV Development: From Bench Testing to Auditory Validation

Shion Mise
Honda Motor Co., Ltd.

ECOSONIC - Sound feedback for resource-efficient driving behaviour

Lukas Münter
Klangerfinder GmbH & Co KG

NVH Development Process and Modeling Techniques for Electric Vehicles Using a Driving Sound Simulator

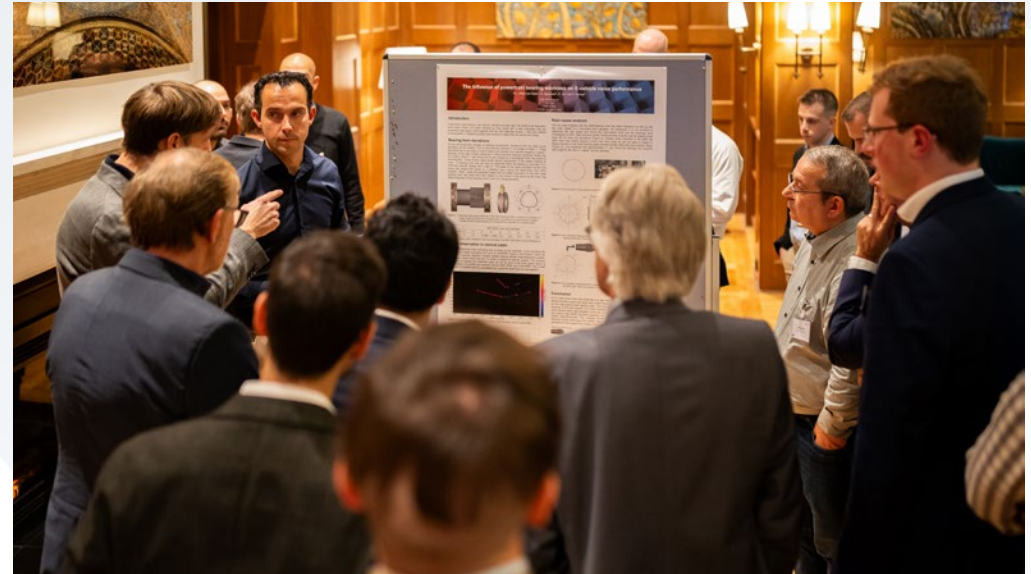
Dr. Kenji Torii
Honda Motor Co., Ltd.

From measured road profile to the full vehicle cabin noise prediction

Dr. Jie Zhang
Siemens Digital Industries Software

CONTACT

16TH AACHEN ACOUSTICS COLLOQUIUM



CONTACT

Aachen Acoustics Colloquium GbR

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General questions / Attendees

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✉ orga@aachen-acoustics-colloquium.com

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✉ guenther@aachen-acoustics-colloquium.com

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