



CONFERENCE PROGRAM

13:00

Wednesday, June 22, 2022

Arrival and Registration

congress room n. 2

13:30

Workshop 1

Data driven methods for NVH

Chair: Steffen Marburg, TU München

Presenters:

Marcus Mäder, TU München
Johannes Schmid, TU München

15:30

Coffee Break

16:00

Workshop 2

Driving simulators for vehicle NVH optimisation

Chair: Giorgio Adriano, VI-grade

Expert panel:

Christopher Mills, Hyundai Motor Company
Piercarlo Miglietta, Stellantis NV
Jens Rudat, Volkswagen

18:00

19:00

Evening Reception @ Graz "Das Promenade"
Please register in advance

08:30

Thursday, June 23, 2022

Arrival and Registration

09:00

congress room n. 1

Opening Session

Chair: Eugène Nijman and Hans Herwig Priebisch, Virtual Vehicle Research GmbH

ISNVH 2022 Welcome Addresses

09:20

Keynote Lecture

Sound capture and speech enhancement technologies for the needs of in-car infotainment

Ivan Tashev, Microsoft

09:55

Keynote Lecture

Vibration mitigation strategy based on the Acoustic Black Hole Effect

Francois Gautier, Le Mans University

10:30

Coffee Break

12th International Styrian Noise,
Vibration & Harshness Congress
The European Automotive Noise Conference

in cooperation with  SAE INTERNATIONAL
Peer Reviewed Conference Papers

June 22-24, 2022 Graz / Austria www.isnvh.com



congress room n. 1

congress room n. 2

11:00

Session 1

Vehicle NVH Simulations: Numerical

Chair: Benoit v.d. Nieuwenhof, Free Field Technologies
Co-Chair: Christian Schuster, Ford of Europe

Session 2

Sound Quality, Active Sound Design and Active control

Chair: Thilo Bein, Fraunhofer LBF
Co-Chair: Laura Leucke, Virtual Vehicle Research GmbH

11:00

22SNVH-0015 / 2022-01-0950

Opening Distortion Fingerprint (ODF) – A New Body Evaluation Method for Perceived Quality and Vehicle Dynamics

Jens Weber, CEVT AB

22SNVH-0010 / 2022-01-0967

ANC: A Low-cost Implementation Perspective

Anna Tira, University of Parma

11:15

22SNVH-0014 / 2022-01-0981

A Study on the Sound Transmission Loss of Split HVAC for Electric Vehicles

Ki-Sang Chae, Hyundai Motor Company

22SNVH-0019 / 2022-01-0972

Personalized EV Driving Sound Design Based on the Driver's Total Emotion Recognition

Kyoung-Jin Chang, Hyundai Motor Company

11:30

22SNVH-0048 / 2022-01-0977

Coupling of Component Models with Mismatching Interfaces for an Efficient NVH Vehicle Design

Nicola Contartese, Virtual Vehicle Research GmbH

22SNVH-0004 / 2022-01-0968

An in-depth Study on the Customer Perception of the Noise Emitted by Electric Vehicles

Lucia Celiberti, Centro Ricerche Fiat SCpA

11:45

22SNVH-0036 / 2022-01-0966

Strategies for Minimising the Noise Impact of a Range Extender for an Electric Vehicle

Matthew Maunder, Ricardo UK, Ltd.

22SNVH-0044 / 2022-01-0974

Correlation between noise metrics and subjective assessment of automotive thermal systems

Saâd Bennouna, Valeo Thermal Systems

12th International Styrian Noise,
Vibration & Harshness Congress
The European Automotive Noise Conference

in cooperation with  SAE INTERNATIONAL
Peer Reviewed Conference Papers

June 22-24, 2022 Graz / Austria www.isnvh.com



12:00

22SNVH-0061 / 2022-01-0952

Experimental characterization and dynamic modelling of electrical cables

Jan Rejlek, Virtual Vehicle Research GmbH

22SNVH-0100 / 2022-01-0980

Utilizing A Hybrid Engineering Approach for NVH Drive Evaluations in Virtual Prototypes

Mark Allman-Ward, VI-grade

12:15

22SNVH-0045 / 2022-01-0932

Time-Domain Simulation Approach for the Electromagnetically Excited Vibrations of Squirrel-Cage Induction Machine Drives under Pulse-Width Modulated Supply

Daniel Bíró, AVL List GmbH

22SNVH-0078 / 2022-01-0970

An alternative Solution to Vehicles Audio System using Inertial Transducers integrated in Trim Parts: Advanced Developments.

Arnaud Duval, Trèves

12:30

Lunch Break

13:40

Session 3

Vehicle NVH Simulations: Analytical

Chair: Jean-Louis Guyader, Sonorhc
Co-Chair: Josef Girstmair, Virtual Vehicle Research GmbH

Session 4

Aero (Flow) Acoustics

Chair: Stefan Becker, University of Erlangen
Co-Chair: Alexander Peiffer, AUDI

13:40

22SNVH-0007 / 2022-01-0947

NVH performance assessment by mean of injected power

Frederic Bornet, Stellantis NV

22SNVH-0005 / 2022-01-0938

Acoustic Fluid-Structure Interaction (AFSI) in the car underbody

Florian Schwertfirm, Kreuzinger und Manhart Turbulenz GmbH

13:55

22SNVH-0039 / 2022-01-0930

Using Analytical Techniques to Understand the Impacts Intelligent Thermal Management Has on Piston NVH

Alastair Jay, Ricardo

22SNVH-0052 / 2022-01-0939

Assessing low frequency flow noise based on an experimentally validated modal substructuring strategy featuring non-conforming grids

Rafael Engelmann, BMW AG

12th International Styrian Noise,
Vibration & Harshness Congress
The European Automotive Noise Conference

in cooperation with  SAE INTERNATIONAL
Peer Reviewed Conference Papers

June 22-24, 2022 Graz / Austria www.isnvh.com



14:10

22SNVH-0082 / 2022-01-0986

Characterization and modelling of mounts for electric powertrains

Jean-Luc Wojtowicki, Vibratec

22SNVH-0051 / 2022-01-0933

Acoustic Study on Tubular Micro-perforated Flow Plug Sections in Vehicle Silencer's Application

Margus Villau, Tallinn University of Technology

14:25

22SNVH-0085 / 2022-01-0945

On the Calculation of Modal Damping Ratios

Markus Jäger, RWTH Aachen

22SNVH-0057 / 2022-01-0934

Effects of Boundary Layer and Local Volumetric Cells Refinements on Compressor Direct Noise Computation

Asuka Gabriele Pietroniro, Volvo Cars - KTH

14:40

Coffee Break

15:00

EXHIBITORS' PRESENTATIONS

Chair: Jan Rejlek

HEXAGON, EOMYS, Vims, HEAD acoustics, gfai tech, Microflown

15:45

Room change

12th International Styrian Noise,
Vibration & Harshness Congress
The European Automotive Noise Conference

in
cooperation
with

Peer Reviewed Conference Papers

June 22-24, 2022 Graz / Austria www.isnvh.com



15:50

Session 5

Uncertainties

Chair: Marinus Luegmair, BMW Group
Co-Chair: Steffen Marburg, TU München

Session 4 cont.

Aero (Flow) Acoustics

Chair: Peter Kalinke, BMW Group
Co-Chair: Joerg Ocker, Porsche AG

15:50

22SNVH-0003 / 2022-01-0984

An efficient methodology to predict the dynamic instabilities of a frictional system

Farouk Maaboudallah, University of Sherbrooke

22SNVH-0062 / 2022-01-0937

Aero-acoustic source terms from Large-Eddy Simulation in turbulent pipe flow

Johannes Tieber, TU Graz

16:05

22SNVH-0017 / 2022-01-0943

Parametric Model Order Reduction for Vibroacoustic Metamaterials based on Modal Superposition

Moritz Hülsebrock, Fraunhofer Institute LBF

22SNVH-0088 / 2022-01-0940

Simulation Enabling Autonomous Vehicles to Better Hear Emergency Vehicles

Andreas Jantzen, Dassault Systemes Simulia Corp.

16:20

22SNVH-0009 / 2022-01-0951

Sensitivity analysis of NVH simulations with stochastic input parameters for a car body

Sophie Cram, BMW Group - TU München

22SNVH-0097 / 2022-01-0936

Validation of Combining Compressible CFD Results with Statistical Energy Analysis for Vehicle Interior Noise Simulation

Simon Martin, ESI Group

16:35

22SNVH-0101 / 2022-01-0989

Mastering uncertainty in model-based prediction of vibroacoustic vehicle properties

Wei Xu, SAM - TU Darmstadt

22SNVH-0069 / 2022-01-0987

End-Correction in Open Ducts: an Experimental Study

Andrea Greco, AVL List GmbH

16:50

Coffee Break

12th International Styrian Noise,
Vibration & Harshness Congress
The European Automotive Noise Conference

in cooperation with  SAE INTERNATIONAL
Peer Reviewed Conference Papers

June 22-24, 2022 Graz / Austria www.isnvh.com



17:10

Session 6

Machine Learning and Data Based Approaches

Chair: Marinus Luegmair, BMW
Co-Chair: Steffen Marburg, TU München

Session 7

Experimental Vehicle NVH: Substructuring

Chair: Thierry Bourdon, Vitesco
Co-Chair: Matthew Maunder, Ricardo UK, Ltd.

17:10

22SNVH-0049 / 2022-01-0942

Hierarchical Bayesian Networks for predicting the structural behavior of coupled systems

Moritz Hülsebrock, Fraunhofer Institute LBF

22SNVH-0096 / 2022-01-0988

Using Dynamic Substructuring and Component TPA to shape the NVH experience of a full-electric vehicle

Maarten van der Kooij, VIBES Technology B.V.

17:25

22SNVH-0053 / 2022-01-0941

Variational Autoencoders for Dimensionality Reduction of Automotive Vibroacoustic Models

Johannes Schmid, TU München

22SNVH-0043 / 2022-01-0956

Prediction and Optimization of Blocked Force Changes of a Suspension System using Bush Stiffness Injection Method

Munhwan Cho, Hyundai Motor Company

17:40

22SNVH-0103 / 2022-01-0948

Gaussian processes for transfer path analysis applied on vehicle body vibration problems

Caglar Gurbuz, TU München

22SNVH-0008 / 2022-01-0978

FBS Decoupling at Suspension Level for Road Noise Applications

Domenico Minervini, Siemens Digital Industries Software

17:55

22SNVH-0012 / 2022-01-0976

Stiffness injection: a tool for vehicle NVH performance optimization

Dennis de Klerk, Müller-BBM

18:10

19:30

Social Evening at Schlossberg Restaurant

Please register in advance

12th International Styrian Noise,
Vibration & Harshness Congress
The European Automotive Noise Conference



June 22-24, 2022 Graz / Austria www.isnvh.com



09:00

Friday, June 24, 2022

09:00

congress room n. 1

Session 8

Hybrid Numerical-Experimental Vehicle Acoustics & Vibrations

Chair: Laurent Gagliardini, Stellantis NV
Co-Chair: Nicola Contartese, Virtual Vehicle Research GmbH

congress room n. 2

Session 1 cont.

Vehicle NVH Simulations: Numerical

Chair: Per Alenius, Volvo
Co-Chair: Bernhard Graf, AVL

09:00

22SNVH-0016 / 2022-01-0959

A Trend Line Analysis of the Insertion Loss Test Data and Application to Sound Transmission Loss Simulation

Ki-Sang Chae, Hyundai Motor Company

22SNVH-0021 / 2022-01-0931

Efficient prediction and analysis of the noise radiated by an electric powertrain

Xavier Robin, Free Field Technologies

09:15

22SNVH-0054 / 2022-01-0953

High-bandwidth Mechanical Hardware-in-the-Loop Emulation of Structural Dynamics for More Efficient NVH Development and Testing

Jonathan Millitzer, Fraunhofer Institute LBF

22SNVH-0055 / 2022-01-0955

Tyre-road interaction noise prediction: A simulation based approach

Abhishek Saraswat, CEAT LTD.

09:30

22SNVH-0046 / 2022-01-0979

Comparison of methods between acceleration-based in-situ and a new Hybrid in-situ Blocked Force determination

Ron Reichart, VIBES Technology B.V.

22SNVH-0011 / 2022-01-0973

Analytical and Numerical Models of the Sound Radiated by Fully Clamped Rectangular Vibrating Plates

Anna Tira, University of Parma

09:45

22SNVH-0095 / 2022-01-0975

A hybrid numerical/experimental technique for the determination of operative airborne acoustic loads for tire interior noise SEA prediction

Federico Di Marco, Autoneum Management AG

22SNVH-0080 / 2022-01-0985

A Coupled Simulation Approach for the Quantification of Impact Events in Automotive Applications

Chandan Ravi, Altair Engineering India Pvt. Ltd.

12th International Styrian Noise, Vibration & Harshness Congress
The European Automotive Noise Conference

in cooperation with  SAE INTERNATIONAL
Peer Reviewed Conference Papers

June 22-24, 2022 Graz / Austria www.isnvh.com



10:00

Coffee Break

10:30

Session 9

Materials

Chair: Arnaud Duval, Treves
Co-Chair: Manfred Kaltenbacher, TU Graz

Session 10

Experimental Vehicle NVH: Component Noise Reduction

Chair: Piercarlo Miglietta, Stellantis NV
Co-Chair: Ralf Lehmann, Mercedes-Benz AG

10:30

22SNVH-0013 / 2022-01-0949

Energy Harvesting for lightweight design by means of ferroelectret transmission mechanisms arranged in clusters

Hendrik Holzmann, Fraunhofer Institute LBF

22SNVH-0029 / 2022-01-0958

An Experimental Study on Factors That Influence Encapsulation Efficiency

David Lennström, Volvo Cars

10:45

22SNVH-0066 / 2022-01-0954

Reduction of structure-borne tyre/road noise through rubber resonant metamaterials in tyres

Luca Sangiuliano, KU Leuven

22SNVH-0042 / 2022-01-0935

Study of Installation Effects on Automotive Cooling Fan Noise

Yidan Lai, Volvo Cars

11:00

22SNVH-0102 / 2022-01-0961

Improving the application range of "Greenflocks" chips urethane based poroelastic sustainable materials coming from recycled PU mattresses using as well recycled heavy granulated carpet scraps as

Arnaud Duval, Trèves

22SNVH-0040 / 2022-01-0983

On the different contributions of mounts and flexible hoses on the structure borne noise of refrigerant compressors

Andrea Ricci, Università degli Studi di Trieste - BMW AG

11:15

22SNVH-0083 / 2022-01-0962

Modeling and controlling acoustic performance of heterogeneous materials made of recycled foams

Fabien Chevillotte, MATELYS - Research Lab

22SNVH-0024 / 2022-01-0944

A general framework for the experimental characterization of nonlinearities and its application to a laminated assembly of an electrical motor

Balázs Vehovszky, Szechenyi Istvan Univ.

12th International Styrian Noise,
Vibration & Harshness Congress
The European Automotive Noise Conference

in cooperation with  SAE INTERNATIONAL
Peer Reviewed Conference Papers

June 22-24, 2022 Graz / Austria www.isnvh.com



11:30

22SNVH-0072 / 2022-01-0960

Improving the sound transmission loss of an aircraft ceiling panel by locally resonant metamaterials

Felipe Alves Pires, KU Leuven

22SNVH-0063 / 2022-01-0982

**NVH Refinement of Automotive HVAC System
(CANCELLED)**

Uttam Vasant Titave, Tata Motors Ltd.

11:45

22SNVH-0033 / 2022-01-0957

Polyurethane decoupling foam with variable stiffness and thickness: Insulation performance versus their mechanical and transport properties

Minh Tan Hoang, Adler Pelzer Group

22SNVH-0074 2022-01-0964

**Novel sound imaging method for the localization of leakages in automotive components and structures
(CANCELLED)**

Thomas Rittenschober, Seven Bel GmbH

12:00

Room Change

congress room n. 1

12:15

**Congress Summary, Best Paper Award
& Concluding remarks**

12:35

Lunch Break

13:35

Informal Get-Together & End of Congress

12th International Styrian Noise,
Vibration & Harshness Congress
The European Automotive Noise Conference

in cooperation with  SAE INTERNATIONAL
Peer Reviewed Conference Papers

June 22-24, 2022 Graz / Austria www.isnvh.com

