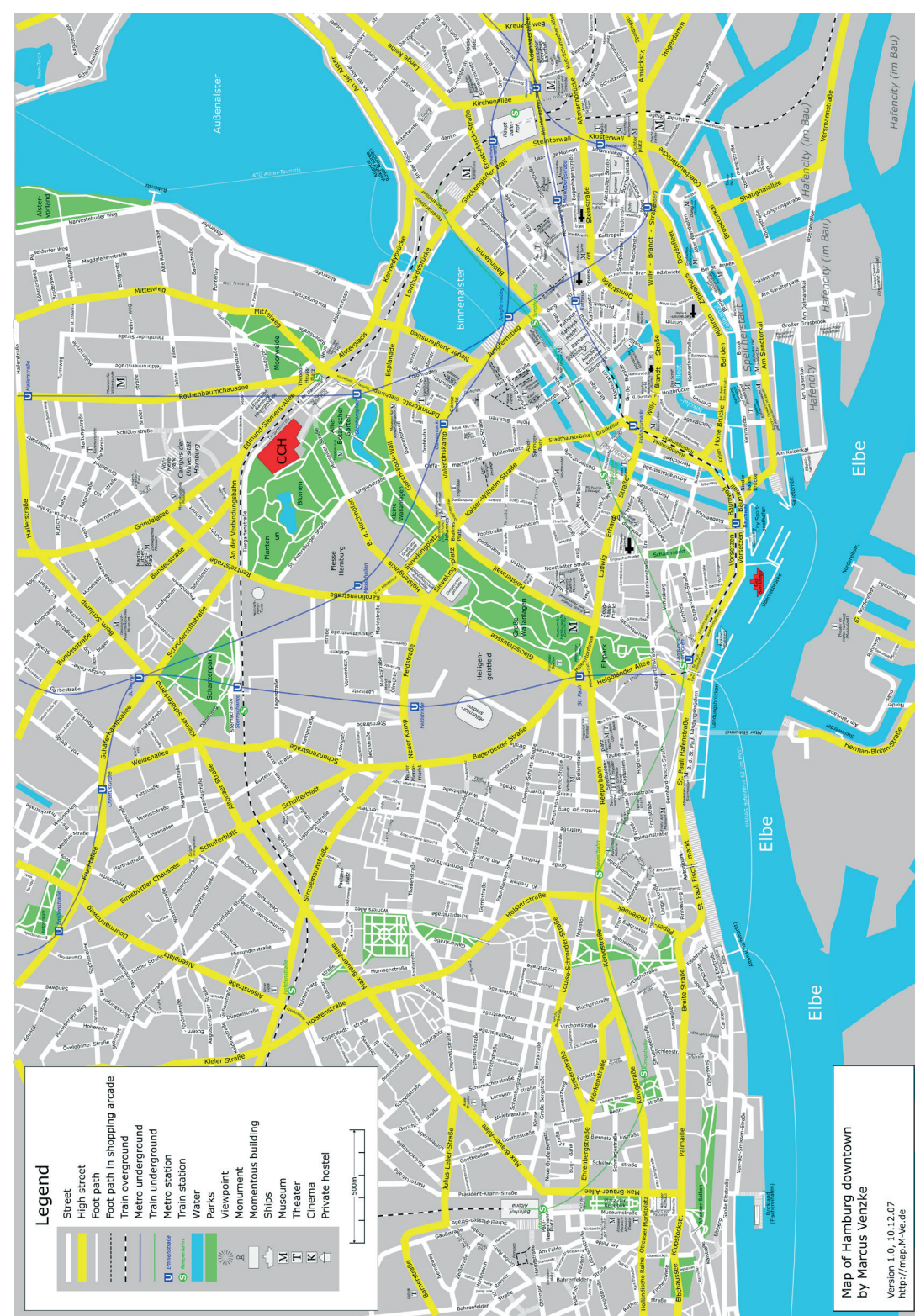




INTER-NOISE 2016 PROGRAM



TOWARDS A QUIETER FUTURE

45th International Congress and Exposition
on Noise Control Engineering

AUGUST 21 - 24, 2016



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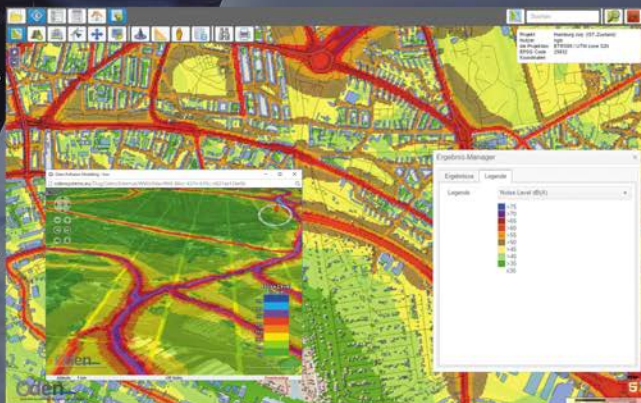
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Welcome by the Conference Chairs

Time flies by: It is already four years ago that the German Acoustical Society presented its Preliminary Proposal to the I-INCE Congress Selection Committee in New York and convinced the responsible persons to grant the 45th International Congress and Exposition on Noise Control Engineering, INTER-NOISE 2016 to an organizing team in Hamburg and Berlin. Today it is our great pleasure to welcome you here in Hamburg.

Reflecting the congress theme “Towards a Quieter Future”, more than 900 high-quality contributions can be found within the program at hand, addressing all relevant fields related to noise and vibration control. Topics ranging from A (for active control) to W (for wind turbines) include scientific ideas, latest innovations, and state-of-the-art applications. In 15 parallel sessions, scientists and practicing engineers alike will meet and share their research in areas such as measurement techniques, traffic noise, auralization, building acoustics, industrial noise, numerical acoustics, noise & health, psychoacoustics, sound quality, sound-scape, urban sound planning, noise policy, and education.

In addition to the presentation of such technical papers, the congress includes a plenary on historical and philosophical views of noise in our society, a plenary on the future, which focuses on the basic mechanisms of sound analysis in the human brain, and four keynotes that will deepen insights into aircraft, road, and train traffic noise as well as underwater acoustics.

Moreover, a Manfred Heckl Memorial Session has been organized in addition to a special public outreach symposium entitled Buy Quiet, and six sponsored short courses.

Immediately following INTER-NOISE 2016, three satellite symposia will wrap up the event in Berlin, Germany. These symposia, which focus on Building Acoustics, European Noise Policy, and Soundscape & Psychoacoustics, are organized in cooperation with the Technical University of Berlin as well as the Acoustics, Noise Control, and Vibration Engineering Standards Committees of DIN and VDI.

Hamburg proves an ideal place to meet for an INTER-NOISE conference. For you, our international guests, it promises a lively metropolis with charm and style. For its residents, it is considered the proud pearl of the North. Hamburg has more recreational areas than any other German city, more bridges than Venice, and its cultural offerings range from musicals to outstanding operas, small clubs, and the sheer pleasure of strolling through St. Pauli. And of course the harbor itself, with a special atmosphere that cannot be found anywhere else. You also will have a marvelous view of a new landmark, the Elbe philharmonic concert hall “Elbphilharmonie”; its unique interior acoustics, designed by Yasuhisa Toyota, will host performances beginning in spring of 2017. Ultimately the four conference

days promise inspiring exchanges on noise topics mixed with relaxing moments in the city.

As those responsible for the conference, we would like to thank all the authors and session organizers for their contributions to the event and for their efforts to make the program so complete. Special thanks in this regard go to Judith Galuba and Berndt Zeitler for their tremendous work in finalizing it. We also would like to extend our gratitude to the colleagues of the supporting committees and the organizing team, namely Christian Popp, Stephan Lippert, Marcel Ruhnau, Teresa Lehmann, Claudia Plötz and Julia Schneiderheinze for their great help and co-operation. Finally, we wish to express our sincere appreciation to the sponsoring and supporting companies, institutions, and associations that made the conference possible. It has been an honor for us to support global noise and vibration control activities through the organization of INTER-NOISE 2016. We sincerely hope that when looking back, all participants will remember the days in Hamburg and Berlin as particularly prosperous and interesting, spent soaking in a great deal of useful information, meeting old and new friends, and finding some time to simply enjoy the ambiance of the conference.

We wish all participants of the INTER-NOISE 2016 an interesting meeting, many fruitful discussions, and a pleasant stay in Hamburg.

Otto von Estorff, Conference Chair
Brigitte Schulte-Fortkamp, Conference Co-Chair
Wolfgang Kropp, Technical Program Chair

Welcome by the International INCE

Dear colleagues,

It is my real honour and pleasure to welcome you to our annual meeting, the 45th International Congress and Exposition on Noise Control Engineering, INTER-NOISE 2016, in the wonderful city of Hamburg, Germany. Although this welcome together with the excitement at the prospect of the conference may risk to become a matter of routine for the I-INCE President, I can assure you that my joyful expectation is particularly true and strong this year: Because it simply is a wonderful thing to meet - and see meet - you, the international community of noise control engineers, as guests in my own country, in Germany, and to make me feel a guest there myself in fact.

I thus feel urged on expressing a double welcome even: the welcome of I-INCE, the International Institute of Noise Control Engineering, as well as the welcome of the many colleagues doing effective and successful noise control engineering in Germany since many years. By bringing together these two souls in my chest, by even making them welcome each other, the forthcoming meeting definitely offers a most remarkable peculiarity and personal attractiveness to me.

I am sure that bringing together noise control engineers from all over the world and making them constructively encounter the long tradition of German noise control efforts offers a unique chance for further promotion of our discipline. As in many other European cities and countries, disastrous devastation of World War Two in Germany necessitated intensive reconstruction works which, together with growing demands for well-being and quality, then were the starting point of explicitly aiming for acoustic quality. Consequently, over the following decades Germany and Europe essentially contributed to effective noise control methods and technologies of high maturity. The corresponding worldwide development and establishment of Engineering Acoustics as an indispensable discipline of Engineering at all motivated for and then strongly benefitted from the support of the INTER-NOISE conference series (since 1972) and its institutional body I-INCE which had been founded in 1974 to basically

- establish, strengthen and further develop the discipline and the profession of noise control engineering and to
- implement and maintain a continuous platform for scientific and technological exchange of views, experiences and ideas.

While joining the long and proud tradition of German and European acoustics and noise control engineering, INTER-NOISE 2016 in Hamburg will be the 45th meeting within this series, the second in Germany after Munich 1985 and the 18th in Europe, thus clearly demonstrating the continuity in both, ongoing need for and successful use of regular personal communication, information and exchange.

This is particularly important because our matter, the matter of successfully controlling noise and improving the sound quality around us, is a long-term matter. In spite of the many successful noise reducing activities in the past, unwanted sounds are far from being under control within acceptable limits. On the contrary we have to endure that all success in noise control tends to be compensated by ongoing mechanization and industrialization which in turn needs more - and new - control efforts. Therefore, our professional task is not clearly set in time, it is a permanent challenge rather, a job never being fully done but having to be done every day again. However, although being consigned to eternity, this task is not a Sisyphean one because our efforts are not useless at all - they bring us evident, verifiable success instead of the saga's unending frustration.

Such recent success will be highlighted in the forthcoming days of INTER-NOISE 2016 in Hamburg which will help to update and redefine the state of our art and available technology and to discuss aspects and priorities of our future work. Use your participation as a delegate to engage yourself, become active in the many presentations and discussions and thus help to identify further potential for noise control and noise control engineering in both, research and practical application. Receive the stimulating cosmopolitan atmosphere of Hamburg and mutually stimulate yourselves by sharing the latest news, developments and experiences with your colleagues. If you do so, if you use the platform of INTER-NOISE for what it has been prepared for, then the success of INTER-NOISE 2016 is predictable, can be taken for sure.

Of course such optimism takes for granted what cannot be taken for granted at all because it is the result of hard self-sacrificing work of the hosting team: the Deutsche Gesellschaft für Akustik DEGA (German Acoustical Society) and the many supporting people and institutions around. From all I noticed, however, I am sure we will find an optimal platform and ideal conditions for us and for our matter. I therefore would like to thank our hosts, the organizing and scientific committees and all other contributors for their enormous efforts to make INTER-NOISE 2016 a successful, enjoyable and unforgettable event.

So welcome to INTER-NOISE 2016, welcome to Germany and welcome to the inspiring city of Hamburg, often said to be the "Tor zur Welt", the "gate to the world" because of its important seaport. Let us temporarily, from August 21 to 24, make Hamburg the place to be for noise control engineers and let us jointly use this gate as gate to our professional world and to a productive, fruitful and pleasant meeting towards a - following the conference theme - quieter future!

Joachim Scheuren, President of I-INCE

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Registration Desk

The registration desk is located in the entrance hall.

Opening hours:

Sunday, August 21 | 08:00-18:00

Monday, August 22 | 07:00-17:00

Tuesday, August 23 | 07:00-17:00

Wednesday, August 24 | 07:00-14:00

Contact

registration@internoise2016.org

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Technical Program Overview

MONDAY

12:00 - 13:00 - Lunch Break									
11:00 - 12:00 - Keynotes in Hall 1									
	08:00	08:20	08:40	09:00	09:20	09:40	10:00	10:20	10:40
Hall 1	12 Industrial Noise								
Hall A1	16 Numerical Acoustics I								
Hall A2	4.2 Aircraft Noise, Exterior: Airport Community Noise								
Hall B1	21.4 Standardization in Soundscape								
Hall B2	9.1 Environmental Noise Directive: Common Issues of END								
Hall C1	29.3 Effects of Sound Sources on Cardiovascular Health								
Hall C2	18.1 Psychoacoustics: Modeling of Auditory Sensations			18.2 Psychoacoustics: Sound in Multisens. P. a. I.					
Hall 7	23.1 Tyre/Road Interaction: Excitation, Response and Sound Radiation								
Hall 8	22.1 Train (Noise and Vibration): Railway Vibration								
Plant. u. Bl.	2.3 Measurement of Sound and Vibration by Optical and Imaging Technique			2.4 Advanced Measurement Techniques: Measuring by Means of Sound and Vibration					
H. 13/14	1.1 Concepts and Algorithms for Active Noise and Vibration Control								
Hall 15	20 Sound Propagation Outdoors								
Hall D	7.2 Acoustics of Indoor Spaces I								
Hall E	27.01 Vibroacoustics: Acoustic Black Holes: Theory & Applications for Noise and Vibration Control								
Hall F	7.8 Applying Building Envelope Design for Traffic Noise Mitigation								

	13:00	13:20	13:40	14:00	14:20	14:40	15:00 to 15:40	15:40	16:00	16:20	16:40	17:00	17:20	17:40
Hall 1	12 Industrial Noise						Poster Session in Foyer G and Foyer 1		12 Industrial Noise					
Hall A1	16 Numerical Acoustics I								4.1 Aircraft Noise, Exterior: Airframe/Flow-Induced-Noise					
Hall A2	4.2 Airport Community Noise								Young Professionals Workshop					
Hall B1	21.1 Soundscape: Soundscape, Health, Quality of Life								21.1 Soundscape: Soundscape, Health, Quality of Life					
Hall B2	9.1 Environmental Noise Directive: Common Issues of END								9.2 Environmental Noise Directive: Noise Mapping					
Hall C1	29.1 WHO Environmental Noise Guidelines for the European Region - What is New?					29.2			29.2 Noise & Health: Effects of Sound Sources on Annoyance					
Hall C2	18.2 Psychoacoustics: Sound in Multisensory Perception and Interaction					18.4			18.4 Psychoacoustics: Delight/Emotional Design for Sound				25.1 Urban Sound Planning I	
Hall 7	23.1 Tyre/Road Interaction: Excitation, Response and Sound Radiation								23.1 Tyre/Road Interaction: Excitation, Response and Sound Radiation					
Hall 8	2.6 Advanced Measurement Techniques: Measurement Equipment, Calibration and Signal Processing								2.6 A. M. T.				17.1 Product Sound Quality: Perception of Electric and Hybrid Vehicles: I	
Plant. u. Bl.	11 Manfred Heckl Memorial Session								11 Manfred Heckl Memorial Session				14.3 Materials: Industrial Experiences of Poro-elastic Treatment Applications	
H.13/14	1.1 Concepts and Algorithms for Active Noise and Vibration Control								1.1				1.2 Active Control: Technologies and Practical Implementation of Active Noise and Vibration Control I	
Hall 15	20 Sound Propagation Outdoors								28 Vehicle Acoustics (Train)					
Hall D	7.2 Acoustics of Indoor Spaces I								7.4 Building Acoustics: Low-frequency Sound Insulation - Measurement and Prediction					
Hall E	27.01 Vibroacoustics: Acoustic Black Holes: Theory & Applications for Noise and Vibration Control								27.07 Vibroacoustics: Mid and High Frequency Numerical Methods in Vibroacoustics I					
Hall F	7.1 Building Acoustics: Acoustic Criteria in Regulations and Classification/Labeling of Buildings								7.1 Building Acoustics: Acoustic Criteria in Regulations and Classification/Labeling of Buildings					
Hall G													Exhibitors' Reception	

Technical Program Overview

TUESDAY

		08:00	08:20	08:40	09:00	09:20	09:40	10:00	10:20	10:40
		12:00 - 13:00 - Lunch Break								
		11:00 - 12:00 - Keynote Lectures in Hall 1								
Hall 1		14.1 Materials: Acoustics of Porous Media								
Hall A1		16 Numerical Acoustics II								
Hall A2		5.2 Aircraft Interior Noise: Technologies for Noise Reduction								
Hall B1		21.2 Soundscape: Urban Soundscape Applications								
Hall B2				9.4 Environmental Noise Directive: Quiet Areas				9.3 END: Implement. and Evaluat. of Measures		
Hall C1		18.5 Psychoacoustics: Psychoacoustics Basis of Noise Evaluation								
Hall C2				25.1 Urban Sound Planning II						
Hall 7		23.3 Tyre/Road Noise Measurement Methods, Standards and Classification								
Hall 8		17.1 Perception of Electric and Hybrid Vehicles II					17.2 Product Sound Quality			
Plant. u. BI.		1.2 Active Control: Technologies and Practical Implementation of Active Noise and Vibration Control II								
H. 13/14		26.2 Vehicle Acoustics (Car): Interior Noise								
Hall 15		24.3 Underwater Acoustics and Ship Noise: Vibroacoustics and Marine Applications								
Hall D		7.2 Building Acoustics: Acoustics of Indoor Spaces II								
Hall E		27.07 Mid and High Frequency Numerical Methods in Vibroacoustics II					27.03 Vibroacoustics: General Structural Acoustics			
Hall F		7.3 Building Acoustics: General					7.6 Building Acoustics: Structure-borne and Impact Noise in Buildings I			

	13:00	13:20	13:40	14:00	14:20	14:40	15:40	16:00	16:20	16:40	17:00	17:20	17:40
Hall 1	13.1 Machinery Noise: Machinery Noise and Quiet Machine Design I						13.1 Machinery Noise and Q. M. D. I	27.08 Vibroacoustics: Problems: Method and Applications					
Hall A1				16 Numerical Acoustics II				16 Numerical Acoustics II					
Hall A2				5.1 Aircraft Interior Noise: General			5.4 Aircraft Interior Noise: Psychoacoustics and Testing	5.3 Aircraft Interior Noise: Simulation I					
Hall B1				29.5 Noise & Health: Effects of Interventions or Changes in Environmental Noise Levels on Human Response			21.3 Soundscape: Soundscape in Architecture, Urban Design and Landscape						
Hall B2				9.3 Environmental Noise Directive: Implementation and Evaluation of Measures			29.6 Noise & Health: Noise Indicators and Exposure Assessment for Health Impact Studies						
Hall C1				18.5 Psychoacoustics: Psychoacoustics Basis of Noise Evaluation			18.5 Psychoacoustics: Psychoacoustics Basis of Noise Evaluation						
Hall C2				25.1 Urban Sound Planning II		2.5	2.5 Advanced Measurement Techniques: Monitoring Environmental Sound and Vibration						
Hall 7				23.3 Tyre/Road Noise Measurement Methods, Standards and Classification			6 Auralisation of Environmental Sound						
Hall 8				15 Noise Barriers			15 Noise Barriers						
Plant. u. Bl.				14.2 Materials: Experimental Porous Characterisation - from State of the Art to Standardization			30 Wind Turbine Noise: Measurement, Modeling and Simulation I						
H. 13/14				26.4 Vehicle Acoustics (Car): Perception			26.1 Vehicle Acoustics (Car): Exterior Noise						
Hall 15				24.3 Underwater Acoustics and Ship Noise: Vibroacoust. and Marine Applic.		22.3	22.3 Train (Noise and Vibr.): Monitoring Railway Noise and Vibration Mitigation Measure						
Hall D				7.7 Building Acoustics: Acoustic Design and Performance Evaluation of Building Envelope			7.5 Building Acoustics: Measurement Methods in Building Acoustics I						
Hall E				27.03 Vibroacoustics: General Structural Acoustics			27.10 Vibroacoustics: Vibroacoustics of Composite Panels						
Hall F				7.6 Building Acoustics: Structure-borne and Impact Noise in Buildings I			7.6	3.1 Aeroacoustics: Duct Aeroacoustic					

15:00 - 15:40 - Poster Session in Foyer G and Foyer 1

Technical Program Overview

WEDNESDAY

	08:00	08:20	08:40	09:00	09:20	09:40	10:00	10:20	10:40	11:00	11:20	11:40
										12:00 - 13:00 - Lunch Break		
Hall 1		13.1 Machinery Noise: Machinery Noise and Quiet Machine Design II								13.2 Machinery Noise: Noise and Vibration Source Identification.		
Hall A1			16 Numerical Acoustics III					3.2 Aeroacoustics: Airfoil Modifications for Low Noise				
Hall A2		5.3 Aircraft Interior Noise: Simulation II							8 Dynamap			
Hall B1			21.5 Soundscape: Soundscape, Music and Ecology							18.3 Psychoacoustics: Eval. of Steady State and Unst. Sound		
Hall B2		29.4 Noise & Health: Effects of Sound Sources on Sleep, Mental Health and Child Development								29.7 Noise & Health: NORAH		
Hall C1		2.1 Advanced Measurement Techniques: Advanced Measurement Methods for Aeroacoustics						2.2 Advanced Measurement Techn.: Measurement Methods for Noise and Vibration Source Identification				
Hall C2						25.1 Urban Sound Planning III						
Hall 7						23.2 Tyre/Road Noise: Low Noise Pavements and Tyres						
Hall 8					10 Green Noise Control Measures					19 Sound Power		
Plant. u. Bl.		30 Wind Turbine Noise: Measurement, Modeling and Simulation II							14.4 Materials: Sustainable Acoustic Materials			
H.13/14					26.3 Vehicle Acoustics (Car): Auxiliary Equipment				26.5 Vehicle Acoustics (Car): Exterior Noise - Simulation			
Hall 15			24.2 Underwater Acoustics and Ship Noise: Noise of Ships and Offshore Structures									
Hall D					7.5 Building Acoustics: Measurement Methods in Building Acoustics II					7.2 B.A.: Acoustics of Indoor Spaces III		
Hall E		27.02 Vibroacoustics: Application of Vibroacoustic Methods to Noise Control Treatment						27.06 Vibroacoustics: Low Frequency Numerical Methods in Vibroacoustics				
Hall F		7.6 Building Acoustics: Structure-borne and Impact Noise in Buildings II							27.09 Vibroacoustics: Vibroacoustic Experiments			

25 and 26 August: Satellite Symposia in Berlin

	13:00	13:20	13:40	14:00	14:20	14:40	15:00	16:00	17:00
Hall 1	13.2 Machinery Noise: Noise and Vibration Source Identification and Fault Diagnosis								
Hall A1	3.2 Aeroacoustics: Airfoil Modifications for Low Noise								
Hall A2	8 Dynamap								
Hall B1	18.3 Psychoacoustics: Evaluation of Steady State and Unsteady Sound								
Hall B2	29.7 Noise & Health: NORAH - A German Study on the Effects of Transportation Noise in the Vicinity of Airports								
Hall C1	2.2 Advanced Measurement Techniques: Measurement Methods for Noise and Vibration Source Identification								
Hall C2	25.2 Urban Sound Planning: Management of Recreational Noise in Urban Areas								
Hall 7	22.2 Train (Noise and Vibration): Rolling, Aerodynamic and Impact Noise								
Hall 8	19 Sound Power								
Plant. u. Bl.	Future Congress Technical Planners Meeting								
H.13/14	26.5 Vehicle Acoustics (Car): Exterior Noise - Simulation								
Hall 15	24.1 Underwater Acoustics and Ship Noise: Underwater-sensor Calibration, Facilities and Procedures								
Hall D	7.2 Building Acoustics: Acoustics of Indoor Spaces III								
Hall E	27.05 Vibroacoustics: Internoise 2016 Workshop on Sound Insulation of Transportation Vehicles and Lightweight Buildings								
Hall F	27.04 Vibroacoustics: Holographic Identification of Vibroacoustic Noise Sources								

Sunday, August 21, 201616:30 Hall 1 **Opening Ceremony**17:15 Hall 1 **Plenary Lecture Sieglinde Geisel**
"The Noise in Our Head"18:00 Foyer 1 **Welcome Reception****Monday, August 22, 2016**

	Hall 1	Hall A1	Hall A2	Hall B1	Hall B2	Hall C1	Hall C2
	Industrial Noise 12 (p. 73)	Numerical Acoustics 16 (p. 75)	Aircraft Noise Exterior 04.2 (p. 67)	Soundscape 21.4 (p. 80)	Envir. Noise Directive 09.1 (p. 71)	Noise and Health 29.3 (p. 87)	Psychoacoustics 18.1 (p. 76)
08:00	Vasilyev: Reduction plants vibration						
08:20	Fahmy: Small Bore Dynamics			Minoura: Cultural Soundscapes	Juraga: Evaluation of END	van Kempen: Cardiovascular effects 1	Sottek: Time-variant roughness
08:40	Staples: Detailed Model Benefits		Legriffon: Propeller noise prediction	Struck: Internat. Noise Standards	Alberts: Road traffic noise exposure	van Kempen: Cardiovascular effects 2	Oetjen: Roughness algorithm
09:00	Notario Tévar: Industrial Noise		Schlüter: Determination of Speed	Brooks: Soundscape Standard	Luzzi: Importance of participation	Lercher: Noise-health relation	Völk: Loudness Envelope Extract.
09:20	Break	Silva: Effective Length on TL	Zellmann: sonAIR Source Model	Lavia: Engagement Model	Bonacker: Participation in small cities	Break	Sanchez: Spectro-temporal modulation
09:40	Zacharias: ISO 9613-2: CMET	Schröder: Source Interpolation	Break	Break	Break	Héritier: Transportation and CVD	Schell- Majoor: Modeling Sound Quality
10:00	Robinson: Outdoor Monitors	Shi: Analysis of Enclosure	Shinohara: Study of lateral attenuation	Krimm: Acoustical facade designs	Peeters: Monetization measures	zur Nieden: Noise and hypertension	Break
							18.2 (p. 77)
10:20	Granneman: Peak level limits industry	van de Walle: Parallel Time Simulations	Makino: Attenuation Takeoff-roll	Sauer: Soundscape in Surgery	Faber: Impact on Motorway	Weihofen: Aircraft noise and stroke	Abe: SPL perceived distance
10:40	Tupov: Noise reduction from intakes	Bajko: Meshless Method	Ishii: Weather effects	Wiseman: Captive animal soundscapes	Klaeboe: Economic analyses	Sørensen: Noise and atrial fibrillation	Son: HRTF analysis

Hall 1

11:00 **Keynote Lecture Stephen Rizzi**

"Toward Reduced Aircraft Community Noise Impact via a Perception-Influenced Design Approach"

11:30 **Keynote Lecture Thomas Beckenbauer**

"Tire/Road Noise Mitigation: A Challenge for both Acoustical and Civil Engineers"

12:00 **Lunch Break**

	Hall 7	Hall 8	Planten u.B.	Hall 13/14	Hall 15	Hall D	Hall E	Hall F
	Tyre/Road Noise 23.1 (p. 81)	Train Noise + Vibr. 22.1 (p. 81)	Advanced Meas. 02.3 (p. 64)	Active Control 01.1 (p. 63)	Sound Propagation 20 (p. 78)	Building Acoust. 07.2 (p. 69)	Vibroacoustics 27.01 (p. 83)	Building Acoust. 07.8 (p. 70)
08:00			Henning: PIV applied in Acoustics		Waxler: Infrasound Propagation	Christensen: Room acoustics for teachers		Yu: Simulation of Windows
08:20			Fischer: Membrane-free Laser Mic.		van der Eerden: Sound prop. large area	Nilsson: Acoustic model rooms		Tang: Plenum window transmission
08:40	Makwana: Safe and Silent Traffic	Grau: Wheel-ground interaction	Puhle: Sunflower spiral	Tanaka: Active cavity noise control	Hart: Long-range propagation	Simmons: ISO 11654 rating absorbers		Søndergaard: Open windows better sound
09:00	Winroth: Speed exponent analysis	Persson: Predicting Railway Vibr.	O'Donoghue: Panel Vibr. Deflectometry	Kensaku: Leakage Preventive Panel	Oshima: Absorption Mapping	Plötzner: Acoustics with Canopies		Yeung: Noise Reduction Balconies
			02.4 (p. 65)					
09:20	Cao: Tire Noise Loading Effect	van Leeuwen: Practice of railway vib.	Elliott: Passive Thermometry	Berkhoff: Parallel ANC online identif.	Break	Choi: Classroom acoustics	Mironov: Black hole equation solution	Break
09:40	Break	Break	Abe: Defect in Bridge	Break	van Renterghem: Parallel wall meteo eff.	Cheol-Ho: Diffuse sound field	Tang: Acoustic Black Hole Effect	Huang: Property test method
10:00	Lundberg: Tread Block-Road Contact	Bucinskas: Elevated High-speed Trains	Schmich-Yamane: Frost plugs in ducts	Höber: Stable ANC Headphones	Wilson: Sampling outdoor sound	Break	Denis: Nonlinearities in ABH	Hin-Leung: Case Study of Balcony
10:20	Li: Tread Pattern and Tire Noise	Arnesson: Vibration Exposure Sweden	Guettler: Modal Analysis of Fruit	Liu: Nonlinear Filter for FM	Lee: Sound fields in courtyards	Hanyu: Measuring scattering coef.	Feurtado: ABH Wavenumber Transforms	Kwok: Traffic Noise Mitigations
10:40	Zhang: Dyn. Rolling Contact Law	Dijkmans: Wave barriers ground vibr.	Fortini: Bending Stiffness Curve	Murao: Feasibility study on AAS	Gao: Traffic Noise Simulation	Piollet: Mobile Reverb. Room	Jeon: Spiral ABH	Zhang: Vibrations of Glass Panes

Monday, August 22, 2016 (continued)

	Hall 1	Hall A1	Hall A2	Hall B1	Hall B2	Hall C1	Hall C2
	Industrial Noise 12 (p. 74)	Numerical Acoustics 16 (p. 75)	Aircraft Noise Exterior 04.2 (p. 67)	Soundscape 21.1 (p. 79)	Envir. Noise Directive 09.1 (p. 72)	Noise and Health 29.1 (p. 85)	Psychoacoustics 18.2 (p. 77)
13:00	Tupov: Silencers of Exhaust Fans	Moheit: Modes exterior acoustics	Nguyen: Noise Contours Airport	van Kamp: Restorative function of sound	Dittrich: Policy Indicator	Heroux: Policy and methods	Leung: Natural Sound Masking
13:20	van Dijk: Energy label for acoustic sile	Filippoupolitis: Validation FE models	Clairbois: Airport noise: benchmarking	Marquis-Favre: Combined urban annoyance	Jäschke: Better noise maps	Stansfeld: Noise and Health	Masullo: Mitigations in urban parks
13:40	Ellerton: Tonal Noise from Drilling Rig	Retka: Biology and technology	Torija Martinez: CO2 Noise Forecast UK	Cik: Psychoacoustic indicators	Myck: Multiple sources	Belojevic: Guideline recommend.	Sakamoto: Effects of Vibration
14:00	Nagy: Disc resonators	Zhang: Perforated Sheets	Knowles: Local community airports	Heinonen-Guzejev: Odor perception	Tokashiki: Aircraft Noise and School	Brink: Implementation Guidelines	Altinsoy: Audiohaptic Steinway
						29.2 (p. 86)	
14:20	Teague: Noise Reduction Defence	Hartmann: Dynamical Energy Analysis	Trow: Aircraft Noise Mapping	Riedel: Noise action planning	Hu: High-Speed Train Metrics	Guski: WHO noise annoyance	Merchel: Perceived Vibration Intensity
							18.4 (p. 78)
14:40	Hay: Dairy Factory Noise	Xue: Plate under shock loading	Minard: Aircraft tonality indicators	Engel: Perception in public park	Larsson: Updated Emission Models	Gjestland: Noise surveys at airports	Chihiro: Modeling Multimodal UX
	15:00 Poster Session (see page 22)						
		Aircraft Noise 04.1 (p. 66)			09.2 (p. 72)		
15:40	Geisler: Pipework noise optimization	Balakrishnan: Jet Noise Reduction		Klaeboe: Windmill noise and attitudes	Stapelfeldt: Infrastructural Models	Cointin: US Aircraft Survey	Ohtomi: Delight design hair dryer
16:00	Márkus: Noise Control Action Plan 1	Lu: MAV noise reduction		Sun: Sound source visibility	Lechner: Translation road data	Ogata: Health effects NAA-1	Di: Psychoac. Annoyance Model
16:20	Muntag: Noise Control Action Plan 2	Guettler: Eigenvalues aero-acoustics		Fatima: Hospital Soundscape	Bertellino: CNOSSOS interim meth.	Hiroe: Health effects NAA-2	Carr: Responses to car wind noise
							Urban Sound Planning 25.1 (p. 83)
16:40	Gerges: Noise Exposure Calculation	Junger: Low Pressure Axial Fan		van den Bosch: Safe and Sound	Majjala: Noise Monitoring Air Base	Nguyen: Surveys on response	Alves: Overview Urban Planning
17:00	Stigwood: Diminishing noise stand.	Mancini: Taylor-Lorentz BEM		Welch: Health and Airport Noise	Lylloff: NIA in early stages	Morinaga: Military Aircraft Annoyance	Maag: Sonic public realm
17:20		Trümner: Jet Noise Analysis				Yokoshima: Shinkansen Railway Noise	Garcia: Bilbao Sound Strategy
17:40						Yokoyama: Percept. tonal components	Bin: Urban Noise in Singapore

	Hall 7	Hall 8	Planten u.B.	Hall 13/14	Hall 15	Hall D	Hall E	Hall F
	Tyre/Road Noise 23.2 (p. 82)	Advanced Meas. 02.6 (p. 65)	Manfred Heckl 11 (p. 73)	Active Control 01.1 (p. 63)	Sound Propagation 20 (p. 79)	Building Acoust. 07.5 (p. 69)	Vibroacoustics 27.01 (p. 83)	Building Acoust. 07.1 (p. 68)
13:00	Pinnington: Tyre contact forces	Bacelar Milhomem: Diffuse-field Mic. Calibr.	Scheuren: Manfred Heckl	He: Symmetric Multichannel ANC	Zhao: Meteorological Effect	Saher: Reverb. Chamber Model	Huang: 2D Acoustic Black Hole	Simmons: Traffic annoyance reduction
13:20	Ishihama: Stress Distribution on Belt	Kling: Ultrasound calibration	Scheuren (contin.)	Ranjan: Selective ANC system	Ohshima: Meas. Refraction Path	Judd: Diffraction in Software	lh: Optimization of ABH	Rasmussen: Acoustic regulations schools
13:40	Klein: 3D tyre/road envelopment	Chen: Enhance shock calibration	Ochmann: Equivalent source method	Bhan: Open Window ANC	Hirsch: Sound Weather	Marbjerg: Scattering in simulations	Bowyer: ABH Manufacturing	Kylliäinen: Impact sound insulation
14:00	Bezemer-Krijnen: Tyre-road noise meas.	Zhang: Digital meas. microphone	Pavic: Characterisation of sources	Quintana Soler: Active Shielding	Alarcon: Noise variance analysis	Husztly: Optimization for reflectors	Zhou: ABH-based resonators	Hosolen: Perceived Impact Sound
14:20	Kindt: Road Traffic Noise	Ohya: Wireless measurement	Gibbs: Building Acoustics	Christoph: Novel Analysis for ANC	Yumi: Characteristics of EA Method	Henry: Fast modeling buildings	Guasch: Transfer matrices for ABH	Milford: Socio-Ac. Survey Norway
14:40	Hoever: Rolling Noise Joints/Gaps	Rivera Benois: Headphone TF	Kropp: Acoustic modelling	Kleinhenrich: ANC Reflection Equivalence	Buytaert: Comparison software	Sobreira Seoane: Wavelets and reverb.	Prill: Automotive ABH Simul.	Danielsson: Regulatory enviro. Iceland
	15:00 Poster Session (see page 22)							
					Vehicle Ac. Train 28 (p. 85)	07.4 (p. 70)	27.07 (p. 84)	
15:40	Tanaka: Cavity Resonance	Soares: Audiometer Correction	continued / discussion	Kim: Directivity Control	Troge: Train Gearbox Acoustics	Kim: STL double plates in duct	Hopkins: ASEA beam frameworks	Bayazit: Regulation for buildings
16:00	O'Boy: Tyre cavity noise	Winker: Anechoic chamber	continued / discussion	Kletschkowski: Vibration control seals	Sen: Presentation cannot be held	Reynders: Modal behavior and STL	Li: Local response prediction	Beentjes: Transformation
			Materials 14.3 (p. 75)	01.2 (p. 64)				
16:20	Kitahara: Modal identification	Nykaza: Spectrograms	Seiffert: Acoustic cleaning	Scheuren: 60 Years of Noise Contr.	Asahina: Transfer Path Analysis	Hopkins: FEM solid timber floor	Yohei: Expanded SEA model	Dong: Multifamily classific.
		Prod. Sound Qual. 17.1 (p. 76)						
16:40	Matsubara: Tire vibration model	Genuit: Alternative alert signal	Genc: Luffa fibers bio-composites	Zafeiropoulos: Active control road noise	Sievi: Sound engineering OTPA	Poblet-Puig: Amplified catalogue of Kij	Chimeno: SEA for restricted systems	Danielsson: Insulation older buildings
17:00	Baro: Tyre cavity noise	Bodden: Sound Design el. Vehicles	Wu: Package Optimization	Shibatani: Sound quality control	Lutzenberger: Optimum reduction index	Dijkmans: Variability flanking Kij	Magrans: Path based sub-structuring	Matsushita: Evaluation Floor Vibrations
17:20		Yasui: Effect of envelope	Bécot: Predicting alpha cabin	Tamm: Holistic NVH simulation		Guigou-Carter: Building performance	Takeshi: Low-vibration design	Virjonen: Optimized ref. spectrum
17:40		Jacobsen: Partial Loudness		Wang: Active noise barrier		Glebe: Low-freq. Models		Lee: Psychophysiological resp.

Monday, August 22, 2016 - POSTER SESSION

15:00 - 15:40 | Foyer D-G and Foyer 1

Active Control P01 (p. 58)	Building Acoustics P02 (p. 59)	Psychoacous- tics, Product Sound Quality, Soundscape P05 (p. 59)	Advanced Measurement Techniques P07 (p. 60)	Underwater Acoustics and Ship Noise P09 (p. 61)	Vehicle Acoustics P11 (p. 61)	"Education - Take 5" P12 (p. 62)
Zone B+C	Zone A	Zone G	Zone F	Zone D	Zone H	Zone E
Akasaka: Piezoelectric absorber	Arjunan: Sound transmission	Devos: Soundecology	Araujo: Comparison Beamforming	Luo: Line Spectrum Extraction	Bock: Compensation indoor passby	Dostal: Auditory Demonstrations
Hiruma: Wind Noise Cancellation	Barré: Beamforming concert halls	Echevarria Sanchez: City planning and noise	Han: DOA Trapezoidal Array	Lv: Hydrodynamic Noise	Bouzek: eCall System Measurment.	Kirkegaard: Unfolding Utzon
Muto: MRI noise canceller	Cho: New method Sound Masking	Kubo: Speakers and listeners	Jinlin: New Measurement Method	Pedersen: Ranging of Submarines	Kim: Performance of a Seat	Masuda: L2 perception in noise
Passanesi: Control of Impact Sound	Chun: Impact Sound Reduction	Kubo: Engine sound design	Murakami: Anemometer by wind noise	Skarsoulis: Shipping noise	Mizumachi: In-car speech intelligibility	Sarradj: Jupyter notebooks
Sharifzadeh Mirshekarloo: Piezoelectric Speakers	Doi: Low frequency sound	Minami: Bone Conducted Speech	Oikawa: Optical Field Imaging	Wu: High- Resolution DOA	Özkan: Pressure Drop of Filters	
Youngeun: Sound absorbing method	Kim: Floor Impact Sound	Wu: Sound quality of BEV	Papa: Sound Power Level of UAV	Yang: Underwater Target Recogn.	Wanke: Integration Hybrid E-Drive	
	Schlosser: Measurement Absorption	Yamauchi: Impression unknown sound	Sakai: Wind noise reduction		Wanke: E-Machine Skewing Patterns	
	Song: Dynamic stiffness		Wang: Calibration Hydrophones		Zuzjak: Non-uniform Sound Field	
	Yuya: Soundproofing ventilation unit		Zhang: Aeroacoustic study PIV			
	Zuchetto: CNOSSOS-EU Sensitivity		Zhihong: Array generating approach			

Tuesday, August 23, 2016 - POSTER SESSION

15:00 - 15:40 | Foyer D-G and Foyer 1

Noise from Industry and Machinery P03 (p. 88)	Vibroacoustics, Aeroacoustics and Materials P04 (p. 89)	Environmental Noise Directive, WHO Environmental Noise Guidelines P06 (p. 89)	Urban Sound Planning P08 (p. 90)	Tyre/Road and Train Noise P10 (p. 91)
Zone B+C	Zone A	Zone G	Zone F	Zone D
Chen: Multiple NES coupling	Bai: Absorbing characteristic	Hiraguri: Road Noise Maps Japan	Aletta: Soundscape descriptors	Akutsu: Shinkansen at Cuttings
Fahmy: Acoustic Fatigue Analysis	Chou: Perforated ABS panels	Kopania: Acoustics of owl wings	Alves: Practical implementation	Baranovskii: Railway Noise Modeling
Fahmy: Fatigue Damage Vibration	Fatima: Acoustical characterization	Moriyara: Activity disturbances	Estévez Mauriz: Urban space and sound	Cizkova: Low Height Noise Barrier
Matsumura: FRFs by Wave	Fukada: Vibration and Infrasound	Park: Improvement method	Estévez Mauriz: SONORUS test sites	Deok-Soon: Analysis of Traffic Noise
Schoenherr: Elastic Decoupling	Park: Characterization of AAM	Tuna: Drive-by Noise Mapping	Filipan: Auditory attention modeling	Ohm: Analysing Tire/Surface Noise
Stauber: Wind Turbine Attenuation	Sadouki: Ultrasound characterization	Tuna: Tomographic Mapping	García Merino: Auralisation fan noise	Tsujiuchi: Evaluation Model
Takahashi: Bone-conduction voice quality	Tsukernikov: Element hysteresis friction	Ueda: High frequency noise	Hoar: Web based assessment	Wehr: Tyre hardness temperature
Turunen: Wind turbine noise annoy.	Zhang: Stochastic FE Instability	Wolff: Ultrasound at workplaces	Jiang: IVR for noise assessment	
	Zhou: Airports Noise Assessment		Kirkegaard: Urban Tranquility	
			Margaritis: Green spaces and traffic	
			Puyana Romero: Classification of areas	
			Rietdijk: Auralization aircraft noise	
			Witsel: Outdoor shooting range	
			Zachos: Traffic auralisation tools	

Tuesday, August 23, 2016

	Hall 1	Hall A1	Hall A2	Hall B1	Hall B2	Hall C1	Hall C2
	Materials 14.1 (p. 102)	Numerical Acoustics 16 (p. 104)	Aircr. Interior Noise 05.2 (p. 94)	Soundscape 21.2 (p. 108)	Envir. Noise Directive 09.4 (p. 100)	Psychoacoustics 18.5 (p. 106)	Urban Sound Planning 25.1 (p. 112)
08:00	Boubel: Porous granular materials	Conceição: Thermal acoustical study	Gustavsson: Self-Adaptive Device	Watts: Tranquillity Trails		Kuwano: Sharpness evaluation	
08:20	Xie: Lightweight Material	Pavic: Multi-space modelling	Petrone: Soundproofing Materials	Nagahata: Survey Earthquake Victims	Novak: Noise Mapping Quiet Areas	Verhey: Tone adjustment	Cheng: Preventive Planning
08:40	Karpinski: Activated Carbon Felts	Liu: ESM Room Acoustics	Klabes: Pressure Point Spectra	Lundén: Urban Soundscape Mapping	Maag: The quiet city	Dendievel: Tonality perc. evaluation	Zhang: Management Policy USQZC
09:00	Wang: Resonators array	Kim: Damage Detection	Robin: Alternative transmission loss	Mossberg: Sound Environm. Center	Petersen: Experiences and Sensations	Davidsson: Planning Psychoacoustics	Rodriguez-Manzo: Urban Areas in Mexico
09:20	Zhang: Acoustics Porous Metals	Break	Break	Break	Aspuru: Assessing quiet areas	Break	Yordanov: Sustainable Noise Reduction
09:40	Setaki: New Absorption Materials	Neuhierl: Silencer Flow Noise	Baschke: Adaptive boundary system	Yu: Built environment	Schacht: Identification Quiet Areas	Ellermeier: Pixelated speech	Break
10:00	Shinsuke: Resonator with winding neck	Barrera-Figueroa: Environmental coefficients	Petitjean: Optimisation noise control	Hong: Soundscape commercial area	Break	Chun: Combined Annoyance Model	Ozcevik: Presentation cannot be held
					09.3 (p. 100)		
10:20	Simon: LONAR in flow	Cutanda Henriquez: Plane wave couplers	Scheidler: Rotorcraft NVH control review	Oberman: Temporary shelters	Eggers: Novel Approach Evaluation	Parizet: Hearing loss simulator	Puyana Romero: Soundscape expectations
10:40	Liu: Enhancing MPP Absorbers	Marburg: Benchmark cases	Ungnad: Robust Adaptive ANC	Cheng: Emotions Alteration	Jensen: Noise Barrier Project	Fastl: Partial masking	Axelsson: Park Soundscape Quality

Hall 1

11:00 **Keynote Lecture Siv Leth**

"Silent Electric Train Transportation - Present and Future Technologies"

11:30 **Keynote Lecture Christ de Jong**

"Underwater Radiated Noise of Ships: Measurement and Mitigation"

12:00 **Lunch Break**

	Hall 7	Hall 8	Planten u.B.	Hall 13/14	Hall 15	Hall D	Hall E	Hall F
	Tyre/Road Noise 23.3 (p. 110)	Prod. Sound Qual. 17.1 (p. 105)	Active Control 01.2 (p. 92)	Vehicle Ac. (Car) 26.2 (p. 114)	Underwater + Ship 24.3 (p. 111)	Building Acoust. 07.2 (p. 96)	Vibroacoustics 27.07 (p. 116)	Building Acoust. 07.3 (p. 97)
08:00	Sandberg: Improving CPX Method	Carbajo: Low-cost array	Treyer: Noise cancelling chair	Bienert: Vehicle Noise Statistics	Abshagen: Underwater towed body	Dehlbæk: Human noise open offices	Katsuhiko: SEA Subsystems	Himmel: Isolation Exhaust Fan Noise
08:20	Mioduszecki: Temperature influence	Minard: Car HVAC sound	Ken: Effects Characteristics NN	Lee: Squeak Apparatus	Shuri: Ship Noise Prediction	Liebl: Positive ventilation sound	Mueller: Sidewall Panel Optim.	Tijmsma: Energy coupled rooms
08:40	Bergiers: Reference tyres CPX method	Campillo - Davo: COST Action TU1105	Hanselka: Active Noise Blocker	Lee: Analysis of Squeak Apparatus	Ciappi: Wall pressure models	Kirch: Low and mid freq. design	Zhang: Ship EFEA-SEA Modeling	Wu: Insulation of LSGLC Wall
09:00	Schubert: Influence tyre impedance	Break	Carme: Active opening windows	Lee: Absorption materials in car	Magionesi: Flow induced struct. noise	Tunc Kurt: Open Plan Office	Reddy: Modal Parameters IMCM	Iwase: Resonance penetration
		17.2 (p. 106)					27.03 (p. 115)	
09:20	Break	Xue: HVAC sound quality	Siviero: TL active SI control	Frank: Ext./int. vehicle sound	Meyer: Randomly excited shell	Break	Break	Erdil: Transmission Analyses
09:40	Licitra: Tyre/road noise measures	Atamer: Shaver Sound Quality	Hesse: Active control of sound	Min: Road-Induced Noise	Break	Tschakert: Telephone booths	Adams: Scaling vibrating structures	Break
								07.6 (p. 98)
10:00	Skov: Level relations CPX/SPB	Boussard: Sketching Step	Yao: Harmonic identification	Kabat Vel Job: Simulation Cabin Noise	Liu: Jet-bubble formation	Kohlert: Wellbeing working acoustics	Robin: Similitudes for plates	Gibbs: Structure-borne transmission
10:20	van Blokland: Uncertainty in CPX	Shukunami: Effects of stimulus intensity	Enginoglu: Mass Distribution Control	Matuszewski: Early reflections in cabins	Wu: Jet-bubble noise	Rizzi: Perception of room modes	Kook: Combined Bandgap structure	Vogel: Prediction sound pressure
10:40	Tonin: RONDA CPX Certification	Alexandrou: Marine and Mining	Ebert: Mastering Tonalties	Li: Meas. absorption coefficient	Chu: Bubble acoustic imaging	Mohanty: Interior acoustics and speech	Brunskog: Variational method	Takebayashi: Structure-borne prediction

Tuesday, August 23, 2016 (continued)

	Hall 1	Hall A1	Hall A2	Hall B1	Hall B2	Hall C1	Hall C2
	Machinery Noise 13.1 (p. 101)	Numerical Acoustics 16 (p. 104)	Aircr. Interior Noise 05.1 (p. 94)	Noise and Health 29.5 (p. 117)	Envir. Noise Directive 09.3 (p. 100)	Psychoacoustics 18.5 (p. 107)	Urban Sound Planning 25.1 (p. 113)
13:00	Utakapan: Measurement Gear Noise	Keuchel: Isogeometric BEM	Scheel: Interior Developments	van Kamp: Effectivity Interventions	Lillelund: Noise Insulation Denmark	Takeo: Evaluation sleepiness	van den Berg: Healthy side
13:20	Neubauer: Inequidistant gearing	Dilba: BEM H-Matrix reduction	Wandel: Flight LAB Platform	Brown: Implications of Interventions	Mesihovic: Updated Spectrum	Bi: Characteriz. Car Sounds	Lepore: Soundscapes and behaviour
13:40	Miccoli: Pump Noise Field Analysis	Piscoya: Barrier above absorb. ground	Omais: Engine cabin noise	Schreckenberga: Airport Noise Respite	Bartolomaeus: Low Noise Road Surfaces	Huth: Psychoac. Noise Barriers	Margaritis: Noise resistant parks
14:00	Dilba: Wind power plant	Svensson: Multi-edge barrier tops	Teschner: Excitation Coupling	Dryden: English noise policy	Dilas: 4 research projects	Yoon: Hearing sensitivity estimation	Jiang: Mapping Integrated Impact
							Advanced Meas. 02.5 (p. 92)
14:20	Buzzoni: Vibratory feeders	Kamrath: Augmenting Methods	Winter: Fuselage dynamics	Gidlöf-Gunnarsson: Benefits Quiet Side	Imtiaz: Exchange rates	Cik: Tramway psychoacoustic	Manvell: Apps Make Sound Work
14:40	Zhang: Method Machine Design	Kasess: Railway BEM calculations	Biedermann: Advanced cor-rel. criteria	Fryd: Annoyance Motorways	Break	Schell-Majoort: Annoyance aircraft cabins	Botteldooren: Arrays for industrial noise
15:00 Poster Session (see page 23)							
			05.4 (p. 95)	Soundscape 21.3 (p. 109)	Noise+Health 29.6 (p. 118)		
15:40	Rowe: Reducing noise of UAV	Jean: Vibration transfer	Berry: Reproduction of cabin noise	Bauer: ISO Soundscape Architects	Can: Comparing noise indicators	Nguyen: P-F Test on attitudes	Skinner: Long term baseline monit.
16:00	Nakamura: Non-linear damper modeling	Waubke: Coupling BEM and shells	Töpken: Multi-tone sounds	Jordan: Historic Soundscapes	Licitra: END Noise mapping	Yoshida: SQ of Washing Machine	Heiss: Uncertainty Descriptors
	Vibroacoust. 27.08 (p. 116)						
16:20	Lee: Elastomer Joints	Gaul: Fast BE-FE Approaches	Wempe: Buzz Saw Noise	Ma: Restorative environm. factor	Mauny: Neighborhood and noise	Beldam: Room Acoustics Healthcare	Leiba: Urban acoustic imaging
16:40	Oberst: Hip squeak contact analysis	Lang: Foundation Impedance	Ghinet: Helicopter Cabin Noise	Echevarria Sanchez: Visual and sound design	Wunderli: Intermittency Ratio IR	Yamada: Teeth grinding sounds	Nakajima: DNN Sound Recognition
			05.3 (p. 95)				
17:00	Coguenanff: Uncertainty quantification	Pang: Underwater Noise Radiat.	Borello: Fuselage Transmission	Çankaya: Soundscape in high schools	Brink: Temporal variat. effects	Baker: Equal energy principle	Araujo: Impulse Resp. Beamforming
17:20	Clement: Vibroacoustic of structure	Miao: Vibration source	Amador Medeiros: Surface Press.	Tomas: Improving urban sound	Cik: Soundmapping approaches	Voix: Spectrum Uncertainty HPDs	Ikuta: Bayesian Filter
17:40	Sepahvand: Random transm. loss		De Rosa: Similarities of Ac. Volume	Yuan: Chinese Garden	Dekoninck: Instantaneous traffic	Lee: Construction noise	Mzah: Noise-Robust Reverb. Time

19:00 Banquet on the Cap San Diego (see page 41)

	Hall 7	Hall 8	Planten u.B.	Hall 13/14	Hall 15	Hall D	Hall E	Hall F
	Tyre/Road Noise 23.3 (p. 111)	Noise Barriers 15 (p. 103)	Materials 14.2 (p. 102)	Vehicle Ac. (Car) 26.4 (p. 115)	Underwater + Ship 24.3 (p. 112)	Building Acoust. 07.7 (p. 99)	Vibroacoustics 27.03 (p. 115)	Building Acoust. 07.6 (p. 99)
13:00	Conter: ROSANNE Project	De Leo: State of NRD	Jaouen: Porous media	Bernhauser: Metric of Whistling Noise	Yang: EK-NN target recognition	Stanojevic: Noise angular distribution	Klaerner: Non-equidistant power	Reinhold: FEM structure-b. power
13:20	Anfosso Ledee: Road noise characterization	Houtave: In-situ barriers measurem.	Zine: Air-saturated materials	Yun: Modified index for knocking	Zhang: NEK-NN algorithm	Zuccherini Martello: Model of Shading	Jeong: Damping Materials	Kohrmann: Design of wooden floors
13:40	Kneib: Continuous Road Traffic	Hoislbauer: Reflexion of noise barriers	Niskanen: Porous Materials Meas.	Wu: iPhone Based Bin. Recorder	Shen: Classifying ship noise	Bublic: Wind noise on facade	Lu: Membrane acoustic silencer	Schöpfer: SEA timber-frame wall
14:00	Houzu: SSL Image Processing	Schwanen: Noise barriers testing	Wei: Inverse FEM method	Carbajo: Vibroacoustic annoyance	Yang: Modulation Recognition	Kovalainen: Sound Insulation Balconies	Nishida: Acoustic Resonance Boiler	Griffin: Rain noise prediction
					Train Noise + Vibr. 22.3 (p. 109)			
14:20	Berge: Noise monitoring vehicles	Chudalla: Scattered Diffraction	Robin: Absorption diffuse	Schuhmacher: Separ. Engine-Tyre	Appel: Abatement of rail noise	Secchi: Performances of Facades	Pan: Belt Drive Vibr. Analysis	Agren: Flanking transmission
14:40		Ziegelwanger: Acoustic resonator	Brown: AM materials in scale models	Swart: El. Vehicle Sound Qual.	Hecht: Monitoring Railway	Nash: Facade Sound Isol.	Kandemir: Holed-Hollow Spheres	Golden: Cross-Lamin Timber Panel
	15:00 Poster Session (see page 23)							
	Auralisation Env. Sound 06 (p. 96)		Wind Turb. Noise 30 (p. 119)	26.1 (p. 113)		07.5 (p. 98)	27.10 (p. 117)	
15:40	Pieren: Auralisation Railway Noise	Arjunan: Acoustic interference	Rybka: Mapping of Wind Turbines	Krämer: Simulated Pass-By-Noise	Verhelst: Train Wheel Roughness	Damjanovic: Denoising by wavelets	Hambric: Sandwich Panel Tutorial	Hiramitsu: Floor Impact Sound in CLT
16:00	Maillard: Pedestrian Paths	Lee: Sonic Crystal Noise Barriers	Kimura: Investigation WTN Japan	Thivant: PWT acoustic shields	Kuijpers: Roughness control real-life	Jankovic: RIR Nonlin. Decay Model	Geweth: Non-destructive testing FRC	Burkhart: Boomy screeds
								Aeroacoust. 03.1 (p. 93)
16:20	Southern: Road Tyre Noise Aural.	Wilson: Infrastructure Noise Control	Perkins: Amplitude-modulated WTN	Höstmad: Low noise heavy-duty vehicles	Eichenlaub: Wheel roughness testing	Ljunggren: Rev. Time below 50 Hz	Saati Khosroshahi: Membrane String Instr.	Mori: Flow Ind. Noise of the pipe
					22.4 (p. 110)			
16:40	Finne: Road Noise Auralisation	Marcocci: Barriers in Wallonia	Akinori: WTN and residual noise	Arsic: Ext. Noise Development	Setsohbonkul: LCA of rail	Schoenwald: ISO16283 for small rooms	Kim: Sound radiation in a CFRP	Sack: Modal filters
17:00	Meng: Moving source aural.	Tracc: Noise on Property	Herrmann: Infrasound wind turbines	Choi: Cavity Model	Aoki: Study of Acoustic Grinding	Shearer: Absorption below 100Hz	Zhang: Plate with points supported	Schlachter: Turb. Energy Vibroacoust.
17:20	Zachos: Background traffic noise	Oltean-Dumbrava: Sustainability	Marini: LFN by wind turbines	Lu: Motorcycle Sound Refin.	Noori: Double-deck Tunnel	Haddad: In-situ impedance		Hwang: TBL noise
17:40	Bergner: WFS in Virtual Eng.	Reiter: Noise Barrier Optimization	Pleban: Wind Turbine Vicinity	Abolfathi: Dynamic stiffness	Martin: Window Ventilation	Santoni: CLT Rad. Efficiency		Dehner: Simulation of surge

Wednesday, August 24, 2016

	Hall 1	Hall A1	Hall A2	Hall B1	Hall B2	Hall C1	Hall C2
	Machinery Noise 13.1 (p. 126)	Numerical Acoustics 16 (p. 128)	Aircr. Interior Noise 05.3 (p. 122)	Soundscape 21.5 (p. 130)	Noise and Health 29.4 (p. 139)	Advanced Meas. 02.1 (p. 120)	Urban Sound Planning 25.1 (p. 134)
08:00	Schrader: Absorption Graded Mater.		Serhat: Composite Fuselages		Clark: Noise and mental health	Di Marco: UAV Aeroacoustics	
08:20	Izuchi: Wall Thickness Effect	Pang: Acoustic Time-frequency	Dupont: Transformer noise	Steffens: Music and environment	Clark: Noise and Cognition	Hald: Exterior panel contribution	Lugten: Aircraft noise around building
08:40	Kamijo: Noise-generating Mechanism	Pang: Ice-breaking	de Langhe: Simul. Sound Transmission	Bild: Music in Public Spaces	Christensen: Childhood overweight	Hald: CSM diagonal reconstruction	Law: Expansion in QPME
09:00	Brereton: A model noise declaration	Pang: Underwater Noise	Zoghaib: Predesign aircraft noise	Steele: Musikiosk question. result	Basner: Sleep Evidence Review	Siegel: Investigation Aeroacoustics	Estévez Mauriz: Traffic dynamics
09:20	Dittrich: ODELIA Study	Wang: SEA for Ship Design	Gustavsson: Projection Method	Tarlao: Validation soundscape scale	Rudzik: Transport. Noise and Sleep	Le Roux: Ducts characterizati-on	Lee: Change in Melbourne
09:40	Patel: Sander Emission Data	Preis: SEA Prediction Train	Shorter: Generalized SEA	Skoda: Combined environm. sounds	Thiesse: Glucose metabolism	Hurst: Compressed sensing	Break
10:00	Probst: Machinery Noise	Break	Break	Sudarsono: Soundscape Simulation	Break	Break	Kropsch: Farm Noise and Planning
		Aeroacoust. 03.2 (p. 121)	Dynamap 08 (p. 125)			02.2 (p. 120)	
10:20	Demirtekin: Flow Induced Noise	Huang: Scattering Serrated Plate	Bellucci: LIFE DYNAMAP	Dance: Facing the Music	McGuire: Methodology Sleep Study	Ih: Leak detection in a duct	Zhao: 3D Traffic Noise Prediction
10:40	Break	Biedermann: Noise Reduction Modelling	Zambon: Dynamic map urban noise	Break	Elmenhorst: Attitude and Sleep Quality	Bai: Farfield random array	Spaans: Noise management system
	13.2 (p. 127)			Psychoacou. 18.3 (p. 128)			
11:00	Ümütlü: Presentation cannot be held	Juknevičius: Leading edge serration	Nencini: Low cost devices	Hamamura: Gender differences loudness	Xiao: Effect of Mouth Opening	Fernandez Comesana: Optimizing p-u array NAH	Ozer: Road-Building Distance
					29.7 (p. 140)		
11:20	Hızarcı: Presentation cannot be held	Roger: Airfoil noise reduction	Socoró: Events detection in traffic	Oberfeld-Twistel: Loudness temp. weights	Guski: NORAH Overview	Djordjevic: Mic. array construction	Sillo: Noise mapping in service
11:40	Weinberger: Total Transmission Error	Reichenberger: Flap Side Edge	Cerniglia: GIS based software	Ponsot: Loudness Processing	Moehler: NORAH acoustics	Liu: Identification sound source	Zhang: Temporal 3D Mapping

	Hall 7	Hall 8	Planten u.B.	Hall 13/14	Hall 15	Hall D	Hall E	Hall F
	Tyre/Road Noise 23.2 (p. 131)	Green Noise Control 10 (p. 125)	Wind Turb. Noise 30 (p. 141)	Vehicle Ac. (Car) 26.3 (p. 135)	Underwater + Ship 24.2 (p. 133)	Building Acoust. 07.5 (p. 123)	Vibroacoustics 27.02 (p. 137)	Building Acoust. 07.6 (p. 124)
08:00	Maeck: Low noise pavements		Large: Amplitude modulation		Wang: Calculation ship noise		Claeys: Metamaterial as insulation	Hirakawa: Transient power input
08:20	Egger: Low-noise Pavements		Okada: Directivity of WTN		Santos Dominguez: Shallow waters prop.	Crispin: Dynamic stiffness meas.	Egashira: Metamaterial Panel Cylinder	Kim: Floor-Impact Noise Red.
08:40	Cesbron: In situ testing of PERS		Kühner: Amplitude Modulation		Korany: Classification ship noise	Le Roux: Silencers characteriz.	Andersen: Mitigating Ground Vib.	Tröbs: Radiation timber floor
09:00	Männel: Ageing of roads	Liu: Impedance Deduction	Weber: Small Wind Turbine	Alber: In-situ blocked force method	Zerbs: Monitoring ship noise	Hongisto: Office furniture & booths	Ziaran: Structure-borne noise	Lim: Acoustic visualization
09:20	Bérengrier: ODSurf project	Jang: Scale model trees	Jansen: Operational Wind Farm	Kim: Steering Gear System	Klaveness: Cooperating Noise Control	Lietzén: Rating of Concrete Floors	Li: Parameters Implementation	Yoon Joon: Heavy-weight Floor Impact
09:40	Altreuther: Low noise concr. roads	Forssén: Urban ac. screen	Poulsen: Health & Wind Turb.	Sendur: Steering Wheel Vibr.	Donavan: Implosion Noise	Höller: Lab. Flanking Study	Li: Shadowing Effect	Barutçu: Vibr. Analys. Station
							27.06 (p. 138)	
10:00	Andriejauskas: Low noise pavement	van Leeuwen: Bamboo as noise barrier	Backalarz: Wind turbine and road	Sagar: Dual Muffler H-connection	Gerdes: Pile driving noise	Break	Creixell-Mediate: Multi-Model Reduction	Rabold: Impact flanking transmission
		Sound Power 19 (p. 129)	Materials 14.4 (p. 127)					Vibroacoustics 27.09 (p. 139)
10:20	Break	Wittstock: Concept of traceability	Break	Gatignol: Wet Noise V-Ribbed Belt	Bruns: Wave propagation	Seidel: Flanking metal stud walls	Andersen: Ground Vibration	Wuehrl: Modal damping signals
				26.5 (p. 136)				
10:40	Sandberg: Properties of Winter Tyres	Kirbas: Primary Power Source	Lunain: Efficiency green wall	Qu: Quasi-zero Stiffness	Ruhnau: Offshore Pile Driving	Patil: Airborne TPA applications	Aragonès: Imperfect Plates Response	Witte: Acoustics of Pumps
11:00	Ishihama: Tire Cavity Sound Meas.	Arina: Modelling Primary Source	Attal: Green wall samples	Lafont: Application of SEA on car	Bohne: Modelling bubble curtains	Sakamoto: Constr. Anechoic Rooms	Gaonán: Vibro-acoustic analysis	Marchetto: Panels Excited by a DAF
						07.2 (p. 123)		
11:20	Yang: Tire cavity noise	Cellard: Automatic sampling	Akamatsu: Properties of MPPs	Charpentier: Tank Slosh Noise	Lützen: Bubble Curtains Prediction	Nielsen: Restaurant Acoustics	Guan: Vibration plate with hole	Langer: Efficient modeling
11:40	Mori: Noise Environm. Pavement	Brezas: Dis-semination of unit Watt		Abdelkader: Ac. shape optimisation	Elmer: Piling Noise Attenuation	Zhang: Soundscape in restaurant	Persson: High-rise Buildings	Liu: Vibration analysis

Wednesday, August 24, 2016 (continued)

	Hall 1	Hall A1	Hall A2	Hall B1	Hall B2	Hall C1	Hall C2
	Machinery Noise 13.2 (p. 127)	Aeroacoustics 03.2 (p. 122)	Dynamap 08 (p. 125)	Psychoacoustics 18.3 (p. 128)	Noise and Health 29.7 (p. 140)	Advanced Meas. 02.2 (p. 121)	Urban Sound Planning 25.2 (p. 135)
13:00	Akei: Optimal location	Break	Radaelli: Noise maps calculation	Tsuzaki: Pitch - Ends of Periodicity	Schreckenberg: NORAH airport noise	Rodriguez: OTPA weakness real case	Burgess: Resident Recreation Conflicts
13:20	Fromberger: Condition Monitoring	Zhou: Adjoint-based Noise Control	Bellucci: Dynamap in Rome area	Ito: Across-ear gap detection	Klatte: Aircraft noise and children	Meggitt: Air-Borne Characterisation	Akbulut Çoban: Noise Policy Applications
13:40	Ulriksen: Damage localisation	Schneider: Axial fan tip noise	Krijnders: Soundscape and EIA	Kuroda: Dichotic continuity illusion	Mueller: NORAH Sleep Study	Klaus: 3D sound intensity scanner	Sepulcri: Model. human aggregations
14:00	Guo: Circuit breaker's signal	Lam: Thick Airfoil Aeroacoustics	Geréb: ReSoNo Test Birmingham	Fiebig: Cognitive stimulus integration	zur Nieden: NORAH blood pressure	Albers: Power Determination	Tijmsma: Recreational management
14:20	Kozupa: Transformer winding	Croaker: Wall-mounted foil	Dynamap future development (discussion)	Bockstael: Communicating in noise	Seidler: Disease risks traffic noise	Nagamatsu: Experim. Results DNAH	Ottoz: Recreational Noise
14:40		Geyer: Leading edge noise	Dynamap future development (discussion)	Kwon: Design of Sporty SQI	Giering: WTP in the Rhine-Main	Fukuda: Evaluation methods floor	Cerniglia: Advance noise analysis

15:00 Hall 1 **Plenary Lecture Marc Schönwiesner**

"Tuning the Brain for Sound: Solvable Problems in Auditory Neuroscience"

15:45 Hall 1 **Closing Ceremony**

16:45 Foyer 1 **Farewell Reception**

	Hall 7	Hall 8	Planten u.B.	Hall 13/14	Hall 15	Hall D	Hall E	Hall F
	Train Noise + Vib. 22.2 (p. 130)	Sound Power 19 (p. 129)	FCTP Meeting (p. 39)	Vehicle Ac. (Car) 26.5 (p. 136)	Underwater + Ship 24.1 (p. 132)	Building Acoust. 07.2 (p. 123)	Vibroacoustics 27.05 (p. 138)	Vibroacoustics 27.04 (p. 137)
13:00	Betgen: Prediction of decay rates	Bietz: Sound Power standard		Kucukcoskun: Wind Noise by Side-Mirror	Lövgren: Tank Calibration	Adelman-Larsen: New Variable Technology	Nishimura: Membrane Sound Insulation	Jade: Box Radiation by NAH
13:20	Nordborg: Railway Noise Generation	Andersson: Traceable power meas.		Dejong: Wind Noise Modeling	Isaev: Calibration ambient noise	Tavares: Quietness in Cathedral	Langfeldt: Metamaterial double wall	Taylor: Vibro-acoustics of shell
13:40	Cettour: Arnoldi reduction to WFEM	Arendt: Sound power standards		Arnaud: Exterior field simulation	An: Underwater Noise	Lee: Multiple Noise Analysis	Dong: Gypsum board changes	Yu: Acoustic Imaging
14:00	Czechyra: Tram acoustic field	Voelkel: Influences on Sound Power		Park: Virtual NVH development	Listewnik: Calib. Pressure Sensor	Natanael: Stadium Acoustics	Davy: Transmission Forced Waves	Geng: Re-construction of vibration
14:20	Komorski: Tram Noise Analysis	Guglielmone: Sound Power Project		Deng: Door Sealing System	Pang: Experimental research	Wincentz: LF absorption small rooms	Moritz: Hydraul. Powered Vehicles	
14:40	Alfi: Curve squeal	Pomberger: Sound power procedure		Li: Equivalent Source Method	Robinson: Reciprocity uncertainty	Park: Lighting Equipment	Zheng: Acoustic Fill Factor	

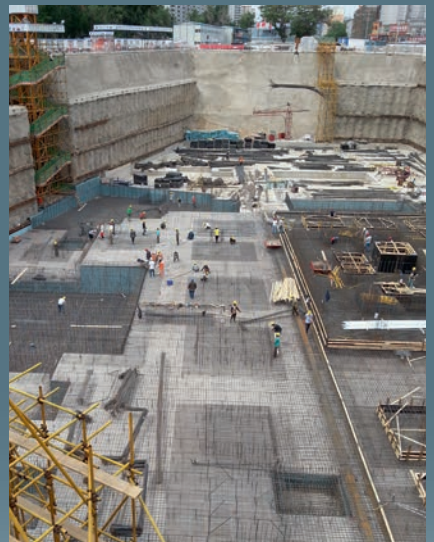
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Short Courses on Sunday, August 21

Course A: A General Framework for Structural Investigations

Transfer Path Analysis. Sound Characterization. Vibration Transmission.

Sunday, August 21 | 13:00-16:00 | Please ask for the room at the registration desk

Cost: 30,00 €

Course Information:

The Transfer Path Analysis (TPA) is a test-based method to investigate the propagation of mechanical vibration, including the contribution of sound sources, in complex structures. Various different approaches have already been implemented with the commercialization of the TPA. These are available as out-of-the-box product. Nevertheless, it seems rather difficult to find the right approach for the understanding of a structure-borne phenomenon as the differences between the various concepts are usually not really visible. The aim of this course is to provide a basic understanding of the general idea of the TPA in the first place. Furthermore, various approaches from the three TPA categories, namely classical, component-based and transmissibility-based, will be illustrated and explained based on a wide range of application examples.

Learning Outcomes:

- Understand the concept of the TPA and its importance to solve vibroacoustic tasks in both the R&D and the troubleshooting
- Learn more about the propagation of sound and vibration in complex mechanical structures
- Understand which TPA methodology should be applied for the requirements of dedicated applications and the difference between the various TPA variants

Instructors:

Dejan Arsic, Dennis de Klerk, Müller-BBM VibroAkustik Systeme GmbH

Course B: Evaluation and Assessment of Industrial Noise

Modern Techniques in Computer Aided Noise Abatement for Outdoor and Indoor Situations with CadnaA and CadnaR

Sunday, August 21 | 9:00 - 13:00 | Please ask for the room at the registration desk

Cost: 30,00 €

Course Information:

- Application of strategies to estimate Sound Power Levels within industrial situations where neither source data nor measurements are possible
- Basics of Sound Propagation calculations with simulation software: Diffraction, Reflection, Specific parameters, etc.
- Configuration of calculation parameters in simulation models with special cases (cylinders, reflective surfaces, structures with transmission, etc.) which are not covered by the available calculation standards

- Acoustic assessment and optimization of industrial situations by the combination of indoor and outdoor computer aided models

Instructor:

Antonio Notario Tévar, DataKustik GmbH

Course C: Methods and Tools for Sound Design – Applications of Psychoacoustics

Sunday, August 21 | 12:00 - 16:00 | Please ask for the room at the registration desk
Cost: 30,00 €

Course Information: The acoustical quality of products such as automobiles, office equipment, or household devices, etc. is becoming more and more important: Product sound influences the purchase decision of the potential customer. That's why sound design is crucial during the product design process and for the improvement of the acoustical features. Since established physical quantities, such as the A-weighted sound pressure level, do not sufficiently describe sound perception, the psychoacoustical approach may help to optimize the sound. The four hour short course provides an introduction to psychoacoustics as well as an overview of applications. The course covers the current status of standardization of psychoacoustic parameters and emphasizes on advanced tools like Relative Approach Analysis, Hearing Model Analyses and High-resolution Spectral Analysis. The course is intended to familiarize the participants with jury testing methods, sound quality metric development and target sound determination.

Learning Objectives:

- Basic expertise of psychoacoustics
- Status quo of standardization of psychoacoustic parameters
- Fundamental knowledge about advanced psychoacoustic tools
- Insight into jury testing methods, sound quality metric development and target sound determination

Instructors:

André Fiebig, Roland Sottek, HEAD acoustics GmbH

Course D: Noise Control and Hearing Protectors

Sunday, August 21 | 08:30-12:30 | Please ask for the room at the registration desk
Cost: 150,00 € (non-commercial course, incl. electronic copy of the presentation)

Learning Outcomes:

- Understand occupational noise and vibration problems based on an acquired fundamental knowledge of vibration and acoustic
- Use basic acoustic and vibration control engineering methods to develop effective occupational noise control solutions
- Understand and describe the evaluation and selection of hearing protectors in the workplace

Course Outline:

1 Acoustic parameters and sound propagation, Effects of noise and vibration on humans, Noise measurement equipment, Sound radiation from vibrating structures, Sound Isolation, Materials for sound absorption , Sound propagation in rooms and open air

2 Noise Control technology and Machinery Noise control

- Noise control strategies
- Noise control at the source, path or trajectory, and workers or receivers
- Enclosures calculation
- Noise control for fans and exhaust systems, motors, pumps, compressed air, valves, cooling towers, etc.

3 Hearing protectors

- Types of performance of hearing protectors
- Noise attenuation characteristics measured at the laboratory, and real world attenuation
- Double protection
- Effect of hearing protector usage time over total daily dose reduction
- Selection of hearing protectors

Instructor:

Samir N. Y. Gerges, Federal University of Santa Catarina (UFSC)

Course E: Real 3D Beamforming and Correlation Analysis

Sunday, August 21 | 09:00-12:00 | Please ask for the room at the registration desk

Cost: 30,00 €

Course information:

- Introduction (Hardware and Software)
- 3D scanning and post processing
- Measurement with the Acoustic Camera
- Analysis of correlated sound sources
- conclusion
- Q&A

Learning outcomes:

Live measurement and 3D scanning for correlating sound sources with an advanced Beamforming system

Instructor:

Benjamin Vonnrhein, Michael Kerscher, gfai tech GmbH

Course F: Sound Source Localization Methods Based on Particle Velocity Measurements

Sunday, August 21 | 09:00-13:00 | Please ask for the room at the registration desk

Cost: 30,00 €

Course information:

In this introductory course, the Microflown particle velocity sensor and its characteristics will be explored, together with a wide range of applications and measurement techniques. A theoretical and practical comparison of velocity methods will also be made for the more traditional pressure-based measurement techniques.

Sound source localization is an important topic in the field of sound & vibration and product development. A particle velocity noise map is a useful tool to analyze noise sources, making systems based on the Microflown sensor very well suited for sound & vibration applications. Approaches and solutions for stationary and non-stationary sound environments, covering all possible working scenarios, will be presented.

Learning outcomes:

- Learn the fundamentals of acoustic particle velocity and the benefits of applying acoustic particle velocity in sound & vibration testing
- Understand the importance of sound source localization for the purpose of benchmarking, troubleshooting, optimization and quality control
- Find out which methods for sound source localization can be offered using particle velocity sensors
- Know what solution or method would be best fitted for requirements of your application
- Learn about how Microflown solutions could be a help to improve your products and business

Instructor:

Marcin Korbasiewicz, Microflown Technologies B.V.

Additional Information on the Technical Program

Program App

The full program - interactive and always up-to-date - is available at <https://eventmobi.com/in16/>

Feel free to arrange your personal schedule, browse the exhibitors list and check the interactive floor plan. The app is also available for free at Google Play, Apple App Store, BlackBerry World and Windows Phone Store.

Information on the Poster Sessions

All posters will be displayed for the entire duration of the congress. Additionally, the poster authors will be available for discussion at certain times:

Monday, August 22 | 15:00 - 15:40
(P01, P02, P05, P07, P09, P11, P12)

Tuesday, August 23 | 15:00 - 15:40
(P03, P04, P06, P08, P10)

For the detailed location of particular posters please watch out for the poster zone as indicated in the session lists and the floor plans (see page 165).

Copy Shops:

Authors searching for a nearby copy shop may find some suggestions on page 47.

Media Check-In

Authors shall upload their presentations in the central media check-in (first floor, foyer 7-8, see page 166).

Opening hours:

Sunday, August 21 | 14:00-19:00

Monday, August 22 | 07:15-18:00

Tuesday, August 23 | 07:15-18:00

Wednesday, August 24 | 07:15-13:00

Photography and Video Recording

Photography and video recording of any lecture or poster are not permitted.

Meetings during the INTER-NOISE 2016

Technical Study Group 10

Sunday, August 21 | 10:15-12:00 | Hall 18-19

The objective of I-INCE Technical Study Group 10 (TSG-10) is to make “Buy-Quiet” programs known to purchasers of equipment to which workers are exposed (such as for the construction industry) and to professional buyers.

General Assembly of I-INCE

Sunday, August 21 | 13:00-16:00 | Hall A2

The General Assembly of the International Institute of Noise Control Engineering is comprised of one representative from all member societies. Designated representatives from each full member societies will be asked to vote on issues concerning the governance I-INCE. A draft agenda can be found on the I-INCE website

<http://i-ince.org/files/assembly/2016%20GA%20Agenda%20draft.pdf>

Any INTER-NOISE attendees are welcome to attend.

I-INCE Workshop and Networking Sessions for Young Professionals

(By Invitation)

Monday, August 22 | Workshop 15:40-17:40 | Networking 18:00 - 19:00 | Hall A2

Goals:

- Professional mentoring issues and case studies presented by world renowned experts
- Informal discussions between young professionals and I-INCE leaders and senior noise control engineers

Audience (by invitation only)

- I-INCE young professional grant applicants for INTER-NOISE 2016
- I-INCE leaders
- Some students who are formally registered for INTER-NOISE 2016 may attend (sign-up at the registration desk by Monday noon)

Workshop Program

- Overview
R. Singh, VP, Technical Activities, I-INCE
- I-INCE Mission
J. Scheuren, President, I-INCE
- Presentation of the I-INCE Young Professionals Grant Certificates
J. Scheuren and R. Singh
- How to Network?
S. Hambric, Pennsylvania State University (USA)

- How to Publish a Paper on Noise?
S. Bolton and P. Davies, Purdue University (USA)
- Perspective of a Young Professional
O. T. Sen, Istanbul Technical University (Turkey)
- INTER-NOISE 2017 Young Professionals Program
R. Singh

Informal Networking Event

- Vouchers for drinks and refreshments will be provided to young professional grant applicants, I-INCE leaders and guests

Future Congress Technical Planners (FCTP) Meeting

(Open to all attendees)

Wednesday, August 24 | 13:00 - 15:00 | Planten un Bloemen

Theme:

- INTER-NOISE 2017, Hong Kong (August 27–30, 2017)
(www.internoise2017.org)
- INTER-NOISE 2018, Chicago (August 26-29, 2018)
(<http://inceusa.org/node/455>)

Agenda:

Raj Singh and SK Tang, Co-Chairs

- Overview and introduction of participants
- INTER-NOISE 2017 technical program, current plans and needs
- Q & A session, suggestions from the floor, and open discussion
- Summary of the discussion and action items
- INTER-NOISE 2016 experience
- INTER-NOISE 2018 technical program, current plans and needs
- Suggestions from the floor, and open discussion
- Closing remarks and adjourn
- Off-line and informal discussions

Attendees should provide their contact information (including email addresses) and suggestions for technical sessions for IN 2017, IN 2018 and beyond (sheets to be circulated).



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Banquet

Banquet on the “Cap San Diego”

Tuesday, August 23 | 19:00 Admission, 19:30 Opening | Cap San Diego

Registration: is not possible anymore

! Please bring your badge with you as an entrance card !

The Motor Ship “Cap San Diego”, built in 1961, is a unique testimony to seafaring and is berthed in her old home harbor of Hamburg as a “museum you can touch” since 1986. She is the last of the classic cargo ships, referred to as the “White Swan of the South Atlantic”. The Cap San Diego, the largest seaworthy museum freighter in the world, now anchors at the “Überseebrücke” quay in Hamburg.

The banquet will take place in “Luke 3”, a hatch with three floors. If the weather is good, the hatch cover can be opened for open air celebrations.

Get ready for the impressive show of “Tätärä”. This is an event for your ears and your eyes. It is an organized chaos and you are part of it. Tätärä plays an adventurous style cocktail of Rock, Jazz, Beat, Groove, Swing, Britpop, Funk, Punk and Classical Music.

Also, you may relax and enjoy the fantastic view beyond the railing to the “Michel”, the entire harbor promenade, and the “Elbphilharmonie”.

How to get from the CCH to “Cap San Diego”:

You may be right in time to use the shuttle bus service. The bus will be at the “Vorfahrtsgeschoss” of the CCH in the “Marseiller Straße” at 18:30, ready to depart at 18:45.

Guests who want to arrive earlier or later, please use public transportation (traveling time less than half an hour):

1. Please leave the CCH in left direction and walk to the “Dammtor” train station.
2. Once at the station, please take either the local train (S-Bahn) S 31 towards “Altona” or the S 21 towards “Elbgaustraße”. Disembark either train at the “Sternschanze” station (2 stops).
3. At “Sternschanze” station, please change to the underground train (U-Bahn) line U3 towards the main station (Hauptbahnhof Süd). Disembark at the “Baumwall” station (4 stops)
4. Proceeding west, take a short walk along the river Elbe promenade, “Elbpromenade”, until you reach the street “Stubbenhuk.” Please turn left and take the stairs to the promenade below and turn right. After a delightful walk of about 250 meters, you will see the “Überseebrücke”, where you must turn left to access the “Cap San Diego” directly.

People who are not able to use stairs may stay on the street “Vorsetzen” (positioned above the “Elbpromenade”) for about 150 meters and then turn left at “Überseebrücke” to reach the “Cap San Diego”.

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Technical Tours

Acoustic Flight Lab – The Full Scale Vibro-Acoustic Flight Test in the Lab *AIRBUS / ZAL Center of Applied Aeronautical Research*

Wednesday, August 24 | Group 1 - 12:30 | Group 2 - 14:00 (15 persons max. each)

Duration: approx. 1 hour

Meeting place: will be announced after registration incl. itinerary

Registration: On-site at the registration desk (first come, first serve)

Costs: No additional costs, except for public transport

Hamburg's ZAL Center of Applied Aeronautical Research – the most advanced research center in the aviation business – is hosting the Acoustic Flight Lab demonstrator in one of the largest semi-anechoic chambers in Europe. The Acoustic Flight Lab demonstrator, owned by AIRBUS and the Hamburg University of Applied Sciences, is the leading-edge research and development platform for aircraft cabin acoustics. It is the result of the collaboration of AIRBUS, Hamburg's universities, the German Aerospace Center (DLR), the Federal Ministry for Economic Affairs and Energy as well as the ZAL Center of Applied Aeronautical Research. The technical visit includes an exclusive presentation of the full scale vibro-acoustic test facility and gives insights in ongoing research activities.

Soundwalking in Urban Environments

Listening as approach for designing sound quality for urban spaces

Guides: Trond Maag, Rikke Munck Petersen

Tuesday, August 23 | 13:00 | Wednesday, August 23 | 10:00 | 13:00

Duration: approx. 1.5 hour

Meeting place: Registration desk (Entrance hall)

Registration: On-site at the registration desk (first come, first serve)

Urbanist Trond Maag and landscape architect Rikke Munck Petersen are inviting people interested in the design process of a city to join their sound walk to discover urban sonic spaces near the INTER-NOISE 2016 conference center. During the walk we will experience the acoustic variety and differences of urban spaces like squares, parks, streets and the materials used in these spaces. We will in particular focus on the way in which the building facades, roofs, city floor surfaces and the natural terrain interact on the different scales relevant to city sound quality. We will recognize that people always create a multi-sensory experience of space based particularly on visual, acoustic, and tactile information. The combination of acoustic experiences with other sensory experiences influences how people judge a listening situation. Such a multi-sensory design approach is necessary to provide good conditions for keeping and improving the value of public spaces and ensuring a high living quality.

Listening to urban spaces offers a perception of a city which differentiates itself from the visual perspective that is more common for planning and designing processes. It is part

of a multi-sensory approach to developing public urban spaces based on the interrelationship between moving, listening and seeing, which are all equally important for the human experience. Listening, in particular when performed in sound walks, contributes to planning and designing the everyday city. Sound walks complement master plans, noise maps and mock-ups. They involve local people physically in the design process of public urban spaces. Professional participants get a chance to synchronize their ideas and develop sound quality judgements about a specific place. Sound walks are feasible steps within the city making process because it enables participants to communicate the idea of a place's qualities to other actors of the city.

General Information for your Stay in Hamburg

Public Transport:

To reach the Congress Center Hamburg (CCH), use the rapid transit (S-Bahn) lines S11/S21/S31 or one of the bus lines 4/5/34/109 to Hamburg "Dammtor" Station (1). Alternatively, you can take underground (U-Bahn) line U1 to "Stephansplatz" Station (2). Different tickets are available that include S- and U-Bahn use as well as the regular busses: Basic options are the single ticket for a one-way travel (EUR 3.20), the all day ticket (EUR 7.60), and the 9 am day ticket (EUR 6.20) that can be used after the morning rush hour. Beside these general tickets, several dedicated weekly tickets, special Hamburg CARD tourist tickets, and group tickets are available, too. Tickets are available at the vending machines at nearly every station, from the bus drivers, or via the HVV phone app. For more information and a journey planner, visit <http://www.hvv.de> (available in English).

Taxis:

There is a huge taxi stand directly at the CCH in front of Hamburg "Dammtor" Station (1). Per ride, a base fare of EUR 3.20 applies plus additional distance- and time-dependent rates (about EUR 2.25 per kilometer). High capacity taxis charge an extra fee.

Call a Bike:

As an attractive alternative, you may use the rental bikes of StadtRAD Hamburg. After registration (non-recurring fee of EUR 5.00), you can use the StadtRAD bikes that are densely distributed all over the city. For the first 30 minutes of each rental, you can use every StadtRAD free of charge; after that you pay a price of EUR 0.08 per minute. Thereby, the fee of EUR 5.00 charged at registration is held in your credit to the full amount. There is also a 24h rental rate of EUR 12.00 available. Please note that a credit card is necessary for payment and picking up the bikes. For registration and further information, please visit <http://stadtrad.hamburg.de> (available in English).

Restaurants:

All day long, the nearby Hamburg "Dammtor" Station (1) offers a quick service food court and a small supermarket range of food and drinks. During lunch time, catering options are also available directly at the CCH in hall G (not included in the conference fee). For those of you who love to go for a little walk, there are several opportunities in about 10-20 minutes walking distance from the CCH: Right on the opposite side of the railway lines, the university quarter offers a lot of opportunities along "Grindelallee" and its side streets (3). Towards the city center, a range of restaurant and food courts can be found along "Collonaden" (4), "Dammtorstraße" (5), and at the "Gänsemarkt" square (6). Heading for the pedestrian zone at "Mönckebergstraße" (7), you can also take the S-Bahn lines S11/S21/S31 to Hamburg Main Station (8), which is only one stop away from Hamburg "Dammtor" Station (1). The "Jungfernstieg" area can be reached by taking the U-Bahn line U1 from "Stephansplatz" Station (2) to "Jungfernstieg" Station (9).

Tipping:

Although not obligatory, it is usual to leave a small (5-10%) tip for good service.



Clear your mind:

The surroundings of CCH offer nice opportunities to clear your mind. You might take a walk through the adjacent parks “Planten und Blomen” (10), the Old Botanic Garden (11), or the “Wallanlagen” (12). Both Inner (13) and Outer Alster (14) encourage for a walk along the lakeside during lunch time. A nearby insider tip for a short break is the ice cream parlor located directly in the park of the CCH behind the underground entrance to “Stephansplatz” Station (2).

Shopping:

Business hours during the week are typically from 10 am to 7 pm. However, many department stores especially in the shopping areas of “Mönckebergstraße” (7) and around the “Jungfernstieg” (9) have extended shopping hours until 8 pm or even 9 pm, while small shops may already close at 6 pm. On Saturdays, small shops are usually open until 2 pm, while the bigger stores close at 8 pm. On Sundays, all shops are closed (exceptions are the stores in the major train stations and at the airport).

Banking and Cash:

Opening times differ, but most banks open weekdays from 9 am to 4 pm. Services on Saturdays are typically restricted, and all banks are closed on Sundays. Most bank branches have cash machines (ATMs) that allow you to withdraw cash 24 hours/day. The nearest ATMs are located at the Radisson Blu Hotel within the CCH and at Hamburg “Dammtor” Station (1). Beside cash, all major credit cards and EC/Maestro cards are widely accepted for payment. It is not customary to pay cash for sums exceeding EUR 500 or to use a credit card for items costing below EUR 10 – if you attempt to do so, you may find that a retailer refuses the transaction.

Medical Aid:

In case of an urgent medical emergency, please call 112. For any other health issues, you may see a regular doctor or visit the accident and emergency departments (“Notaufnahme”) of a hospital. The hospitals closest to CCH are “Asklepios Klinik St. Georg”, “Asklepios Klinik Altona”, “Universitätsklinikum Hamburg-Eppendorf UKE”, and “Marienkrankenhaus”. In case you need any further assistance in getting medical aid, please contact the organization team at the registration desk.

Pharmacies:

A nearby pharmacy with long opening hours can be found in Hamburg Main Station (8). Several further pharmacies are densely distributed all over the city. There is a daily changing 24 hours pharmacy emergency service, see <http://www.aponet.de/> (available only in German). You can also use your mobile phone and send a sms to the phone number 22833 with the zip code of the CCH (20357) or of your hotel, and you will get an immediate response of the closest open pharmacy by sms.

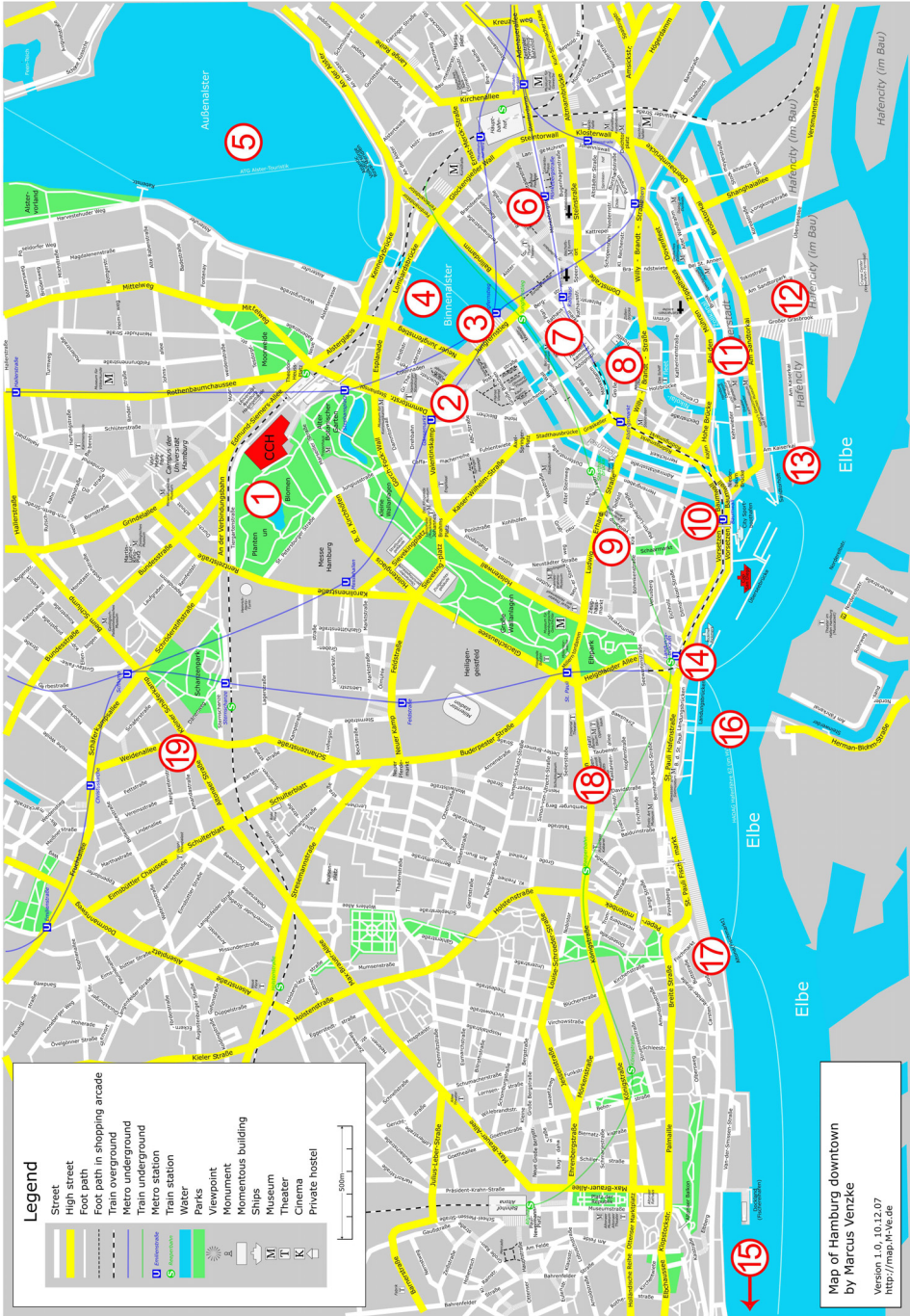
Copy Shops:

Several shops are found in the university quarter along “Grindelallee” and its side streets (3), e.g. “Cobra Copy” (Von-Melle-Park 5), “Adupuc Copy” (Grindelallee 32 and Grindelhof 19-21), and “Abaco Copy” (Grindelallee 40-42).

Hamburg beyond the Venue

Feel free to explore Hamburg's beauty and follow its atmospheric sounds. After discovering the restful ambience of the colorful park "Planten un Blomen" (1) next to the Congress Center CCH, you might consider getting some refreshments at the "Gänsemarkt" square (2) and starting your tour right at the "Jungfernstieg" (3) towards the city center. Take a walk around the Inner Alster (4) and watch the sailing boats on the Outer Alster (5), take an Alster steamer or even explore the adjacent canals by a rowing boat trip yourself. You might want to do some shopping along the "Mönckebergstraße" (6), finally ending up at Hamburg's impressive Town Hall (7). Follow the canals to the south-west either directly to the harbor or take a detour to the St. Nikolai memorial (8) or Hamburg's great landmark, the St. Michaelis church (9), also known as the "Michel", which offers you the perfect opportunity to get a great view all over Hamburg from 106 meters height. From the "Baumwall" (10) onward you will be able to enjoy Hamburg's maritime sounds and views. To the east you will experience the marvelous transition of the historic warehouse complex which forms the "Speicherstadt" (11) into the modern architecture of the "Hafencity" (12). While the "Speicherstadt" is beautifully illuminated during the evening hours, the "Hafencity" accommodates Hamburg's newest landmark, the "Elbphilharmonie" (13) with its unique acoustic design by famous room acoustician Yasuhisa Toyota. To the west you will be able to promenade along the pier, observe the ship traffic or the impressive container terminals on the opposing river side. At the level of the "Landungsbrücken" (14) you will have the opportunity to book a harbor boat trip, enter the public transport ferries to visit for example the Elbe beach at "Neumühlen (15) or even cross the Elbe River by foot through the Old "Elbe Tunnel" (16). Only 500m further down the river, Hamburg's Fish Market (17) is located, not far from the famous "Reeperbahn" (18) at "St. Pauli". It is here as well as at the "Sternschanze" (19), which is just a little further into the north on the way back to the venue, where you might join Hamburg's nightlife, visiting a musical, club or bar before heading back to your hotel.

If you need any more ideas and information on what to do and see, just visit www.hamburg-tourism.de, where you can find a huge list of all the different attractions and experiences Hamburg offers to you!



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Sponsors

The organizers thank all sponsors for supporting INTER-NOISE 2016:

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Exhibition

Besides the technical program, companies will be able to display the latest technology and services in the areas of noise and vibration on the second floor (Hall G, foyer 1 and foyer D-G).

The following companies will present their products and services at INTER-NOISE 2016:

Booth - Company

- 01 - NTEK s.r.l.
- 03 - Siemens Industry Software GmbH
- 04 - Industrial Acoustics Company GmbH
- 05 - BSW Berleburger Schaumstoffwerk GmbH
- 06 - BSW Berleburger Schaumstoffwerk GmbH
- 07 - PCB Piezotronics, Inc.
- 08 - Echo Barrier s.r.o.
- 09 - measX GmbH & Co. KG
- 10 - Brüel & Kjaer Sound and Vibration Measurement A/S
- 11 - Brüel & Kjaer Sound and Vibration Measurement A/S
- 12 - Odeon A/S
- 13 - HEAD acoustics GmbH
- 14 - Ono Sokki Co., Ltd.
- 15 - BSWA Technology Co., Ltd
- 16 - Odenwald Faserplattenwerk GmbH (OWA)
- 17 - Schwingungstechnik-Broneske GmbH
- 18 - Microflow Technologies
- 19 - MSC Software Belgium SA - Free Field Technologies
- 20 - SoundPLAN International LLC
- 21 - Comsol Multiphysics GmbH
- 22 - ESI GmbH
- 23 - OROS
- 24 - CAE Software und Systems GmbH
- 25 - gfai tech GmbH
- 26 - Cambridge Sound Management
- 27 - DataKustik GmbH
- 28 - DataKustik GmbH
- 29 - ACOUSTICS INNOVATION LTD
- 30 - gfai tech GmbH
- 31 - KRAIBURG Relastec GmbH & Co. KG
- 32 - ODEN Systems
- 33 - SPEKTRA Schwingungstechnik und Akustik GmbH
- 34 - G.R.A.S. Sound & Vibration A/S
- 35 - Wölfel Engineering GmbH + Co. KG
- 36 - ACOEM
- 37 - Norsonic AS
- 38 - Norsonic AS
- 39 - Azimut Monitoring - Hager Group
- 40 - ViAcoustics
- 41 - Cirrus Research plc

- 42 - DELTA OHM S.r.l. a socio unico
- 43 - SoundInSight B.V.
- 44 - Acoustic MetaMaterials Inc.
- 50 - Saint-Gobain Ecophon
- 51 - RION CO.,LTD.
- 52 - Hangzhou Aihua Instruments Co., Ltd
- 53 - DGMR Software
- 56 - Getzner Werkstoffe GmbH
- 57 - Nti Audio AG
- 58 - SVANTEK Sp. z o.o.
- 60 - Exa GmbH
- 62 - Müller-BBM GmbH
- 63 - Müller-BBM VibroAkustik Systeme GmbH
- 67 - SVANTEK Sp. z o.o.
- 68 - GENESIS
- 71 - Novicos GmbH
- 72 - Softnoise GmbH
- 73 - SIGICOM AB
- 74 - Microtech Gefell GmbH
- 75 - SINUS Messtechnik GmbH
- 80 - Akustikbüro Rahe-Kraft GmbH

Reception in the Exhibition Area

Monday, August 22 | 17:00 | Exhibition area on the second floor

All participants and exhibitors are invited to enjoy some drinks and snacks while exploring the exhibition.

Advertising Matter

Distribution of advertising matter is only permitted within the exhibitor's booth and at the advertisement table located in front of Hall G.

Exhibition Maps





Plenary and Keynote Lectures - Abstracts

Sieglinde Geisel: The Noise in Our Head

Sunday, August 21 | 17:15 | Hall 1

In nature there is only sound. Noise is formed in our head. Noise is not about decibels alone. Apparently, any sound can be perceived as noise. But what turns sound into noise? Who suffers most, and why? And is silence the answer? Noise is about context - and about consciousness. Therefore I will explore the sociology and psychology of noise: its relationship to power and its potential to mask other conflicts, its dependence on our inner state - and its liberating qualities. Because sometimes the fight against noise is worse than the noise.

Stephen Rizzi: Toward Reduced Aircraft Community Noise Impact via a Perception-Influenced Design Approach

Monday, August 22 | 11:00 | Hall 1

This is an exciting time for aircraft design. New configurations, including small multi-rotor uncrewed aerial systems, fixed- and tilt-wing distributed electric propulsion aircraft, high-speed rotorcraft, hybrid-electric commercial transports, and low-boom supersonic transports, are being made possible through a host of propulsion and airframe technology developments. The resulting noise signatures may be radically different, both spectrally and temporally, than those of the current fleet. Noise metrics currently used in aircraft design, e.g., A-weighted sound pressure level and effective perceived noise level, do not generally reflect these characteristics and therefore may not correlate well with human response. Further, as operations and missions become less airport-centric, e.g., those associated with on-demand mobility or package delivery, vehicles may operate in closer proximity to the population than ever before. Fortunately, a new set of tools are available for measuring human perception during the design process in order to affect the final design in a positive manner. The tool chain utilizes system noise prediction methods coupled with auralization and psychoacoustic testing, making possible the inclusion of human response to noise, along with performance criteria and certification requirements, into the aircraft design process. The perception-influenced design approach is demonstrated for several case studies across the flight regime.

Thomas Beckenbauer: Tire/Road Noise Mitigation: A Challenge for both Acoustical and Civil Engineers

Monday, August 22 | 11:30 | Hall 1

Even though E-cars with silent motors will drive on roads in the future, they will still roll on pneumatic tires and on rough road pavements, thus not making full use of the achievable noise reduction. Endeavors have been intensified to improve the knowledge on how tire/road noise is generated and how tires and road surfaces should be constructed to end

up in a noise reducing tire/road system. Effective concepts for acoustically improved tires as well as advanced road pavements derive from these efforts. However, there seems to be a gap between Technology Readiness Level (TRL) group 1 to 6 (research lab and simulated world) and TRL group 7 to 9 (real world) which is hard to overcome in road construction. It will be shown how big the noise reduction potential is, which concepts have been simulated and practically tested and what is needed to bring low noise road surface concepts to a higher TRL.

Based on recent research it will be shown how challenging it is not to lose the vibroacoustic manner of describing the tire/road noise problem and of testing noise reducing solutions on the way to the real road construction world.

Siv Leth: Silent Electric Train Transportation - Present and Future Technologies

Tuesday, August 23 | 11:00 | Hall 1

Efficient means of transportation are essential to assure social and economic development of our society. This is true for long distance as well as mass transit in the fast growing cities all over the globe. The future for mobility seems to be electric. On rail or on road. Rail traffic is assumed to grow in the future, as one part of the equation to assure access to mobility. To cope with the enormous demands of high capacity in mass transit, rail bound transports will for a long while be a crucial component. In Europe the population are in general very positive to trains as a mean of transportation but they prefer it to be more quiet. Hence, a lot of efforts have been dedicated towards reducing the noise annoyance from railways in the last decades.

The noise control solutions developed and to be developed can be classified in different ways. In this presentation they will be classified in relation to implementation, since only implemented research results will reduce noise annoyance. Some research results have been available for a long time but are for different reasons not applied. In such a case, what hinders the implementation needs to be understood, rather than to continue research. In other areas a better basic understandings of governing physics and validation of methodologies are needed to assure implementation. Yet, in some areas new technologies are required. Many of the areas important to further develop are included in the larger Shift2Rail EU research project.

Moreover, it is of interest to gain deeper knowledge about the future transportation systems where the border between different modes of transportations may radically change. The difference between electric cars connected as a train and electrical multiple units forming trains are diminishing and hence also the research question will have to evolve for noise control of new electric rolling stock as well as new all electric vehicles.

It is of great importance to establish a common understanding and orientation for future research and this overview and classification aims at giving a basis for such an understanding.

Christ de Jong: Underwater Radiated Noise of Ships: Measurement and Mitigation

Tuesday, August 23 | 11:30 | Hall 1

Ships radiate underwater sound due to their propulsion, the operation of equipment and the flow around the hull. Most of this sound is unintentional and unwanted and therefore generally categorised as 'noise'. Radiated noise control is of interest for regulators and for ship operators who may want to limit the effects of shipping noise on marine life or to be able to operate covertly, without being detected by underwater acoustic sensors. But ship radiated noise depends on many parameters, related with ship design and operation as well as with the current state of maintenance and the environment in which the ship is operating. Can ship radiated noise be quantified and measured in a meaningful manner? Navies have special range facilities at which they check the acoustic 'signature' of their vessels against requirements. With increasing cooperation between nations, the comparability of the results has become an issue. An international round robin study in which two research vessels were measured at various naval ranges has provided valuable information on the uncertainties associated with the radiated noise measurements at different ranges. A procedure for the dedicated pass-by tests in which the ship cooperates to have its radiated noise measured at various speeds and settings, has recently been described in a first international standard for surface ship radiated noise measurements (ISO 17208-1). A standard for pass-by tests in shallow water is under development. Published data of radiated noise from ships of opportunity, measured along shipping routes, are generally difficult to compare, because of the lack of standard procedures for measurement, data analysis and reporting. Insight in the uncertainties associated with these data is essential for the development of models for ship radiated noise and the evaluation of the effectiveness of possible mitigation measures for shipping noise, like local speed limits or regulation to ban 'noisy' ships.

Marc Schönwiesner: Tuning the Brain for Sound: Solvable Problems in Auditory Neuroscience

Wednesday, August 24 | 15:00 | Hall 1

The auditory brain is tuned to different sound features and can adapt quickly to changes in sound input. I will discuss ways to measure and disturb this tuning in- and outside of the laboratory, with a particular focus on spatial hearing. Measuring such tuning functions can help us read minds and decode dreams, but will it lead to an understanding of how the brain works?

Plenary Lecture on Sunday, August 21

Plenary Lecture on Sunday

Sunday, August 21 | Hall 1

17:15 The Noise in Our Head

Sieglinde Geisel

Sessions and Posters on Monday, August 22

Keynote Session on Monday

Monday, August 22 | Hall 1

11:00 Toward Reduced Aircraft Community Noise Impact via a Perception-Influenced Design Approach

Stephen Rizzi

11:30 Tire/road noise mitigation: A challenge for both acoustical and civil engineers

Thomas Beckenbauer

Poster - P01 - Active Control

Monday, August 22 | Poster Session 15:00 - 15:40 | Foyer D-G | Poster Zone B and C

- **Analysis of sound absorption characteristics of piezoelectric polymer shunted with electric circuits using equivalent mechanical model**
Shuichi Akasaka, Shunsuke Otomo and Shigeo Asai
- **Low Delay Wind Noise Cancellation for Binaural Hearing Aids**
Nobuhiko Hiruma, Ryosuke Kouyama, Hidetoshi Nakashima and Yoh-Ichi Fujisaka
- **Effective position of reference microphone of active noise control for acoustic noise of magnetic resonance imaging**
Kenji Muto, Ryosuke Osada and Kazuo Yagi
- **Active Control of Impact Sound**
André Vinícius Viacava Passanesi and Wolfgang Kropp
- **Transparent Piezoelectric Film Speakers for Active Noise Mitigation**
Meysam Sharifzadeh Mirshekarloo, Chin Yaw Tan, Lei Zhang, Shuting Chen, Szu Cheng Lai, Shifeng Guo and Kui Yao
- **Study on the effect of vent on the electroacoustic absorber**
Cho Youngeun and Semyung Wang

Poster - P02 - Building Acoustics

Monday, August 22 | Poster Session 15:00 - 15:40 | Foyer D-G | Poster Zone A

- **Sound Transmission Loss of Light-Weight Slotted Steel Studs in a Gypsum Plasterboard Partition Wall**
Arun Arjunan
- **Application of beamforming techniques to the characterization of sound field variations in concert halls**
Sébastien Barré and Olaf Jäckel
- **Investigation of Improved Masking Noise for the Speech Privacy**
Allen Cho and Issa Panahi
- **The Influence of the Shape of Slab on Heavyweight Impact Sound Reduction for an Apartment Building**
Young Soo Chun, Bum Sik Lee and Seong Bok Lee
- **Experimental approach on natural frequency of window vibration induced by low frequency sounds**
Tetsuya Doi, Keiichiro Iwanaga and Michiko Jimbo
- **Effects of Finishing Materials in Wall and Ceiling on Floor Impact Sound**
Inho Kim, Jongkwan Ryu and Jongcheol Go
- **Measurement of Sound Absorption Coefficient at Low Frequencies in Reverberation Chamber**
Martin Schlosser and Oldrich Turecek
- **Dynamic stiffness characteristics of resilient materials for remodelling of the aged apartment buildings**
Guk Gon Song, Yong Jin Yoon, Yong Hee Kim, Ji Hoon Park, Won Hak Lee, Cheol Seung Lee and Jongkwan Ryu
- **An Experimental Investigation of Sound Absorbing Plate in SVU**
Nishimura Yuya, Sohei Nishimura and Thulan Nguyen
- **The effect of addition of layers on impact sound insulation of floors**
Letícia Kauer Zuchetto, Maria Fernanda De O. Nunes and Jorge V. Patrício

Poster - P05 - Psychoacoustics, Product Sound Quality, Soundscape

Monday, August 22 | Poster Session 15:00 - 15:40 | Foyer 1 | Poster Zone G

- **Soundecology indicators applied to urban soundscapes**
Paul Devos
- **Bridging the gap between architecture/city planning and urban noise control**
Gemma Maria Echevarria Sanchez, Timothy van Renterghem and Dick Botteldooren

- **Effects of speaker's and listener's acoustic environments on speech intelligibility and annoyance**
Rieko Kubo, Daisuke Morikawa and Masato Akagi
- **Sound marketing on engine sound design**
Norio Kubo
- **A Study on Quality Improvement of Bone Conducted Speech by AM Method**
Tomohiro Minami and Shigeaki Aoki
- **Optimization of acoustic performance of a vehicle dash sound package**
Xian Wu, Xiaokang Tang and Jianwang Shao
- **Developing method describing impression of unknown sounds through non-acoustic event - for a sound design of electric vehicle**
Katsuya Yamauchi, Saki Liu, Keita Suzuki and Takuya Nomura

Poster - P07 - Advanced Measurement Techniques

Monday, August 22 | Poster Session 15:00 - 15:40 | Foyer 1 | Poster Zone F

- **Comparison Between the Spherical Harmonics Beamforming and the Delay-and-Sum Beamforming**
Frederico Heloui De Araujo and Fernando A. N. Castro Pinto
- **DOA Estimation Through Isosceles Trapezoidal Array**
Ning Han and Shuai Yao
- **A Five-Microphone Method to Measure the Reflection Coefficients of Headsets**
Liu Jinlin, Huiqun Deng, Pfeifeng Ji and Jun Yang
- **Investigation of passive acoustic anemometer by use of wind noise correlation**
Tetsuro Murakami, Yoshinori Yoko, Yuya Sato, Hirofumi Nakajima and Kazuhiro Nakadai
- **Optical Sound Field Measurement and Imaging using Laser and High-Speed Camera**
Yasuhiro Oikawa, Kohei Yatabe, Kenji Ishikawa and Yusuke Ikeda
- **Determination of Sound Power Levels of a Small UAS during Flight Operations**
Umberto Papa, Gino Iannace, Giuseppe Del Core and Giovanna Giordano
- **Wind speed estimation and wind-Induced noise reduction using a 2-channel small microphone array**
Shumpei Sakai, Tetsuro Murakami, Naoto Sakata, Hirofumi Nakajima and Kazuhiro Nakadai

- **Calibration of Hydrophones in a Closed Acoustic Vessel Using Optical Method**
Shiquan Wang and Yi Chen
- **Aeroacoustic analysis of an NACA 0015 airfoil with Gurney flap based on time-resolved PIV measurements**
Xueqing Zhang, Andrea Sciacchitano and Stefan Pröbsting
- **A Novel configuration method of the acoustic random beamforming array for multiple wideband moving sound source location.**
Liu Zhihong, Li Huichao and Yi Chuijie

Poster - P09 - Underwater Acoustics and Ship Noise

Monday, August 22 | Poster Session 15:00 - 15:40 | Foyer 1 | Poster Zone D

- **A Line Spectrum Extraction Method based on Sonar Array Beam Pattern**
Xinwei Luo and Xiaoyan Wang
- **Prediction of the Hydrodynamic Noise of one Certain Frigate**
Xiuhai Lv, Qian Liang, Dongyan Shi and Qingshan Wang
- **Introduction to Canada's Ship Acoustic Ranging Analysis System (SARAS)**
James Robert Pedersen, Jim Covill, Bruce Macdonald and Ken Mackay
- **Prediction of shipping noise in the Eastern Mediterranean Sea**
Emmanuel Skarsoulis, George Piperakis, Emmanuel Orfanakis and Panagiotis Papadakis
- **High-Resolution DOA Estimation in the underwater radiated noise based on Sparse Bayesian Learning**
Qisong Wu and Shiliang Fang
- **Unsupervised Ensemble Feature Selection for Underwater Acoustic Target Recognition**
Honghui Yang, Anqin Gan, Sheng Shen, Han-Lu Chen, Yue Pan, Jansheng Tang and Jiangquiao Li

Poster - P11 - Vehicle Acoustics

Monday, August 22 | Poster Session 15:00 - 15:40 | Foyer 1 | Poster Zone H

- **A generalized methodology for a compensation of test-bench specific influences of a simulated pass-by compared to real outdoor measurements**
Florian Bock, Stefan Becker and Dejan Arsic
- **Measurement of Parameters of the eCall System Transmission Channel for Passenger Car**
Stanislav Bouzek and Oldrich Turecek

- **Dynamic Performance Evaluation of a Seat using Dynamic Properties of the Seat and the Designed Dummy**
Deokman Kim, Kyongwon Min, Hyunkyu Park and Junhong Park
- **Speech intelligibility under in-car distant-talking environments**
Mitsunori Mizumachi, Shota Takuma, Ikuyo Ohsugi, Yasushi Hamada and Koichi Nishi
- **On the Pressure Drop of Wall-flow Diesel Particulate Filters**
Yunus Özkan and Haluk Erol
- **Acoustically Optimized Integration Concept Hybrid-Electric drive in Automotive Application**
Andreas Wanke, Mohammed Kajah Najmudeen Shahfir, Elena Owertschuk, Martin Doppelbauer and Frank Gauterin
- **Performance Invariant Noise Reduction of a Plug-In Hybrid Electric Drive Using an Innovative Skewing Concept**
Andreas Wanke, Gustavo Dienstmann, Peter Springmann, Dirk Lieske, Martin Doppelbauer and Frank Gauterin
- **Measurement and Possible Solutions of the Non-uniform Sound Field in the Automotive Industry**
Ladislav Zuzjak and Oldrich Turecek

Poster - P12 - Education - Take 5

Monday, August 22 | Poster Session 15:00 - 15:40 | Foyer 1 | Poster Zone E
Chairs: Malte Kob, Jack Dostal

- **Using Auditory Demonstrations in a Physics of Music Class**
Jack Dostal
- **Unfolding Utzon - Learning from Utzon's architectural acoustic master pieces**
Poul Henning Kirkegaard and Arnthrudur Gisladdottir
- **Effect of consonant manner on L2 speech perception in multispeaker babble noise**
Hinako Masuda
- **Jupyter notebooks for education and research in acoustics**
Ennes Sarraj

01.1 Active Control: Concepts and Algorithms for Active Noise and Vibration Control

Monday, August 22 | Hall 13/14

Chairs: Joachim Bös, Carl Q. Howard

- 8:40 Active control of noise in a strongly coupled rectangular cavity**
Nobuo Tanaka and Hiroyuki Iwamoto
- 9:00 A method stably working feedback type active noise control system for preventive panel of sound leakage**
Fujii Kensaku and Mitsuji Muneyasu
- 9:20 Parallel fast-array recursive least squares filters for active noise control with on-line system identification**
Arthur P. Berkhoff, Henk Meijer and Sjoerd van Ophem
- 10:00 Automatic Stabilization of an Adaptive Feedback Control for Noise Cancelling In-Ear Headphones**
Sven Höber, Christian Pape and Eduard Reithmeier
- 10:20 Application of Nonlinear Adaptive Filter to Narrowband Active Noise Control in the Presence of Frequency Mismatch**
Jian Liu and Yegui Xiao
- 10:40 Feasibility study on decentralized control system for active acoustic shielding**
Tatsuya Murao, Masaharu Nishimura, Jianjun He, Bhan Lam, Rishabh Ranjan, Chuang Shi and Woon-Seng Gan
- 13:00 Symmetric design of MULTIPLE-CHANNEL active noise control systems for OPEN Windows**
Jianjun He, Bhan Lam, Tatsuya Murao, Rishabh Ranjan and Woon-Seng Gan
- 13:20 Selective Active Noise Control System for Open Windows using Sound Classification**
Rishabh Ranjan, Jianjun He, Tatsuya Murao, Bhan Lam and Woon-Seng Gan
- 13:40 Feasibility of the Full-Rank Fixed-filter Approach in the Active Control of Noise Through Open Windows**
Lam Bhan, Jianjun He, Tatsuya Murao, Chuang Shi, Woon-Seng Gan and Stephen Elliott
- 14:00 Active Shielding based on implicit control: a one dimensional approach**
Ricardo Alonso Quintana Soler and Diego Patiño Guevara
- 14:20 Introduction of a Novel Analysis Method to Predict the Performance of Secondary Systems**
Markus Christoph
- 14:40 The Reflection Equivalence Formulation for a Circular ANC System**
Christian Kleinhenrich and Detlef Krahé

- 15:40 Directivity Control of a Large Loudspeaker by Multi-zone Control using a Small Loudspeaker Array**
Kihyun Kim, Homin Ryu and Semyung Wang
- 16:00 First investigations on controlling unbalanced flexible rotors using shaft seals**
Thomas Kletschkowski

01.2 Active Control: Technologies and Practical Implementation of Active Noise and Vibration Control I

Monday, August 22 | Hall 13/14

Chairs: Joachim Bös, Carl Q. Howard

- 16:20 60 Years of Active Noise and Vibration Control - a Tentative Balance**
Joachim Scheuren
- 16:40 Active control of structure-borne road noise: A control strategy based on the most significant inputs of the vehicle**
Nikos Zafeiropoulos, Nikolaos Marcus Christoph, Nikolaos Jürgen Jollner and Nikolaos Vasudev Kandade Rajan
- 17:00 Study on sound quality control of engine noise and its evaluation**
Naoaki Shibatani, Shunsuke Ishimitsu and Ayato Yamamoto
- 17:20 Multi physical domain simulation of a NVH reduction system for a generator-electric vehicle**
Christoph Tamm, Torsten Bartel, Alexander Dautfest, Christian Debes, Sven Herold and Chalid El Dsoki
- 17:40 Active reduction of the two-way diffraction from a noise barrier by using feed-forward control**
Xun Wang, Takayuki Satake, Yosuke Koba, Satoshi Ishikawa and Shinya Kijimoto

02.3 Advanced Measurement Techniques: Measurement of Sound and Vibration by Optical and Imaging Technique

Monday, August 22 | Pflanzen und Blumen

Chairs: Efrén Fernández-Grande, Wan-Ho Cho

- 8:00 Application of Particle Image Velocimetry in Acoustic and Aeroacoustic Experiments**
Arne Henning
- 8:20 Miniaturized all-optical Sound Pressure Sensor**
Balthasar Fischer and Leander Claes
- 8:40 On the sunflower spiral: acoustical holography results**
Christof Puhle, Sébastien Barré and Sean Hollands

9:00 Measuring the Vibration Response of Plane Panels under Stationary and Transient Mechanical Excitations using Deflectometry

Patrick O'Donoughue, Olivier Robin and Alain Berry

02.4 Advanced Measurement Techniques: Measuring by Means of Sound and Vibration

Monday, August 22 | Planten un Bloemen

Chair: Andrew Elliott

9:20 Passive Acoustic Thermometry

Andrew Elliott

9:40 Location of a Defect in a concrete bridge by a non-destructive technique

Masato Abe, Toyota Fujioka and Yoshifumi Nagata

10:00 Detection of frost plugs in discharge ducts using an acoustic method

Isabelle Schmich-Yamane, Albert Alarcon, Marion Alayrac, Fabrice Junker and Florian Zacharias

10:20 Experimental Modal Analysis of fruit: A starting point of objectively characterizing the degree of ripeness

Marcus Guettler, Monika Gatt and Steffen Marburg

10:40 Implementation of a Numerical Method for the Best Fitting of the Bending Stiffness Curve to a Set of Experimental Points

Massimo Fortini and Edoardo Alessio Piana

02.6 Advanced Measurement Techniques: Measurement Equipment, Calibration and Signal Processing

Monday, August 22 | Hall 8

Chairs: Christoph Kling, Zemar Soares

13:00 An Investigation about the Effect of Diffusivity of Sound Field for Reciprocity Calibration of Measurement Microphones in Diffuse-field

Thiago Antônio Bacelar Milhomem, Zemar Soares and Ricardo Eduardo Musafir

13:20 Microphone calibration service for airborne ultrasound

Christoph Kling

13:40 Enhancing the capability of primary calibration system for shock acceleration in NML

Jiun-Kai Chen and Yeu-Jong Huang

14:00 The solution of noise measurement by using smart phones

Kaifan Zhang, Fang Yuan and Libo Zhou

14:20 Case study of application of a wireless measurement system to a moving vehicle

Masaharu Ohya, Yu Kurosawa and Yasutaka Nakajima

- 14:40 Derivation Technique for Headphone Transfer Functions Based on Sine Sweeps and Least Squares Minimization**
Piero Rivera Benois, Purbaditya Bhattacharya and Udo Zölzer
- 15:40 Audiometer: Correction Factor for Atmospheric Pressure**
Zemar Soares, Davi Anders Brasil and Viviane Fontes Dos Santos
- 16:00 The influences of changes in international standards on performance qualification and design of anechoic and hemi-anechoic chambers**
Douglas Winker and Brian Stahnke
- 16:20 Objectively Choosing Spectrogram Parameters to Classify Environmental Noises**
Ed Nykaza, Anton Netchaev, Steven Bunkley and Matthew G. Blevins

04.1 Aircraft Noise, Exterior: Airframe/Flow-Induced-Noise

Monday, August 22 | Hall A1

Chairs: Carsten Spehr, Con Doolan

- 15:40 Supersonic Impinging Jet Noise Reduction Using Co-axial Swirler**
Paramasivam Balakrishnan and K Srinivasan
- 16:00 Acoustic characteristics of a multi-rotor MAV and its noise reduction technology**
Zhenbo Lu, Yiyuan Liu, Marco Debiasi and Boo Cheong Khoo
- 16:20 Comparing different aero-acoustic formulations in terms of results of an eigenvalue problem**
Marcus Guettler and Steffen Marburg
- 16:40 Numerical Simulation of a Benchmark Case for Aerodynamics and Aeroacoustics of a Low Pressure Axial Fan**
Clemens Junger, Florian Zenger, Aaron Reppenhagen, Manfred Kaltenbacher and Stefan Becker
- 17:00 A Variable Transformation Approach For Boundary Element Solutions of Wave Propagation in Non-Uniform Potential Flows**
Simone Mancini, R. Jeremy Astley, Samuel Sinayoko, Gwenael Gabard and Michel Tournour
- 17:20 Jet Noise Analysis of a Mixed Turbofan Engine**
Jens Trümner and Christian Mundt

04.2 Aircraft Noise, Exterior: Airport Community Noise

Monday, August 22 | Hall A2

Chairs: Ulrich Isermann, Idar L.N. Granøien

- 8:40 Turbopropeller noise model assessment in CARMEN**
Ingrid Legriffon
- 9:00 Determination of Aircraft Engine Speed Based on Acoustic Measurements**
Sebastian Schlüter and Stefan Becker
- 9:20 The sonAIR Sound Source Model: Spectral Three-Dimensional Directivity Patterns in Dependency of the Flight Condition**
Christoph Zellmann, Jean Marc Wunderli and Christian Oliver Paschereit
- 10:00 Study of lateral attenuation under meteorological conditions for airport noise modeling**
Naoaki Shinohara, Kazuyuki Hanaka and Ichiro Yamada
- 10:20 Evaluation of Lateral Attenuation for Aircraft Takeoff-roll Noise by Multi-point Measurement**
Koichi Makino, Takatoshi Yokota, Kazuyuki Hanaka, Naoaki Shinohara, Ippei Yamamoto, Toshiyasu Nakazawa and Ichiro Yamada
- 10:40 Consideration of meteorological effects on noise propagation by using the aircraft noise prediction model in JAXA's DREAMS project**
Hirokazu Ishii, Takatoshi Yokota, Koichi Makino, Toshio Matsumoto, Naoaki Shinohara and Masayuki Sugawara
- 13:00 Noise contours around Noi Bai International Airport - change in aircraft noise exposure before and after the opening of the new terminal building**
Thulan Nguyen, Takashi Yano, Ichiro Yamada and Makoto Morinaga
- 13:20 Airport Noise Management: Benchmarking of 12 International Airports**
Jean-Pierre Clairbois and Nico van Oosten
- 13:40 On the CO₂ and Noise Emissions Forecast in Future Aviation Scenarios in the UK**
Antonio J Torija Martinez, Rod H. Self and Ian H. Flindell
- 14:00 Developing trust between the local community and airports**
Andrew Knowles and Nicole Porter
- 14:20 The Potential of Event-based Aircraft Noise Modelling and Web Mapping in Communicating and Researching Effects**
James Trow and Andrew Knowles
- 14:40 Signal-based indicators for predicting the effect of audible tones in the aircraft sound at takeoff**
Antoine Minard, Christophe Lambourg and Patrick Boussard

07.1 Building Acoustics: Acoustic Criteria in Regulations and Classification/ Labelling of Buildings

Monday, August 22 | Hall F

Chairs: Birgit Rasmussen, Jens Holger Rindel

- 13:00 Higher sound classes possible also in areas with traffic noise combining high façade sound insulation, fresh air supply and efficient thermal control**
Christian Simmons
- 13:20 A pilot study on acoustic regulations for schools - Comparison between selected countries in Europe**
Birgit Rasmussen and Catherine Guigou-Carter
- 13:40 A laboratory listening experiment on subjective and objective rating of impact sound insulation of concrete floors**
Mikko Kylliäinen, Valtteri Hongisto, David Oliva and Laura Rekola
- 14:00 Impact Sound Insulation and Perceived Sound Quality**
Clas Ola Hosoien, Jens Holger Rindel, Anders Løvstad and Ronny Klæboe
- 14:20 Socio-Acoustic Survey of Sound Quality in Dwellings in Norway**
Ingunn Milford, Clas Ola Hosoien, Anders Lovestad, Jens Holger Rindel and Ronny Klæboe
- 14:40 Acoustics and noise in Iceland; Regulatory environment**
Ólafur Daníelsson
- 15:40 Proposed Methodology For New Regulation on Noise Protection For Buildings And Sound Insulation In Turkey**
Nurgun Bayazit, Selma Kurra, Bilge Ozbilen and Ayca Sentop
- 16:00 Transformation into dwellings, an acoustical problem?**
Wim Beentjes
- 16:20 Building acoustics classification schemes in multifamily residential projects in the USA**
Wayland Dong and John Loverde
- 16:40 Sound insulation in retrofitted buildings in Iceland**
Ólafur Daníelsson
- 17:00 Evaluation of Floor Vibrations under Influence of Exposure of Large Vibration**
Hitoshi Matsushita, Yutaka Yokoyama and Shunsuke Naganuma
- 17:20 Optimized reference spectrum for rating airborne sound insulation in buildings against neighbor sounds**
Petra Karoliina Virjonen, Valtteri Hongisto and David Oliva
- 17:40 An experimental study of psychophysiological responses to floor impact sounds**
Pyoung Jik Lee and Sang Hee Park

07.2 Building Acoustics: Acoustics of Indoor Spaces I

Monday, August 22 | Hall D

Chairs: Jeong Cheol-Ho, Pyoung Jik Lee, Erling Nilsson, Gerd Marbjerg

- 8:00 A room acoustic descriptor for teachers, principals, landlords and architects**
Jonas Christensson
- 8:20 Acoustic model for evaluation of rooms with absorbent ceilings**
Erling Nilsson
- 8:40 New ratings in ISO 11654 of plane sound absorbers made for speech communication in classrooms and meeting rooms**
Christian Simmons
- 9:00 Good Acoustics with Canopies - How to install them in the most effective way**
Thomas Plötzner and Abidin Uygun
- 9:20 The effects of occupancy on acoustical conditions of university classrooms**
Young-Ji Choi
- 9:40 Diffuse sound field: challenges and misconceptions**
Jeong Cheol-Ho
- 10:20 Method for measuring sound scattering coefficients of walls and diffusers by using a non-diffuse sound field with unevenly- distributed sound absorption**
Toshiki Hanyu, Kazuma Hoshi and Tao Nakakita
- 10:40 A Mobile Reverberation Cabin for Acoustic Measurements in an Existing An-echoic Room**
Elsa Piolet, Simon Laroche, Marc-Antoine Bianki and Annie Ross
- 13:00 Room Acoustic Modelling of a Reverberation Chamber**
Konca Saher, Sezin Nas, Baki Karaboce, Cafer Kirbas and Eyup Bilgic
- 13:20 Uncertainty-Based Diffraction Using Sound Particle Methods in Noise Control Software**
Thomas Judd, Dieter Zollitsch, Stefan Weigand, Uwe Stephenson and Jochen Schaal
- 13:40 Scattering from objects and surfaces in room acoustical simulations**
Gerd Marbjerg, Jonas Brunskog, Cheol-Ho Jeong and Erling Nilsson
- 14:00 Multi-objective optimization for designing acoustic reflectors**
Csaba Huszty and Tamas Meszaros
- 14:20 Create SEA Predictive Models to Support Building's Acoustic Design**
Arthur Henry, Arnaud Caillet and Jean-Christophe Thebaud
- 14:40 Do wavelet filters provide more accurate estimates of reverberation times at low frequencies**
Manuel A. Sobreira Seoane, David Pérez Cabo and Finn T. Agerkvist

07.4 Building Acoustics: Low-frequency Sound Insulation - Measurement and Prediction

Monday, August 22 | Hall D

Chairs: Edwin Reynders, Carl Hopkins

- 15:40 Low Frequency Sound Transmission of Double Plates in an Impedance Tube**
Hyun-Sil Kim, Sang-Ryul Kim, Seong-Hyun Lee, Yun-Ho Seo and Pyung-Sik Ma
- 16:00 An efficient hybrid transfer matrix-statistical energy analysis approach for predicting the sound transmission through thick and layered walls**
Edwin Reynders, Arne Dijckmans and Carolina Decraene
- 16:20 Vibroacoustic finite element modelling of the low-frequency performance of a solid timber floor formed from dowel- connected joists**
Carl Hopkins, Marios Filippoupolitis, Nuno Ferreira, Raphael Voltl, Ulrich Schanda, Jeffrey Mahn and Lubos Krajci
- 16:40 Amplified catalogue of vibration reduction index formulas for junctions based on numerical simulations**
Jordi Poblet-Puig and Catherine Guigou-Carter
- 17:00 Variability in Structure-Borne Flanking Transmission at Low and Mid Frequencies**
Arne Dijckmans
- 17:20 Building performance at low frequency range including flanking transmissions**
Catherine Guigou-Carter and Jordi Poblet-Puig
- 17:40 Comparisons of Various Approaches to Low Frequency In-Situ Measurements and Corresponding Models**
Dag Glebe, Krister Larsson and Kent Persson

07.8 Building Acoustics: Applying Building Envelope Design for Traffic Noise Mitigation

Monday, August 22 | Hall F

Chairs: Maurice Yeung, Shui-Keung Tang

- 8:00 Modeling and Simulation of windows with noise mitigation and natural ventilation**
Xiang Yu, Fangsen Cui, Tse Tiong Tan and Kui Yao
- 8:20 Sound transmission across plenum windows with non-parallel glass panes**
Sk Tang
- 8:40 Open windows with better sound insulation**
Lars Sommer Søndergaard and Rune Egedal

- 9:00 Adopting Specially Designed Balconies to Achieve Substantial Noise Reduction for Residential Buildings**
Maurice Yeung
- 9:40 Materials acoustic properties test by the dual-microphones broadband impulse method**
Yunke Huang, Hong Hou, Zhengyu Wei and Shuai Zhang
- 10:00 Research and Development of Noise Mitigation Measures for Public Housing Development in Hong Kong - A Case Study of Acoustic Balcony**
Hin-Leung, John Ho and Wai-Ming, Chimmy Chu
- 10:20 A Possible Mitigation Measures for Urbanized Residential Development - Acoustic Window with Natural Ventilation**
Grace Kwok, Tin Kit Ho, Andy Lai, Frank Cheung and Joanne Ng
- 10:40 An Experimental Study on Traffic-noise-excited Vibrations of Window Glass Panes of High-Rise Buildings next to Viaduct- surface Combined Roads with Two Triaxial Sensors**
Jiping Zhang, Jie Jiang, Yan Hu, Li He, Wenbo Xiong and Hong Pan

09.1 Environmental Noise Directive: Common Issues of END

Monday, August 22 | Hall B2

Chairs: J. Luis Bento-Coelho, Kerstin Giering

- 8:20 Introduction: Policy context and evaluation of the Environmental Noise Directive**
Ivana Juraga, Bernhard Berger and Marco Paviotti
- 8:40 Road traffic noise exposure in Europe in 2012 based on END data**
Wiebe Alberts, Nico Faber and Michiel Roebben
- 9:00 Importance of public participation in END implementation: some experiences from Italian agglomerates and infrastructures**
Sergio Luzzi, Raffaella Bellomini, Rossella Natale, Chiara Bartalucci, Francesco Borchì, Monica Carfagni and Lapo Governi
- 9:20 Experiences with public participation during action planning in small and medium-sized German cities**
Margit Bonacker and Bettina Bachmeier
- 10:00 The role of monetarization in decision methods for traffic noise abatement measures**
Bert Peeters, Gijsjan van Blokland, Wout Schwanen and Hans Bögli
- 10:20 Environmental Impact Assessment and Cost Benefit Analysis applied on Motorway A27 (NL)**
Nico Faber
- 10:40 Economic analyses of noise reduction packages**
Ronny Klaeboe and Sebastian Eggers

13:00 A Policy Indicator for Road Traffic Noise Emission

Michael Dittrich and Johan Sliggers

13:20 How to make better noise maps - and why?

Martin Jäschke

13:40 Assessment of the impact of multiple types of noise sources on humans

Thomas Myck and Berthold Vogelsang

14:00 Research on the effect of the air craft noise pollution on the noise environment in the school education of Okinawa due to the U.S. military Bases

Takeshi Tokashiki

14:20 Discuss on the Noise Metrics for High-Speed Train Noise Assessment

Xiaohu Hu, Xin Zhou, Xiangyang Wu and Li Lu

14:40 Updated Road Traffic Noise Emission Models in Sweden

Krister Larsson

09.2 Environmental Noise Directive: Noise Mapping

Monday, August 22 | Hall B2

Chairs: Klaus-Georg Krapf, Christian Kirisits

15:40 Noise Exposure Assessment for Nationwide Infrastructures

Hartmut Stapelfeldt and Florian Pfäfflin

16:00 The Translation of the Austrian National Road Emission Data to the Revision of Annex II of the European Environmental Noise Directive 2002/49/EC

Christoph Lechner and Christian Kirisits

16:20 Noise Mapping of Agglomerations: a comparison of interim standards vs. new CNOSSOS method in a real case study

Franco Bertellino, P Cicoira, F Gerola, M Clementel, P Scaramuzza and M Nardelli

16:40 CNOSSOS-EU Sensitivity to Meteorological and to Some Road Initial Value Changes

Panu Majjala, Jarno Kokkonen and Olli Kontkanen

17:00 Noise impact assessments in early stage road and railway planning

Oliver Ackermann Lylloff and Dan Pope

11 Manfred Heckl Memorial Session

Monday, August 22 | Planten un Bloomen

Chairs: Joachim Scheuren, Werner Scholl, Wolfgang Kropp

20 years after his untimely death in summer 1996 INTER-NOISE 2016 takes the opportunity to remind the many important technical and scientific contributions to noise control engineering made by Professor Manfred Heckl in a special memorial session. This structured session gives an exemplary overview of Manfred Heckl's work and achievements as well as of their relevance to noise control engineering from then to the present today. In addition to some invited speakers of particular affinity the session will include short presentations and statements to accomplish the recognition of Manfred Heckl's contributions to engineering acoustics and their long-lasting influence and relevance to practical noise control. Based on particular reminiscences the session will end in an informal get&chat-together. More details on the program and schedule of the session can be found in <http://www.internoise2016.org/program/manfred-heckl>.

13:00 Manfred Heckl - a pioneer in engineering acoustics

Joachim Scheuren

13:40 Contributions of Manfred Heckl to the equivalent source method and its extension to sources with complex singularities

Martin Ochmann

14:00 Characterisation of sources of airborne and structure-borne sound: principles and applications

Goran Pavic

14:20 Building Acoustics as a scientific discipline: Manfred Heckl's research on airborne- and structure-borne sound transmission

Barry Gibbs

14:40 Acoustic modelling for noise control with special emphasis to road/tyre noise

Wolfgang Kropp

15:00 Further contributions and discussion

The session will be continued by further contributions and statements before ending in an open discussion with particular reminiscences to Manfred Heckl

12 Industrial Noise

Monday, August 22 | Hall 1

Chairs: Carl-Christian Hantschk, Rob Hay, Wolfgang Probst

8:00 About some experience of reduction of vibration of power plants and joining mechanical systems

Andrey Vasilyev, Vitaliy Bukhonov, Ivan Tereshchenko and Yulia P. Tereshchenko

8:20 Small Bore Dynamics and some Fatigue Related Issues

Salah Fahmy

- 8:40 Benefits of Developing a Detailed Noise Model for a Large Industrial Site**
Aaron Staples, Robbie Blakelock and Rob Hay
- 9:00 Modeling Techniques Applied to the Noise Prediction of Industrial Noise**
Antonio Notario Tévar
- 9:40 How to use multiple wind roses for industrial noise propagation? Using ISO 9613-2 CMET**
Frank-Christian Zacharias
- 10:00 On the validation of rotating bar apparatus providing an economical alternative to low-noise wind tunnel testing for the measurement of wind self-noise of outdoor acoustic metrological equipment**
David Paul Robinson
- 10:20 Legal Limits for Peak Levels in the Environment due to Industrial Activities**
Jan Granneman
- 10:40 Noise reduction from air intakes of compressors and blower fans**
Vladimir Tupov and Boris Tupov
- 13:00 Influence of Aerodynamic Factors on Silencers of Exhaust Fans**
Vladimir Tupov, Boris Tupov and Denis Rozanov
- 13:20 Energy label for acoustic silencers**
Chris van Dijk
- 13:40 Tonal Sound from Onshore Drilling Rig Top Drive Unit**
Damian Paul Ellerton and Arthur Postles
- 14:00 Solution for a 100 Hz noise problem with disc resonators**
Daniel Szilveszter Nagy and Maria Bite
- 14:20 Noise Reduction Advances at Major Defence Facilities in Australia**
Peter Teague, Vasos Alexandrou, James Conomos and Martin Jennings
- 14:40 Managing Noise Effects from Dairy Factories**
Rob Hay, Robbie Blakelock and Aaron Staples
- 15:40 Optimized noise control for gas compressor station pipework**
Marco Geisler and Carl-Christian Hantschk
- 16:00 Noise Control Action Plan Implementation at BorsodChem 1/2**
Miklós Márkus and András Muntag
- 16:20 Noise Control Action Plan Implementation at BorsodChem 2/2**
András Muntag and Miklós Márkus
- 16:40 Comparison of Noise Exposure Calculation with the use of Hearing Protector Device Submitted to Industrial Noise Spectrum**
Rafael Gerges, Samir Gerges and Felipe Vergara
- 17:00 Diminishing reliability of Standards on Environmental Noise**
Michael Stigwood

14.3 Materials: Industrial Experiences of Poro-elastic Treatment Applications

Monday, August 22 | Planten un Bloomen

Chair: François-Xavier Bécot

- 16:20 On the use of high-intensity sound for acoustic cleaning of porous titanium medical implants fabricated using selective laser melting**
Gary Seiffert, Carl Hopkins and Chris Sutcliffe
- 16:40 On the difficulties in manufacturing of luffa fibers reinforced bio- composites and variations in their dynamic properties**
Garip Genc and Hasan Koruk
- 17:00 Dash Sound Package Optimization Using Genetic Algorithm Based on SEA Method**
Xian Wu, Cheng Wang and Jianwang Shao
- 17:20 Predicting alpha cabin sound absorption in an industrial context**
François-Xavier Bécot, Christophe Loqueteau and Julia Rodenas

16 Numerical Acoustics I

Monday, August 22 | Hall A1

Chairs: Philippe Jean, Timothy van Renterghem

- 9:20 Effect of Effective Length of the Tube on Transmission Loss of Reactive Muffler**
Gabriela Silva and Maria A A Nunes
- 9:40 Influence of Source Term Interpolation on Hybrid Computational Aeroacoustics in Finite Volumes**
Thorben Schröder, Patrick Silkeit and Otto von Estorff
- 10:00 Modal Analysis of an Enclosure Acoustic Space Based on Spectro-Geometric Method**
Xianjie Shi, Chunli Li, Fengjun Wang and Wen Li
- 10:20 Parallel Time-Domain Simulations for Vibro-Acoustics using Krylov Sub-space Projections and Linear-Phase Filters**
Axel van de Walle and Wim Desmet
- 10:40 A Meshless Method for the Acoustic Wave Propagation with the Weighted Least Squares Filtering**
Jaroslav Bajko, Libor Čermák and Miroslav Jícha
- 13:00 Convergence of modes in exterior acoustics with infinite elements**
Lennart Moheit and Steffen Marburg
- 13:20 Experimentally validated finite element models of two reinforced concrete beams subjected to surface-to-surface contact conditions**
Marios Filippoupolitis, Carl Hopkins and Siu Kui Au

- 13:40 Numerical Method to simulate Vibrational Behaviour and resulting Sound Emission of Biological Systems**
Stefanie Retka, Mario Fleischer and Willy Mattheus
- 14:00 Simulation and Analysis for Nonlinear Acoustic Absorption of Perforated Sheets at High Sound Pressure Levels**
Bo Zhang and Xinbo Wang
- 14:20 Vibro-acoustic energy flow through spot-welds in Dynamical Energy Analysis**
Timo Hartmann, Gang Xie, Janis Bajars, David Chappell and Gregor Tanner
- 14:40 Research on the characteristics of dynamic response and absorbing energy of honeycomb sandwich panel under blast load**
Xiangyou Xue, Dongyan Shi and Zhikai Wang

17.1 Product Sound Quality: Perception of Electric and Hybrid Vehicles: From Alert Sound Design to Interior Noise I

Monday, August 22 | Hall 8

Chairs: Ercan Altinsoy, Katsuya Yamauchi, Etienne Parizet

- 16:40 Alternative alert signal concepts and their perceptual implications**
Klaus Genuit and André Fiebig
- 17:00 Principles of Active Sound Design for electric vehicles**
Markus Bodden and Torsten Belschner
- 17:20 Effect of amplitude envelope on detectability of warning sound for quiet vehicle**
Nozomiko Yasui and Masanobu Miura
- 17:40 Predicting Detectability and Annoyance of EV Warning Sounds using Partial Loudness**
Gustav Jacobsen, Jeong-Guon Ih, Wookeun Song and Ewen Macdonald

18.1 Psychoacoustics: Modeling of Auditory Sensations

Monday, August 22 | Hall C2

Chairs: Roland Sottek, Patricia Davies

- 8:20 A hearing model approach to roughness**
Roland Sottek
- 8:40 Roughness calculation utilizing envelope waveforms**
Arne Oetjen, Steven van de Par, Reinhard Weber and Uwe Letens
- 9:00 Predicting the Loudness of Non-Stationary Sounds: Zwicker's Original Envelope Extraction vs. DIN 45631/A1:2010**
Florian Völk

9:20 Modeling spectro-temporal modulation perception in normal-hearing listeners

Raul H. Sanchez and Torsten Dau

9:40 Modeling Sound Quality from Psychoacoustic Measures

Lena Schell-Majoor, Jan Rennies-Hochmuth, Stephan D. Ewert and Birger Kollmeier

18.2 Psychoacoustics: Sound in Multisensory Perception and Interaction

Monday, August 22 | Hall C2

Chair: Ercan Altinsoy

10:20 A fundamental study on the sound pressure level that best matches with the visually perceived distance from the virtual sound source

Koji Abe, Masahiro Hashimoto, Shouichi Takane, Masayuki Nishiguchi and Kanji Watanabe

10:40 Multi-dimensional analysis of HRTF using tensor singular value decomposition

Daehyuk Son and Youngjin Park

13:00 On the study of effects on different types of natural sounds on the perception of combined sound environment with road traffic noise

Tm Leung, Chi-Kwan Chau and Sk Tang

13:20 Effects of combinations of water sounds and visual elements on the traffic noise mitigation in urban green parks

Massimiliano Masullo, Luigi Maffei and Aniello Pascale

13:40 Effects of Vibration Information on the Senses of Presence and Verisimilitude of Audio-visual Scenes

Shuichi Sakamoto, Zhenglie Cui, Tomoko Ohtani, Yôiti Suzuki and Jiro Gyoba

14:00 The importance of the haptic feedback in musical practice - Can a pianist distinguish a Steinway through listening?

Ercan Altinsoy

14:20 Comparison of the Perceived Intensity of Time-Varying Signals in the Tactile and Auditory Domain

Sebastian Merchel, Jing Dou and Ercan Altinsoy

18.4 Psychoacoustics: Delight/Emotional Design for Sound

Monday, August 22 | Hall C2

Chairs: Koichi Ohtomi, Eric Frank

14:40 Kansei Modeling for Multimodal User Experience (Visual Expectation effect on Product sound perception)

Miyazaki Chihiro, Hideyoshi Yanagisawa and Sohya Nakano

15:40 Delight design for hair dryer sound

Koichi Ohtomi

16:00 An Improved Psychoacoustic Annoyance Model Based on Tonal Noises

Guoqing Di

16:20 An investigation into automobile wind noise characteristics beyond loudness that affect people's responses to the sounds heard within the car

Daniel Joseph Carr and Patricia Davies

20 Sound Propagation Outdoors

Monday, August 22 | Hall 15

Chairs: Timothy van Renterghem, Keith Wilson

8:00 An Overview of Infrasound Propagation

Roger Waxler

8:20 Time varying sound propagation for a large industrial area

Frits van der Eerden, Peter Wessels, Arjo Segers, Tom Basten, Bert de Coensel, Dick Botteldooren, Timothy van Renterghem, Luc Dekoninck, Vincent Spruytte and Alphonso Makovec

8:40 Range sampling strategies for statistical learning models in the context of long-range outdoor propagation

Carl R. Hart, Keith Wilson, Chris L. Pettit and Ed Nykaza

9:00 Acoustic Absorption Mapping: Wide-area Estimation of Ground Acoustic Absorption Coefficient Using Airborne Hyperspectral Imagery

Takuya Oshima, Kei Wakamatsu, Yasuhiro Hiraguri, Takeshi Okuzono, Reiji Tomiku, Noriko Okamoto and Toru Otsuru

9:40 Meteorological effects on the noise shielding by low parallel wall structures

Timothy van Renterghem, Maarten Hornikx, Shahram Taherzadeh and Keith Attenborough

10:00 Approaches to stratified sampling and variance reduction in outdoor sound propagation calculations

Keith Wilson, Carl R. Hart, Michelle Swearingen and Chris L. Pettit

10:20 Sound field estimation in courtyards

Alexander Lee, Jean Marc Wunderli and Kurt Heutschi

- 10:40 The 3D Simulation of Indoor Traffic Noise in Multi-storey Buildings Based on Beam Tracing Method**
Huimin Gao, Ming Cai and Qing Hou
- 13:00 Traffic with Noise Modeling Consideration of Meteorological Effect**
Wei-Jiang Zhao, Daniel J. Wise, Venkata B L Boppana, En-Xiao Liu, Hee Joo Poh, Kelvin Wenhui Li and Tse Tiong Tan
- 13:20 Long-term Measurements of Sound Refraction Paths over Residential Areas using Emergency Public Address Systems**
Toshiya Ohshima, Taisuke Naito, Tetsuya Doi, Takatoshi Yokota and Koichi Makino
- 13:40 "Sound Weather" - Methods and Applications**
Karl Wilhelm Hirsch
- 14:00 Meteorological factors characterization in atmospheric noise propagation using a variance analysis approach**
Albert Alarcon, Isabelle Schmich-Yamane, Marion Alayrac and Fabrice Junker
- 14:20 On the Characteristics of the EA Method to Measure the Acoustic Properties of Ground Surface In-situ**
Kurosaka Yumi and Takuya Oshima
- 14:40 Result comparison of two acoustic software packages based on SRM II (Road Traffic 2002)**
Ann Buytaert

21.1 Soundscape: Soundscape, Health, Quality of Life

Monday, August 22 | Hall B1

Chairs: Peter Lercher, David Welch

- 13:00 Soundscapes, human restoration and quality of life**
Irene van Kamp, Elise van Kempen, Ronny Klaeboe, Hanneke Kruize, Alan Lex Brown and Peter Lercher
- 13:20 Testing models for annoyance due to urban road traffic noise combined with tramway noise**
Catherine Marquis-Favre, Achim Klein and Patricia Champelovier
- 13:40 Psychoacoustic indicators of road and rail traffic noise, subjective perception and psychological and physiological parameters**
Michael Cik, Manuel Lienhart, Kurt Fallast, Egon Marth, Wolfgang Freidl and Franz Niederl
- 14:00 Odor perception and air quality annoyance in noise sensitivity**
Marja Heinonen-Guzejev, Daniel Shepherd, Kim Dirks, Michael J. Hautus, Kauko Heikkilä, David Welch and David McBride

- 14:20 Residents' expectancies of stress stimuli, behavioural outcome and behavioural control as a key to health inequities in the context of noise action planning: A conceptual model and its empirical translation**
Natalie Riedel and Gabriele Bolte
- 14:40 Analysis of socio-cultural differences and psychoacoustic parameters in sound perception in a public park and its surroundings**
Margret Sibylle Engel, Carmella Pfaffenbach and Janina Fels
- 15:40 Windmill noise annoyance, visual aesthetics, and attitudes towards renewable energy sources**
Ronny Klæboe and Hanne Beate Sundfør
- 16:00 Effects of Sound Source Visibility on Sound Perception in Living Room Environment**
Kang Sun, Bert de Coensel, Gemma Maria Echevarria Sanchez, Timothy van Renterghem and Dick Botteldooren
- 16:20 Hospital Soundscape: Acoustics Evaluation in the Intensive Care Unit of a National Hospital in Central Jakarta, Indonesia**
Puti Audia Fatima, Gifarie Effendy, Joko Sarwono, Sentagi Sesotya Utami, Tri Juda Airlangga Hardjoprawito and Rudyanto Sedono
- 16:40 Safe and Sound: Soundscape research in special needs care**
Kirsten van den Bosch and Tjeerd Andringa
- 17:00 Health-Related Quality of Life is Impacted by Proximity to an Airport in Noise Sensitive People**
David Welch, Kim Dirks, Daniel Shepherd and David McBride

21.4 Soundscape: Standardization in Soundscape

Monday, August 22 | Hall B1

Chairs: B. Schulte-Fortkamp, Bennett Brooks

- 8:20 Principles and Methods for the Conservation of Indigenous Cultural Soundscapes**
Kazuya Minoura
- 8:40 Opportunities for International Liaison: Acoustical Standards in the New Millennium**
Christopher J Struck
- 9:00 The Soundscape Standard**
Bennett Brooks and Brigitte Schulte-Fortkamp
- 9:20 A Soundscape Community Engagement Conceptual Model for Managing Urban Development**
Lisa Lavia, Jieling Xiao and Jian Kang

- 10:00 Tuning acoustical facade designs aiming for a controlled influence on the urban soundscape**
Jochen Krimm, Holger Techen and Ulrich Knaack
- 10:20 Soundscape Challenges in Surgery and Interventional Medicine: Squaring the Circle?**
Holger Sauer
- 10:40 An argument for a standardized method to record, measure, characterize, and compare captive animal soundscapes**
Susan M Wiseman and Preston Wilson

22.1 Train (Noise and Vibration): Railway Vibration

Monday, August 22 | Hall 8

Chairs: Franck Poisson, Geert Degrande, Geert Lombaert

- 8:40 Influence of the ground/structure interaction on the calculation of the force at the wheel/rail contact**
Loïc Grau, Astrid Pieringer, Bernard Laulagnet and Wolfgang Kropp
- 9:00 Strategy for Predicting Railway-induced Vibrations in Buildings**
Peter Persson, Kent Persson, Lars V Andersen and Nils Persson
- 9:20 The determination of railway vibrations levels in practice**
Hans J.A. van Leeuwen and Aart C van Zwielen
- 10:00 Numerical Modelling of Ground Vibration Caused by Elevated High-speed Railway Lines Considering Structure-Soil-Structure Interaction**
Paulius Bucinskas, Lars V Andersen and Kent Persson
- 10:20 Residential Vibration Exposure from Railway Traffic in Sweden**
Matilda Arnesson, Alf Ekblad and Mikael Ögren
- 10:40 Mitigation of Railway Induced Ground Vibration by Stiff Wave Barriers**
Arne Dijckmans, Pieter Coulier, Alf Ekblad, Alexander Smekal, Vicente Cuéllar, Geert Degrande and Geert Lombaert

23.1 Tyre/Road Interaction: Excitation, Response and Sound Radiation

Monday, August 22 | Hall 7

Chairs: Carsten Hoefer, J. Stuart Bolton

- 8:40 Overview of tyre perspective experimental and virtual tools developed within Silent and Safe Road traffic project**
Bharatkumar Makwana
- 9:00 Separating the contributions from air-pumping and tyre vibrations by speed dependency analysis of tyre/road noise**
Julia Winroth, Wolfgang Kropp, Carsten Hoefer, Thomas Beckenbauer and Manuel Männel

- 9:20 Loading effect on tire noise radiation**
Rui Cao and J. Stuart Bolton
- 10:00 Experimental Study of the Rolling Contact Forces Between a Tyre Tread Block and a Road**
Oskar E. Lundberg, Ines Lopez Arteaga and Leif Kari
- 10:20 The Effects of Tread Patterns on Tire Pavement Interaction Noise**
Tan Li, Jianxiong Feng, Ricardo Burdisso and Corina Sandu
- 10:40 Dynamic Contact Law between a Rolling Pneumatic Tyre and a Single Asperity**
Yuan-Fang Zhang, Julien Cesbron, Hai-Ping Yin and Michel Bérengier
- 13:00 Tyre Contact Forces on a Particulate Road Surface**
Roger James Pinnington
- 13:20 Modeling of Excitation Stress Distribution and Its Propagation Measurement on a Tire Tread Caused by Road Surface Shingles**
Masao Ishihama, Yudai Komagamine, Keisuke Matsumoto and Kosuke Miyoshi
- 13:40 A 3D envelopment procedure for tyre belt radiated noise level prediction**
Philippe Klein and Julien Cesbron
- 14:00 Tyre-road noise measurements: influence of tyre tread and road characteristics**
Marieke Bezemer-Krijnen, Ysbrand Wijnant and Andre de Boer
- 14:20 Tire/Road Noise - Characterization and Potential Further Reductions of Road Traffic Noise**
Peter Kindt, Stijn Vercammen and Fabio Bianciardi
- 14:40 The Simulation of Tyre/Road Interaction and Exterior Rolling Noise for Road Surfaces With Transversal Discontinuities**
Carsten Hoefer and Wolfgang Kropp
- 15:40 Influence of Tire Deformation on Sound Pressure Level inside a Tire**
Yohsuke Tanaka, Shogo Horikawa and Shigeru Murata
- 16:00 Automotive tyre cavity noise modelling and reduction**
Dan O'Boy and Stephen Walsh
- 16:20 Investigation of noise radiation from tire using experimental modal identification**
Atsushi Kitahara, Takuya Yoshimura and Shinsaku Katayama
- 16:40 Parameter Identification and Vibration Analysis of a Three-Dimensional Elastic Ring-Based Tire Model**
Masami Matsubara, Daiki Tajiri, Tomohiko Ise and Shozo Kawamura
- 17:00 Tyre cavity noise: porous materials as a countermeasure**
Simone Baro, Roberto Corradi and Mats Åbom

25.1 Urban Sound Planning I

Monday, August 22 | Hall C2

Chairs: Luigi Maffei, Maurice Yeung

16:40 Urban sound planning - the SONORUS project

Sonia Alves, Beate Altreuther, Joachim Scheuren, Wolfgang Kropp and Jens Forssén

17:00 The sonic public realm - Chances for improving the sound quality of the everyday city

Trond Maag, Tamara Kocan and Andres Bosshard

17:20 Bilbao Sound Strategy: A Comprehensive, Flexible and Balanced Approach

Igone Garcia, Aspuru Itziar, Enrique Rincon, Alvaro Santander and Karmele Herranz-Pascual

17:40 Urban Noise Management in Singapore

Chee Kwan Bin and Charles Chiou Kang Lee

27.01 Vibroacoustics: Acoustic Black Holes: Theory & Applications for Noise and Vibration Control

Monday, August 22 | Hall E

Chairs: Stephen C. Conlon, Elisabeth P. Bowyer, Adrien Pelat, Fabio Semperlotti

9:20 Analytical solution of black hole equation and some consequences

Mikhail Mironov and Alexey Gladilin

9:40 Enhanced Acoustic Black Hole Effect in Beams using a Modified Thickness Profile

Liling Tang, Li Cheng, Hongli Ji and Jinhao Qiu

10:00 Effects of geometrical nonlinearities on the acoustic black hole effect

Vivien Denis, Adrien Pelat, Cyril Touzé and François Gautier

10:20 Assessing Acoustic Black Hole performance via wavenumber transforms

Philip Feurtado and Stephen C. Conlon

10:40 Vibration Damping Using a Spiral Acoustic Black Hole

Wonju Jeon

13:00 Flexural Wave Focalization in Plates with Imperfect Two-dimensional Acoustic Black Hole

Wei Huang, Hongli Ji, Jinhao Qiu and Li Cheng

13:20 Truncated Acoustic Black Hole Structure with the Optimized Tapering Shape and Damping Coating

Jeong-Guon Ih, Mi-Seong Kim, Ik-Jin Lee and Jakob S. Jensen

- 13:40 Acoustic black hole manufacturing for practical applications and the effect of geometrical and material imperfection**
Elizabeth Patricia Bowyer and Victor Krylov
- 14:00 The energy absorption of Helmholtz resonators enhanced by Acoustic Black Holes**
Xiaoqiang Zhou and Fabio Semperlotti
- 14:20 Transfer matrices to analyze the acoustic black hole effect in duct terminations**
Oriol Guasch, Marc Arnela and Patrícia Sánchez-Martín
- 14:40 Finite Element Simulations of Acoustic Black Holes as Lightweight Damping Treatments for Automotive Body Panels with Application to Full Vehicle Interior Wind Noise Predictions**
Oskar Prill, Christian Roos and Rebecca Busch

27.07 Vibroacoustics: Mid and High Frequency Numerical Methods in Vibroacoustics I

Monday, August 22 | Hall E

Chairs: Oriol Guasch, Laurent Maxit

- 15:40 Modelling vibration transmission on frameworks of beams using Advanced Statistical Energy Analysis**
Carl Hopkins and Xing Wang
- 16:00 A scaling approach for the local response prediction in the mid- to high-frequency ranges**
Xianhui Li
- 16:20 Correlation between tire noise level and CLF of experimental SEA**
Kameyama Yohei, Hiroki Nakamura, Ryuya Nakajima and Toru Yamazaki
- 16:40 Definition of SEA models for structures with restricted accessibility**
Marcos Chimeno, Elena Roibás and Francisco Simón
- 17:00 Sub-structuring of mechanical systems based on the path concept**
Francesc Xavier Magrans, Jordi Poblet-Puig and Antonio Rodríguez-Ferran
- 17:20 Low-Vibration Design of Panel Structure by Using Vibration Energy Propagation Analysis**
Miyama Takeshi, Hiroki Nakamura, Atsuko Miyazaki and Toru Yamazaki

28 Vehicle Acoustics (Train)

Monday, August 22 | Hall 15

Chairs: Haike Brick, Nicolas Lessard

- 15:40 Acoustical Optimization of a Train Gearbox Based on Overall System Simulation**
Jan Troge, Welf-Guntram Drossel, Eric Hensel, Sebastian Zumach and Jan Bräunig
- 16:00 A minimal order model to investigate the hunting stability of a bogie with mechanically connected wheelsets**
- Presentation cannot be held due to the Turkish travel prohibition -
Osman Taha Sen
- 16:20 Study on the Application of Transfer Path Analysis to the Structure Borne Sound from the Bogies of Railway Vehicles**
Mineyuki Asahina, Katsuya Yamamoto, Takahiro Tomioka, Toshihiko Saito, Fuyutaka Ishii, Yoshihiro Fujii, Kenji Fujino and Takeshi Kurita
- 16:40 Benefits of operational transfer path analysis for sound engineering of rail-bound vehicles**
Alex Sievi and Hyo-In Koh
- 17:00 Optimum sound reduction index value for gangway constructions of metro trains**
Stefan Lutzenberger and Philipp Wloka

29.1 Noise & Health: WHO Environmental Noise Guidelines for the European Region - What is New?

Monday, August 22 | Hall C1

Chairs: Marie Eve Heroux, Stephen Stansfeld

- 13:00 WHO Environmental noise guidelines for the European Region - What is New?**
1. Policy Context and Methodology Used for Guideline Development
Marie Eve Heroux, Wolfgang Babisch, Goran Belojevic, Mark Brink, Sabine Janssen, Peter Lercher, Marco Paviotti, Goran Pershagen, Kerstin Persson Waye, Anna Preis, Stephen Stansfeld and Jos Verbeek
- 13:20 WHO Environmental noise guidelines for the European Region - What is new?**
2. New evidence on Health Effects from Environmental Noise and implication for Research
Stephen Stansfeld, Wolfgang Babisch, Mark Brink, Goran Belojevic, Marie Eve Heroux, Sabine Janssen, Peter Lercher, Marco Paviotti, Goran Pershagen, Kerstin Persson Waye, Anna Preis, Martin van den Berg and Jos Verbeek

13:40 WHO Environmental Noise Guidelines for the European Region - What is New? 3. Guideline recommendations and supporting evidence - What is new?
Goran Belojevic, Wolfgang Babisch, Mark Brink, Marie Eve Heroux, Sabine Jansen, Peter Lercher, Marco Paviotti, Goran Pershagen, Kerstin Persson Waye, Anna Preis, Stephen Stansfeld, Frits van den Berg and Jos Verbeek

14:00 WHO Environmental Noise Guidelines for the European Region - What is New? 4. Implementation of Guidelines and Implications for Practice
Mark Brink, Wolfgang Babisch, Goran Belojevic, Marie Eve Heroux, Sabine Jansen, Peter Lercher, Marco Paviotti, Goran Pershagen, Kerstin Persson Waye, Anna Preis, Stephen Stansfeld, Martin van den Berg and Jos Verbeek

29.2 Noise & Health: Effects of Sound Sources on Annoyance

Monday, August 22 | Hall C1

Chairs: Takashi Yano, Rainer Guski

14:20 The WHO evidence review on noise annoyance 2000-2014
Rainer Guski, Dirk Schreckenberger and Rudolf Schuemer

14:40 Noise surveys at five Norwegian airports
Truls Gjestland, Femke B Gelderblom and Idar L N Granøien

15:40 U.S. Civil Aircraft Noise Annoyance Survey Design
Becky Cointin, Natalia Sizov and James Hileman

16:00 A questionnaire survey on health effects of aircraft noise for residents living in the vicinity of Narita International Airport: Part-1 Background and summary
Saburo Ogata, Masaaki Hiroe, Koichi Makino, Akihiro Tamura, Shōsuke Suzuki, Ichiro Yamada and Masahito Yasuoka

16:20 A questionnaire survey on health effects of aircraft noise for residents living in the vicinity of Narita International Airport: Part-2 Analysis and result detail
Masaaki Hiroe, Koichi Makino, Saburo Ogata, Akihiro Tamura, Shōsuke Suzuki, Ichiro Yamada and Masahito Yasuoka

16:40 Social surveys on community response to a change in aircraft noise exposure before and after the operation of the new terminal building in Hanoi Noi Bai International Airport
Thao Linh Nguyen, Thulan Nguyen, Takashi Yano, Tsuyoshi Nishimura, Tetsumi Sato, Makoto Morinaga and Ichiro Yamada

17:00 Aircraft Noise Annoyance around Military Airfields in Japan
Makoto Morinaga, Tetsuya Sakuma, Keiji Kawai and Koichi Makino

17:20 Secondary Analysis of Exposure-response Relationships for Shinkansen Super-express Railway Noise in Japan
Shigenori Yokoshima, Takashi Morihara, Keiji Kawai, Takashi Yano, Atsushi Ota and Akihiro Tamura

17:40 Perception of tonal components contained in wind turbine noise

Sakae Yokoyama, Tomohiro Kobayashi and Hideki Tachibana

29.3 Noise & Health: Effects of Sound Sources on Cardiovascular Health

Monday, August 22 | Hall C1

Chairs: Elise van Kempen, Peter Lercher

8:20 Systematic review of evidence of the cardiovascular and metabolic effects of environmental noise - part 1

Elise van Kempen, Maribel Casas, Goran Pershagen and Maria Foraster

8:40 Systematic review of evidence of the cardiovascular and metabolic effects of environmental noise - part 2

Elise van Kempen, Maribel Casas, Goran Pershagen and Maria Foraster

9:00 Systematic reviews in noise epidemiology. Limitations and chances from a Public Health view

Peter Lercher

9:40 Source-specific transportation noise mortality from heart failure and myocardial infarction in Switzerland

Harris Héritier, Danielle Vienneau, Maria Foraster, Ikenna Eze, Mark Brink, Christian Cajochen, Jean Marc Wunderli, Nicole Probst-Hensch and Martin Röösli

10:00 NORAH - field study: The Effects of chronic exposure to traffic noise (aircraft, rail and road) on hypertension

Anja zur Nieden, Doreen Ziedorn, Karin Römer, Jan Spilski, Ulrich Möhler, Susanne Harpel, Dirk Schreckenberg and Thomas Eikmann

10:20 Environmental aircraft noise and stroke: a systematic review and meta-analysis

Verena Maria Weihofen, Janice Hegewald, Mandy Wagner, Ulrike Euler, Enno Swart, Hajo Zeeb, Peter Schlattmann and Andreas Seidler

10:40 Traffic noise and risk for incident atrial fibrillation

Mette Sørensen, Maria Monrad, Ahmad Sajadieh and Jeppe Christensen

Sessions and Posters on Tuesday, August 23

Keynote Session on Tuesday

Tuesday, August 23 | Hall 1

11:00 Silent electric train transportation - present and future technologies

Siv Leth

11:30 Underwater Radiated Noise of Ships: Measurement and Mitigation

Christ de Jong

Poster - P03 - Noise from Industry and Machinery

Tuesday, August 23 | Poster Session 15:00 - 15:40 | Foyer D-G | Poster Zone B and C

- **Study on the effect of multiple NES coupling forms on TET**
Zeyao Chen, Xian Wu and Jianwang Shao
- **Acoustic Fatigue Analysis of Weld on a Pressure Relief Line**
Salah Fahmy and Steven Rafferty
- **Estimation of Fatigue Damage from Vibration Measurements**
Salah Fahmy
- **Comprehension of Frequency Response Function from the Viewpoint of Wave Energy Propagation**
Yuichi Matsumura, Kouhei Furuya, Kosuke Ando and Toru Yamazaki
- **Project review: Elastic decoupling of a large roller grinder**
Thomas Schoenherr
- **Wind Turbine Noise Attenuation Using Modal Structural Damping**
Jutta Stauber, Brett Marmo, Mark Ott, Murray Snaith and Matthias Puff
- **A Quality Design of Bone Conduction Voice in Magnetic Resonance Imaging Noise**
Kojiro Takahashi, Kenji Muto and Kazuo Yagi
- **Noise Annoyance and Sleep Disturbance in the Vicinity of Five Wind Farms in Finland**
Anu Turunen, Tarja Yli-Tuomi, Pekka Tiittanen, Pekka Taimisto and Timo Lanki

Poster - P04 - Vibroacoustics, Aeroacoustics and Materials

Tuesday, August 23 | Poster Session 15:00 - 15:40 | Foyer D-G | Poster Zone A

- **Research on sound transmission characteristics of backing material for ultrasound transducers**
Guofeng Bai, Xiujuan Zhang, Fusheng Sui and Jun Yang
- **The research of new perforated ABS panels applied sound absorption**
Chuan-Wen Chou, Rong Ping Lai and Michael Chang
- **Acoustical characterization of bulk natural fibrous material using flow resistivity**
Shahab Fatima and Amiya R. Mohanty
- **Characteristics of Bridge Vibration and Infrasound due to Moving Different Types of Trucks**
Saiji Fukada, Hiroshi Iwabuki, Toshikazu Osafune, Yasuyuki Sano, Yasunao Matsumoto, Masayuki Shimura, Noboru Kamiakito, Hirokazu Hama and Kentaro Hayashi
- **Characterization of Anisotropic Acoustic Metamaterials**
Jun Hyeong Park, Hyung Jin Lee and Yoon Young Kim
- **Ultrasonic method for Measuring transport parameters using only the reflected waves at the first interface of porous materials having a rigid frame**
Mustapha Sadouki and Amel Fersi
- **Investigation of hysteresis friction in elements under complex stress state**
Ilya Tsukernikov, Vladimir Smirnov, Igor Shubin and Nina Umniakova
- **Theoretical and Experimental Study on the Stochastic Characteristics of Fluid Elastic Instability of Condenser Tubes**
Qi Zhang, Wenping Zhang and Pingjian Ming
- **Beijing New Airports Noise Environmental Impact Assessment and Influence Factors Analysis**
Xin Zhou, Xiaohu Hu, Gang Duan and Li Lu

Poster - P06 - Environmental Noise Directive, WHO Environmental Noise Guidelines

Tuesday, August 23 | Poster Session 15:00 - 15:40 | Foyer 1 | Poster Zone G

- **Potential of Novelty Noise Evaluation by Using Road Traffic Noise Maps in Japan**
Yasuhiro Hiraguri
- **Acoustics Parameters the Wings of Various Species of Owls**
Joanna Kopania

- **An experimental study on combined effects of high-speed railway noise and vibrations on activity disturbances**
Takashi Morihara, Shigenori Yokoshima and Yasunao Matsumoto
- **The Noise Characteristics and its Improvement by the Measurement Points of Road Traffic Noise**
Young Min Park and Kyoung Min Kim
- **Drive-by Multi-frequency Large-region Noise-source Mapping via Tomographic Imaging**
Cagdas Tuna, Shengkui Zhao, Thi Ngoc Tho Nguyen and Douglas L. Jones
- **Large-region Dynamic Tomographic Mapping of Environmental Noise Sources with Microphone Arrays**
Cagdas Tuna, Shengkui Zhao, Thi Ngoc Tho Nguyen and Douglas L. Jones
- **How high-frequency do children hear?**
Mari Ueda, Kaoru Ashihara and Hironobi Takahashi
- **Airborne ultrasound at german workplaces**
Andrea Wolff

Poster - P08 - Urban Sound Planning

Tuesday, August 23 | Poster Session 15:00 - 15:40 | Foyer 1 | Poster Zone F

Chair: Luigi Maffei

- **Descriptors and indicators for soundscape design: vibrancy as an example**
Francesco Aletta and Jian Kang
- **Towards the practical implementation of the holistic approach to urban sound planning**
Sonia Alves, Beate Altreuther and Joachim Scheuren
- **Urban space and the sound environment: transport system, urban morphology, quiet side and space users in the SONORUS project**
Laura Estévez Mauriz, Jens Forssén, Wolfgang Kropp and Georgios Zachos
- **SONORUS Urban sound planning project and test sites: an example within the planning stage**
Laura Estévez Mauriz, Sonia Alves, Jens Forssén, Wolfgang Kropp and Joachim Scheuren
- **Auditory attention modeling within SONORUS ESR 10**
Karlo Filipan, Michiel Boes, Annelies Bockstael, Bert de Coensel, Hrvoje Domitrović and Dick Botteldooren
- **Auralisation of outdoor fan noise in shielded areas**
Ignacio García Merino and Krister Larsson
- **Web based noise assessment: Mapping for the masses**
Christopher Francis Hoar and Kin Man, Raymond Wong

- **New methodologies for the noise annoyance assessment of urban projects**
Like Jiang, Massimiliano Masullo and Luigi Maffei
- **Urban Tranquility-towards immersive representation of noise and well-being in urban environments**
Poul Henning Kirkegaard and Arnthrudur Gísladóttir
- **Relationship Between Green Space-Related Variables and Traffic Noise Distribution in the Urban Scale, an Overall Approach**
Efstathios Margaritis and Jian Kang
- **SONORUS Project: Classification of historic urban areas through multisensory perception and expectation**
Virginia Puyana Romero and Luigi Maffei
- **Auralization of aircraft noise in an urban environment**
Frederik Rietdijk and Kurt Heutschi
- **Influence of weather conditions on perceived noise around an outdoor shooting range - A case study**
Anne-Catherine Witsel and Francis Moiny
- **Auralisation methods as tools for urban traffic noise assessment**
Georgios Zachos, Jens Forssén, Wolfgang Kropp and Laura Estévez Mauriz

Poster - P10 - Tyre/Road and Train Noise

Tuesday, August 23 | Poster Session 15:00 - 15:40 | Foyer 1 | Poster Zone D

- **Study on Prediction Models of Shinkansen Railway Noise at Cuttings**
Mariko Akutsu, Yukie Ogata, Toshiki Kitagawa, Nobuyuki Kimura and Masaaki Matsunuma
- **Practical Approach to EU Interim Railway Noise Modeling Method Adaptation**
Andrei Baranovskii
- **The Acoustic Effectiveness of Low Height Noise Barrier**
Petra Cizkova
- **Analysis of Noise Level by Chang of Vehicle Speeds at Different Types of Vehicle**
An Deok-Soon and Ohm Byung-Sik
- **Analyzing Noise Pressure Level at Different Setting Location of Microphone on Tire/Surface Noise Measurement**
Byungsik Ohm and Deoksoon An
- **Developing Evaluation Model of Tire Pattern Impact Noise**
Nobutaka Tsujiuchi, Akihito Ito, Atsushi Masuda, Hamiyu Seki and Hisashi Takahashi
- **A combined approach for CPX tyre hardness and temperature correction**
Reinhard Wehr and Andreas Fuchs

01.2 Active Control: Technologies and Practical Implementation of Active Noise and Vibration Control II

Tuesday, August 23 | Pflanzen und Blumen

Chairs: Joachim Bös, Carl Q. Howard

- 8:00 Silence is golden - Implementation of a noise cancelling office chair**
Daniel Treyer, Sebastian Gaulocher, Silvano Germann and Mathias Siegenthaler
- 8:20 Effectiveness Characteristics of the Neural Network as Active Noise Control Algorithm against Residential Ventilation Openings**
Anai Ken
- 8:40 Experimental Study on the Influence of the Sensor and Actuator Arrangement on the Performance of an Active Noise Blocker for a Tilted Window.**
Jonas Hanselka, Sergej Jukkert and Delf Sachau
- 9:00 Active noise control applied to open windows**
Christian Carme, Olivier Schevin, Clement Romerowski and Julien Clavard
- 9:20 Using active sound intensity control to Increase Transmission loss**
Diego A. Siviero and Jose Roberto F. Arruda
- 9:40 Experimental study of active sound transmission control into enclosed spaces**
Christian Hesse, Veatriki Papantoni and Stephan Algermissen
- 10:00 Recursive Least Square Algorithm-Based Acceleration Harmonics Identification for an Electro- hydraulic Shaking Table**
Jianjun Yao, Le Zhang, Qingtao Niu, Shuo Chen, Tao Wang and Zhenshuai Wan
- 10:20 Active Vibration Reduction of Rotating Machinery Using a New Mass Distribution Control System Design**
Ozan Enginoglu and Hasan Ozturk
- 10:40 Mastering Wind Turbine Tonalities with Active Vibration Control**
Carsten Ebert, Steffen Pankoke, Jürgen Engelhardt and Sebastian Katz

02.5 Advanced Measurement Techniques: Monitoring Environmental Sound and Vibration

Tuesday, August 23 | Hall C2

Chairs: Douglas Manvell, Jørgen Hald

- 14:20 Many Apps Make Sound Work (Some Don't)**
Douglas Manvell, Niels Svendsen and Tomasz Cielecki

- 14:40 Fusion of multiple microphone array data for localizing sound sources in an industrial area**
Dick Botteldooren, Timothy van Renterghem, Bert de Coensel, Luc Dekoninck, Vincent Spruytte, Alphonso Makovec, Frits van der Eerden, Peter Wessels and Tom Basten
- 15:40 Use of Long Term Monitoring Data for Defining Baseline Sound Levels**
Christopher Skinner, Sue Thomas and Paul Shields
- 16:00 Uncertainty of Standardized Aircraft Noise Descriptors Evaluated from Measurements**
Alois Heiss and Berthold Vogelsang
- 16:20 Urban acoustic imaging : from measurement to the soundscape perception evaluation**
Raphaël Leiba, François Ollivier, Régis Marchiano, Nicolas Misdariis and Jacques Marchal
- 16:40 DNN-based Environmental Sound Recognition with Real- recorded and Artificially-mixed Training Data**
Yasutaka Nakajima, Masahiro Sunohara, Taisuke Naito, Norihito Sunago, Toshiya Ohshima and Nobutaka Ono
- 17:00 Comparison Between the Impulse Response Beamforming with the Ray-Tracing Simulation of a Room**
Frederico Heloui De Araujo, Julio Cesar Boscher Torres and Fernando A. N. Castro Pinto
- 17:20 A Bayesian Filter for Sound Environment System with Quantized Observation**
Akira Ikuta
- 17:40 Noise-Robust Reverberation Time Estimation Based on Sound HOS Decay**
Yosra Mzah and Meriem Jaidane

03.1 Aeroacoustics: Duct Aeroacoustic

Tuesday, August 23 | Hall F

Chair: Ennes Sarraj

- 16:20 Study on Acoustic, Vibration and Flow Induced Noise Characteristics of T-shaped rectangular cross-sectional pipe**
Masaaki Mori, Takayuki Masumoto and Kunihiro Ishihara
- 16:40 Modal filters for in-duct sound based on the Cremer impedance and micro-perforated plates**
Stefan Sack and Mats Åbom
- 17:00 Relating the Statistical Values of Turbulence to the Flow Induced Sound and resulting Mechanical Vibrations in Multi-channel systems**
Natalie Helena Schlachter and Manfred Kaltenbacher

17:20 Turbulent boundary layer noise in pipe flow

Seungtae Hwang and Young J Moon

17:40 Simulation of Surge in the Air Induction System of Turbocharged Internal Combustion Engines

Rick Dehner, Ahmet Selamet, Emel Selamet, Philip Keller, John Shutty, Kevin Tallio, Keith Miazgowiec and Robert Wade

05.1 Aircraft Interior Noise: General

Tuesday, August 23 | Hall A2

Chairs: Alexander Peiffer, Manuel Etchessahar, Martin Wandel

13:00 Next generation aircraft - A challenge for Interior Acoustics Developments

Henning Scheel and Pierre Lempereur

13:20 Design Requirements of Acoustic Flight LAB Platform

Martin Wandel and Henning Scheel

13:40 From engine integration to cabin noise: drivers to accurate interior noise evaluations

Magdi Omais, Yann Colin, Jörn Biedermann and Martin Wandel

14:00 Coupling of multi-tone signatures and fuselage structures

Mark Teschner, Martin Wandel, Arno Röder, Peter Faulhaber and Stephan Tewes

14:20 Dynamic characterization of the A400M Acoustics Fuselage Demonstrator

René Winter, Jörn Biedermann, Marc Böswald and Martin Wandel

14:40 Advanced correlation criteria for the mid frequency range

Jörn Biedermann, René Winter, Martin Wandel, Marc Böswald and Michael Sinapius

05.2 Aircraft Interior Noise: Technologies for Noise Reduction

Tuesday, August 23 | Hall A2

Chairs: Alexander Peiffer, Manuel Etchessahar, Martin Wandel

8:00 A Self-Adaptive Resonant Device and its use for Noise Control in Turbo-Prop Aircraft

Mats Gustavsson

8:20 New Polyvinylpyrrolidone (PVP) Based Soundproofing Materials through Electrospinning

Giuseppe Petrone, Joshua Avossa, Francesco Branda and Francesco Marulo

8:40 Fuselage Excitation During Cruise Flight Conditions: A New CFD Based Pressure Point Spectra Model

Alexander Klabas, Christina Appel, Michaela Herr and Sören Callsen

- 9:00 Alternative Methods for the Measurement of Panel Transmission Loss under Diffuse Acoustic Field Excitation**
Olivier Robin and Alain Berry
- 9:40 Panel substructure with an adaptive boundary system - first experimental results**
Manuel Baschke and Delf Sachau
- 10:00 Optimisation of passive/active systems for reduced interior aircraft noise**
Benoît Petitjean, Lionel Zoghaib and Uwe Mueller
- 10:20 A Review of Noise and Vibration Control Technologies for Rotorcraft Transmissions**
Justin Jon Scheidler and Vivake Asnani
- 10:40 Evaluation of Robust Position Optimization of Loudspeakers and Microphones for an Adaptive Active Noise Control System**
Steffen Ungnad, Delf Sachau and Martin Wandel

05.3 Aircraft Interior Noise: Simulation I

Tuesday, August 23 | Hall A2

Chairs: Alexander Peiffer, Manuel Etchessahar, Martin Wandel

- 17:00 Broadband Prediction of Sound and Vibration Transmission through Aircraft Fuselage**
Gerard Borello and Sören Callsen
- 17:20 An SEA modeling of General Surface Pressure Excitations Based on their Wavenumber-Frequency Spectrum**
Augusto Amador Medeiros, Luca Alimonti, Bryce Gardner, Sören Callsen and Alexander Klabes
- 17:40 Similitudes for Acoustic Volumes: Analytical Models for the Response**
Sergio De Rosa, Giuseppe Petrone and Francesco Franco

05.4 Aircraft Interior Noise: Psychoacoustics and Testing

Tuesday, August 23 | Hall A2

Chairs: Alexander Peiffer, Manuel Etchessahar, Martin Wandel

- 15:40 Spatial reproduction of aircraft cabin noise in a full-scale mock-up**
Alain Berry and Philippe-Aubert Gauthier
- 16:00 The influence of the spectral envelope of multi-tone sounds on loudness and preference of multi-tone sounds**
Stephan Töpken, Henning Scheel, Reinhard Weber and Steven van de Par
- 16:20 Driving parameters for annoyance of Buzz Saw Noise in Aircraft Cabin**
Ansgar Wempe, Stephan Töpken, Henning Scheel and Reinhard Weber

16:40 Cabin noise exposure assessment of the Royal Canadian Air Force CH-147F helicopter through flight testing

Sebastian Ghinet, Andrew Price, Viresh Wickramasinghe, Yong Chen and Anant Grewal

06 Auralisation of Environmental Sound

Tuesday, August 23 | Hall 7

Chairs: Jens Forssén, Joo Young Hong

15:40 Auralisation of Railway Noise: A Concept for the Emission Synthesis of Rolling and Impact Noise

Reto Pieren, Jean Marc Wunderli, Armin Zemp, Sebastian Sohr and Kurt Heutschi

16:00 Auralization Applied to the Evaluation of Pedestrian and Bike Paths in Urban Environments

Julien Maillard and A Kacem

16:20 Comparison of Road Tyre Noise Auralisation Methods

Alex Southern and Damian Murphy

16:40 Road Noise Auralisation for Planning New Roads

Per Finne and Jakob Fryd

17:00 Compressive beamforming for moving sound source auralization

Fanyu Meng, Bruno Masiero and Michael Vorlaender

17:20 Background traffic noise synthesis

Georgios Zachos, Jens Forssén, Wolfgang Kropp and Laura Estévez Mauriz

17:40 Application of Wave Field Synthesis in Virtual Acoustic Engineering

Jakob Bergner, Tobias Clauß, Albert Zhykhar, Christoph Sladeczek and Sandra Brix

07.2 Building Acoustics: Acoustics of Indoor Spaces II

Tuesday, August 23 | Hall D

Chairs: Jeong Cheol-Ho, Pyoung Jik Lee, Erling Nilsson, Gerd Marbjerg

8:00 The effect of human activity noise on the acoustic quality in open plan offices

Tania Stenholt Dehlbæk, Cheol-Ho Jeong, Jonas Brunskog, Claus Moller Petersen and Pierre Marie

8:20 More is less - Positive effects of higher volume ventilation sound on cognitive performance and acoustic comfort in offices

Andreas Liebl, Maria Zaglauer and Noemi Martin

8:40 Low and mid Frequency Design - Implementation of Room Acoustics in different Building Types and for different Kinds of Use

Christoph Kirch and Uta Pottgiesser

- 9:00 An Investigation Into The Acoustic Conditions Of An Open Plan Office Located In Ankara**
Tuba Tunc Kurt, Fusun Demirel and Mehmet Hakan Kandemir
- 9:40 Telephone booths for confidential calls in office spaces**
Roman Tschakert
- 10:00 Wellbeing at new ways of working - acoustics**
Christine Kohlert
- 10:20 Psychoacoustic perception of transient effects resonance modes at low frequencies in a listening environment**
Lorenzo Rizzi, Dario D'Orazio, Simona De Cesaris, Fedrico Ascari and Gabriele Ghelfi
- 10:40 Improvement of interior acoustics and speech quality in small office room using natural material**
Amiya R. Mohanty and Shahab Fatima

07.3 Building Acoustics: General

Tuesday, August 23 | Hall F

Chairs: Carl Hopkins, Berndt Zeitler

- 8:00 Isolation Room Exhaust Fan Noise in a Hospital**
Chad Himmel
- 8:20 Low frequency sound energy decay in coupled volume rooms: results from a numerical study**
Tim Tijsma and Maarten Hornikx
- 8:40 Research on Airborne Sound Insulation Performance of Lightweight Steel Gauge and Lightweight Concrete Partition Wall**
Weibin Wu, Guojun Yan and Jie Lin
- 9:00 Control of resonance penetration phenomenon in double leaf structure for sound insulation by insertion of small Helmholtz resonator and porous material**
Teruo Iwase, Satoshi Sugie, Hiroyasu Kurono, Yasuaki Okada and Koichi Yoshihisa
- 9:20 Sound transmission analyses of impacts of wall renovation for traditional timber-framed dwellings**
Meltem Erdil, Ayse Tavukcuoglu and Mehmet Caliskan

07.5 Building Acoustics: Measurement Methods in Building Acoustics I

Tuesday, August 23 | Hall D

Chairs: Stefan Schoenwald, Patricio Fausti

- 15:40 Effects of the parameters of wavelets applied in de-noising of room impulse responses**
Djordje Damjanovic, Dejan Ćirić and Ana Djordjevic
- 16:00 Estimation of correction for room impulse response truncation by applying nonlinear decay model**
Marko Janković and Dejan Ćirić
- 16:20 An Empiric Study of the Spatial Uncertainty of Reverberation Time Measurement Below 50 Hz**
Fredrik Ljunggren, Rikard Öqvist and Christian Simmons
- 16:40 Applicability of measurement method according to ISO 16283 in small rooms at low frequencies**
Stefan Schoenwald, Armin Zemp and Stefano Pedersoli
- 17:00 Measuring Absorption Below 100Hz with a particle Velocity- Pressure Sensor**
Douglas John Shearer and Stephen Dance
- 17:20 In-situ impedance and absorption coefficient estimations using a double-layer microphone array**
Karim Haddad, Wookeun Song and Jørgen Hald
- 17:40 Sound Radiation Efficiency Measurements on Cross-Laminated Timber Plates**
Andrea Santoni, Paolo Bonfiglio, Patrizio Fausti, Stefan Schoenwald and Hans-Martin Tröbs

07.6 Building Acoustics: Structure-borne and Impact Noise in Buildings I

Tuesday, August 23 | Hall F

Chairs: Barry M. Gibbs, Berndt Zeitler, Atsuo Hiramitsu

- 10:00 Source quantities for vibro-acoustic transmission into lightweight building elements**
Barry Marshall Gibbs and Andreas Mayr
- 10:20 Prediction of sound pressure levels in rooms using EN 12354 and the characteristic structure-borne sound power of structure-born sound sources**
Albert Vogel, Joerg Arnold, Oliver Kornadt, Conrad Voelker and Volker Wittstock
- 10:40 Prediction of structure-borne sound in buildings using the substructure synthesis method**
Kenichi Takebayashi, Aya Tanaka, Kei Andow and Takashi Koga

- 13:00 Finite Element Simulation of a Laboratory Reception Plate for Structure-borne Sound Power Measurements**
Steffi Reinhold, Carl Hopkins and Berndt Zeitler
- 13:20 A FEM-based planning tool for the vibro-acoustic design of wooden floors at low frequencies**
Mathias Kohrmann, Martin Buchschmid, Ulrich Schanda and Gerhard Müller
- 13:40 Modelling structure-borne sound transmission across a timber-frame wall using SEA**
Fabian Schöpfer, Carl Hopkins, Andreas Mayr and Ulrich Schanda
- 14:00 Accuracy of prediction methods for rain noise levels**
Daniel Griffin
- 14:20 In situ measured flanking transmission in light weight timber houses with elastic flanking isolators - part 2**
Anders Agren and Fredrik Ljunggren
- 14:40 Laboratory Data Examining Impact and Airborne Sound Attenuation in Cross-Laminated Timber Panel Construction - Part 2**
Matthew Golden and Wilson Byrick
- 15:40 Improvement of Floor Impact Sound Insulation in Cross Laminated Timber Model Building for Experiment**
Atsuo Hiramitsu, Toru Otsuru, Reiji Tomiku and Koji Harada
- 16:00 Strategies to avoid boomy screeds**
Christian Burkhart and Michael Wolf

07.7 Building Acoustics: Acoustic Design and Performance Evaluation of Building Envelope

Tuesday, August 23 | Hall D

Chair: Simone Secchi

- 13:00 In situ measurement of noise incidence angle distribution at the building envelope**
Miodrag Stanojević, Miloš Bjelić, Dragana Šumarac Pavlović and Miomir Mijić
- 13:20 Acoustic Measurements on a 1:1 Scale Model of a Shading System for Building Façade in a Semi-Anechoic Chamber**
Nicolo' Zuccherini Martello, Patrizio Fausti and Simone Secchi
- 13:40 Wind tunnel acoustic testing of wind generated noise on building facade elements**
Ivan Bubić, Ivan Tudor and Juraj Francetić
- 14:00 A Method for Design of Sound Insulation of Glazed Balconies Against Traffic Noise**
Ville Juha Johannes Kovalainen, Mikko Kylliäinen and Timo Huhtala

14:20 Typical Acoustical Performances of Façades of Italian Schools: the effect of the outdoor noise on the indoor acoustic comfort

Simone Secchi, Chiara Scrosati, David Casini, Gianfranco Cellai, Lucia Busa and Fabio Scamoni

14:40 An Electronic Database of Façade Sound Isolation

Anthony Nash

09.3 Environmental Noise Directive: Implementation and Evaluation of Measures

Tuesday, August 23 | Hall B2

Chairs: Jakob Fryd, Sebastian Eggers

10:20 Evaluation of Noise Mitigation Measures: Common Methods and a Novel Approach

Sebastian Eggers

10:40 Evaluation of a Noise Barrier Project with Critical Neighbours

Allan Jensen, Sofie Ottesen and Emine Celik Christensen

13:00 Noise Insulation Projects in Denmark

Kenneth Grenaa Lillelund and Soren Damgaard Kristensen

13:20 The Need for Updated Traffic Noise Spectra, Used for Calculation of Sound Insulation of Windows and Facades

Meliha Mesihovic, Jens Holger Rindel and Ingunn Milford

13:40 Measurements on Low Noise Road Surfaces

Wolfram Bartolomaeus

14:00 Evaluation of Noise Mitigation Measures: Summary of four research projects - CEDR "Call 2012: Noise"

Jovana Dilas and Sebastian Eggers

14:20 Digital computation of exchange rates for calculation of noise dosage in embedded systems

Ali Imtiaz and Guillaume Goulamhousen

09.4 Environmental Noise Directive: Quiet Areas

Tuesday, August 23 | Hall B2

Chairs: Urs Walker, Eckhart Heinrichs

8:20 Noise Mapping of Quiet Areas

Andreas Robert Novak

8:40 The quiet city - planning and designing public urban spaces that meet people's needs

Trond Maag

- 9:00 Quiet Areas: Outer Experiences & Inner Sensations - A qualitative Approach using Film and Drones**
Rikke Munck Petersen
- 9:20 Empowering people on the assessment of the acoustic comfort of urban places: CITI-SENSE project**
Itziar Aspuru, Igone Garcia, Karmele Herranz-Pascual and Alvaro Santander
- 9:40 Identification Of Quiet Areas In Hamburg**
Uwe Schacht

13.1 Machinery Noise: Machinery Noise and Quiet Machine Design I

Tuesday, August 23 | Hall 1

Chairs: Joachim Bös, E. Carletti

- 13:00 Measurement of Gear Noise Behaviour for Different Microgeometries**
Thanak Utakapan, Bernhard Kohn, Maximilian Lukas Fromberger, Michael Heider, Michael Otto, Bernd-Robert Höhn and Karsten Stahl
- 13:20 Inequidistant gearing used to reduce gear noise**
Philipp Neubauer, Joachim Bös and Tobias Melz
- 13:40 Simplified methodology for pump acoustic field analysis: the effect of different excitation boundary conditions**
Giuseppe Miccoli, Eleonora Carletti, Francesca Pedrielli and Giorgio Parise
- 14:00 Application of numerical analysis to the development of wind power plants with a focus on the noise emission during construction and operation**
Boris Dilba, Otto Von Estorff, Kristof Heitmann, Stephan Lippert, Hannes Marckmann, Marian Markiewicz, Marcel Ruhnau and Olgierd Zaleski
- 14:20 Improvement of the vibro-acoustic behaviour of vibratory feeders for pasta by modelling and experimental techniques**
Marco Buzzoni, Emiliano Mucchi and Giorgio Dalpiaz
- 14:40 A Structural Design Method for Five-axis Machining Center Based on Stiffness Matching**
Cheng Zhang, Jianrun Zhang, Beibei Sun and Xi Lu
- 15:40 Applying a scanning sound intensity p-u probe to optimize and reduce the noise radiation of an UAV developed for cinematography**
Matthew Rowe, Seamus Rowe, Shaun Pentecost, Daniel Fernandez Comesana and Gareth Beckermann
- 16:00 Modeling of Non-linear damper for suppression of micro vibration on a car body**
Hiroki Nakamura, Toshiaki Kamo, Hideki Ohsawa, Hiroshi Sakanoue and Toru Yamazaki

14.1 Materials: Acoustics of Porous Media

Tuesday, August 23 | Hall 1

Chairs: Nicholas Chotiros, Frank Simon

- 8:00 Sound absorption measurements of some porous loose granular materials**
Ayoub Boubel, Said Boushine, Mohammed Garoum, Abdelmajid Bybi and Najma Laaroussi
- 8:20 Modeling and Optimization of a Dual Density Lightweight Acoustic Material**
Xinxing Xie, Yahong Chen, Qu Zhang, Shanmiao Yang and Shawn Wang
- 8:40 Sound Propagation in Activated Carbon felts**
Hugo Karpinski, Rodolfo Venegas, Olga Umnova and Jonathan Hargreaves
- 9:00 Broadband noise control based on the coupling of Bragg reflection and local resonance**
Xu Wang, Wuzhou Yu, Zaixiu Jiang, Xingyi Zhu and Dongxing Mao
- 9:20 Advance in Sound Absorption and Propagation Properties of Porous Metals under Harsh Environment Conditions**
Bo Zhang
- 9:40 New Sound Absorption Materials: Using Additive Manufacturing for Compact Size, Broadband Sound Absorption at Low Frequencies**
Foteini Setaki, Martin Tenpierik, Arjan van Timmeren and Michela Turrin
- 10:00 Sound absorption of Helmholtz resonator included a winding built-in neck extension**
Nakanishi Shinsuke
- 10:20 Long Elastic Open Neck Acoustic Resonator in flow**
Frank Simon
- 10:40 Enhancing Microperforated Panel Absorption by Subdividing the Backing Air-space into Channels and Resonators**
Weiyun Liu and David W. Herrin

14.2 Materials: Experimental Porous Characterisation - from State of the Art to Standardization

Tuesday, August 23 | Planten un Bloemen

Chairs: Luc Jaouen, Xiaolin Wang

- 13:00 The acoustic characterization of porous media and its standards**
Luc Jaouen, François-Xavier Bécot and Fabien Chevillotte
- 13:20 Acoustic characterization of air-saturated porous materials by solving the inverse problem.**
Fellah Zine, Amine Berbiche, Mohamed Fellah, Erick Ogam and Claude Depollier

- 13:40 Inverse Acoustic Characterization of Rigid Frame Porous Materials from Impedance Tube Measurements**
Matti Niskanen, Jean Philippe Groby, Aroune Duclos, Olivier Dazel, Jean Christophe Le Roux, Nicolas Poulain, Timo Lähivaara and Toni Huttunen
- 14:00 Dynamic parameters estimation based on longitudinal vibration using an inverse method in FEM**
Zhengyu Wei, Hong Hou, Yunke Huang and Jing Shi
- 14:20 Sound Absorption Measurements: Comparison of Standard Tests in Reverberant Room with Measurements using a Synthesized Diffuse Acoustic Field**
Olivier Robin, Celse Kafui Amedin, Alain Berry, Nouredine Atalla, Olivier Doutres and Franck Sgard
- 14:40 The suitability of additive manufacturing materials in a 1:10 scale reverberation chamber.**
Simon Brown and Stephen Dance

15 Noise Barriers

Tuesday, August 23 | Hall 8

Chairs: Jean-Pierre Clairbois, Michael Chudalla

- 13:00 State of the art of Noise barriers in CEDR experience**
Alberto De Leo, Sébastien Marcocci and Barbara Vanhooreweder
- 13:20 Acoustic performances of roadside noise barriers: wide scale on-site measurement survey in Flanders**
Peter Houtave, Jean-Pierre Clairbois, Barbara Vanhooreweder, Ann Buytaert, Christ Glorieux and Geert Dierckx
- 13:40 Reflexion of noise barriers - Measurements at the far sound field**
Heinz Hoislbauer
- 14:00 In-situ testing of acoustical properties of noise barriers**
Wout Schwanen and Bert Peeters
- 14:20 Scattering to Reduce Diffraction**
Michael Chudalla
- 14:40 Optimization of an Acoustic Resonator for Noise Barrier Top Elements**
Harald Ziegelwanger, Marco Conter, Andreas Fuchs, Paul Reiter and Reinhard Wehr
- 15:40 Experimental Investigation on the Sound Reduction Performance of Frequency Controlled Acoustic Interference Cavities**
Arun Arjunan, Jonathan Rackley and Mark Stanford
- 16:00 Assessment of the Performance of Sonic Crystal Noise Barriers for the Mitigation of Construction Noise**
Heow Pueh Lee, Long Bin Tan and Kian Meng Lim

- 16:20 Innovations that Make Infrastructure and Construction Noise Control More Effective**
Peter Wilson
- 16:40 Management of Noise barriers in Wallonia**
Sébastien Marcocci
- 17:00 Designing Separate Zones with Reduced Noise on the Property**
Marian Tracz and Krystian Wozniak
- 17:20 Assessing the Relative Sustainability of Long Parallel Noise Barriers and Related Noise Reducing Devices on an Existing Motorway in Italy**
Crina Oltean-Dumbrava and Mark Richards
- 17:40 Optimization of Noise Barrier Reflection Properties**
Paul Reiter, Reinhard Wehr, Harald Ziegelwanger and Marco Conter

16 Numerical Acoustics II

Tuesday, August 23 | Hall A1

Chairs: Philippe Jean, Timothy van Renterghem

- 8:00 Development and implementation of high density occupied spaces grid generation with complex geometry used in thermal acoustical study**
Eusébio Conceição, Melanie T. S. Sousa and M^a Manuela Lúcio
- 8:20 Modelling of multi-connected acoustical spaces by the surface impedance approach**
Goran Pavic and Liangfen Du
- 8:40 Experimental Investigation of the Use of Equivalent Sources Model in Room Acoustics Simulations**
Yangfan Liu and J. Stuart Bolton
- 9:00 Damage Detection in Sandwich Structure using Tap Test**
Sung Joon Kim
- 9:40 Simulation of Flow Induced Noise in Exhaust Silencers**
Barbara Neuhierl
- 10:00 Static pressure and temperature coefficients of working standard microphones**
Salvador Barrera-Figueroa, Vicente Cutanda Henríquez and Antoni Torras-Rosell
- 10:20 A numerical method for determining the radial wave motion correction in plane wave couplers**
Vicente Cutanda Henríquez, Salvador Barrera-Figueroa and Antoni Torras-Rosell
- 10:40 Some Results of Benchmark Cases in Linear Acoustics**
Steffen Marburg
- 13:00 Isogeometric Boundary Element Method for Acoustics**
Sören Keuchel, Boris Dilba, Olgierd Zaleski and Otto von Estorff

- 13:20 On the cost reduction of the fast BEM Hierarchical Matrix approach for partly symmetric surfaces**
Boris Dilba, Sören Keuchel, Olgierd Zaleski and Otto von Estorff
- 13:40 Boundary elements for noise barriers above an absorbing ground**
Rafael Piscoya and Martin Ochmann
- 14:00 Efficient edge source approach to the modeling of multi-edge noise barrier tops**
U. Peter Svensson, Sara R. Martín and Andreas Asheim
- 14:20 Augmenting Road Noise Engineering Methods using the Boundary Element Method**
Matthew Kamrath, Julien Maillard, Philippe Jean, Dirk van Maercke and Judicaël Picaut
- 14:40 Effects of source type, position, and train structure on BEM calculations**
Christian Kasess, Holger Waubke, Reinhard Wehr, Marco Conter, Christian Kirisits, Harald Ziegelwanger and Martin Kriegisch
- 15:40 Computing vibration transfer from trains to buildings by means of 2D1/2 and 2D3/4 models.**
Philippe Jean
- 16:00 Coupling of BEM with analytic solution for shell elements in 2.5D**
Holger Waubke, Wolfgang Kreuzer and Christian Kasess
- 16:20 Acoustic Fluid-Structure Interaction by Coupled Fast BE-FE Approaches**
Lothar Gaul, Dominik Brunner and Michael Junge
- 16:40 Influence of Homogenization of Foundation Impedance on Underwater Noise Radiation of a Stiffened Cylindrical Hull**
Ji-Cai Lang, Jian Qiang Ma, Xue-Ren Wang and Xu-Hong Miao
- 17:00 Underwater Noise Radiation Source Model Simplification of a Catamaran**
Fu-Zhen Pang, Shuo Li, Haichao Li and Hengyu Zhai
- 17:20 Vibration source Identification method of equipment and its application**
Xu-Hong Miao, Kai-Fu Ye, Xue-Ren Wang and Fu-Zhen Pang

17.1 Product Sound Quality: Perception of Electric and Hybrid Vehicles: From Alert Sound Design to Interior Noise II

Tuesday, August 23 | Hall 8

Chairs: Ercan Altinsoy, Katsuya Yamauchi, Etienne Parizet

- 8:00 Study of a low-cost end-fire array for use in electric vehicles**
Jesus Carbajo, Stephen Elliott and Jordan Cheer
- 8:20 Perceptual evaluation of the sound quality of car HVAC systems**
Antoine Minard, Christophe Lambourg and Patrick Boussard

8:40 Latest results on the features posed by hybrid and electric vehicles: a special attention about their effect on the noise maps

Nuria Campillo - Davo, Hector Campello-Vicente, Ramon Peral-Orts, Miguel Sanchez-Lozano and Emilio Velasco-Sanchez

17.2 Product Sound Quality

Tuesday, August 23 | Hall 8

Chairs: Ercan Altinsoy, Masayuki Takada

9:20 Improvement in the prediction performance of subjective evaluation of sound quality for vehicle HVAC system by using SVM algorithm

Fei Xue, Beibei Sun and Lie Li

9:40 Estimation of Electric Shaver Sound Quality using Artificial Neural Networks

Serkan Atamer and Ercan Altinsoy

10:00 Sketching Step in Sound Design: the Sound Designers' Point of View

Patrick Boussard, Clément Dendievel and Hélène Lachambre

10:20 Uncomfortable loudness level on auditory-evoked responses and spontaneous activity in auditory pathway

Atsuto Shukunami, Asuka Otsuka, Shunsuke Ishimitsu and Seiji Nakagawa

10:40 A Quantitative Evaluation of Occupational Noise Exposure in Marine and Mining

Vasos Alexandrou and Peter Teague

18.5 Psychoacoustics: Psychoacoustics Basis of Noise Evaluation

Tuesday, August 23 | Hall C1

Chairs: Hugo Fastl, Sonoko Kuwano

8:00 Sharpness evaluation of temporally varying sounds

Sonoko Kuwano and Seiichiro Namba

8:20 Experiments on tone adjustments

Jesko Verhey and Jan Hots

8:40 Comparison of listening test methods to evaluate tonality perception

Clément Dendievel, Antoine Minard, Christophe Lambourg and Patrick Boussard

9:00 Psychoacoustics Survey Results: Psychological Factors Affecting Noise Distraction

Frans Davidsson

9:40 "Pixelated speech": Manipulating the temporal resolution of spectral and level changes in disruptive irrelevant background noise

Wolfgang Ellermeier, Katharina Rost and Josef Schlittenlacher

- 10:00 Development of Combined Noise Annoyance Model Based on the Partial Loudness Model**
Chanil Chun, Doo Young Gwak, Kiseop Yoon and Soogab Lee
- 10:20 Hearing loss simulator for sound quality applications**
Etienne Parizet, Nicolas Grimault, Samuel Garcia, Alexandra Corneyllie and Laurent Brocolini
- 10:40 Effects of partial masking for vehicle sounds**
Hugo Fastl, Josef Konradl and Stefan Kerber
- 13:00 Evaluation on sleepiness under long term exposure of car interior noise while driving a small diesel truck -A model for sleepiness by physical and physiological metrics-**
Hashimoto Takeo and Shigeko Hatano
- 13:20 Characterization of Next-generation Car Sounds**
Youyi Bi, Tahira Reid and Patricia Davies
- 13:40 Psychoacoustic investigations on the efficiency of different noise barriers**
Christine Huth, Manfred Liepert and Ulrich Möhler
- 14:00 Hearing sensitivity estimation of frequency modified railway noise using sound quality metrics**
Kiseop Yoon, Doo Young Gwak, Chanil Chun and Soogab Lee
- 14:20 Analysis of increased annoyance reactions after the introduction of new tramways, based on psychoacoustic parameters**
Michael Cik, Manuel Lienhart and Peter Lercher
- 14:40 Acoustic annoyance inside aircraft cabins - A listening test approach**
Lena Schell-Majoor and Robert Mores
- 15:40 Picture Frustration Test on environmental attitudes of the community living around Noi Bai International Airport**
Thulan Nguyen, Takashi Yano, Rina Yoshidome, Sonoko Kuwano and Ichiro Yamada
- 16:00 Sound quality evaluation of drum type washing machine at drying and the improvement instance**
Junji Yoshida, Rei Yamashita, Shota Yoshida, Tomohiro Fujii and Akihiro Hosokawa
- 16:20 The Impact Of Sound And Room Acoustics In Healthcare Facilities: A Room Acoustic Intervention Study In A Dementia Clinic In Munich.**
Mai-Britt Beldam and Birgit Dietz
- 16:40 Evaluation of Teeth Grinding Sounds during Sleep**
Tomomi Yamada, Takafumi Kato, Sonoko Kuwano and Mikako Hayashi
- 17:00 Relevance of the equal energy principle to individual sources of neighbourhood noise**
Daniel Baker

- 17:20 Calculation of laboratory spectrum uncertainty for various categories of hearing protectors**
Jeremie Voix and William Murphy
- 17:40 The physical and psychoacoustic characteristics of construction noises**
Sungchan Lee and Seonwoong Kim

21.2 Soundscape: Urban Soundscape Applications

Tuesday, August 23 | Hall B1

Chairs: Greg Watts, Jin Yong Jeon

- 8:00 Tranquillity Trails - Designs for City and Town**
Greg Watts
- 8:20 Are Earthquake Victims Living in Highway-side Public Housing Still Dissatisfied with Public Housing Overall?: a Follow-up Survey of Disaster-response Public Housing**
Koji Nagahata, Yuki Takahashi and Yuta Okazaki
- 8:40 On Urban Soundscape Mapping: A Computer Can Predict the Outcome of Soundscape Assessments**
Peter Lundén, Östen Axelsson and Malin Hurtig
- 9:00 Framework for Research on Improved Life Quality**
Frans Mossberg
- 9:40 A Relation of Urban Built Environment and Soundscape Identification**
Lei Yu, Yu Yang, Jian Kang, Mindi Zhang and Yuan Xu
- 10:00 Relationship between soundscapes and landscape factors in urban commercial spaces**
Joo Young Hong and Jin Yong Jeon
- 10:20 Post-hoc Analysis of the Two Temporary Acoustic Shelters in London**
Tin Oberman, Bojana Bojanić Obad Šćitaroci and Kristian Jambrošić
- 10:40 Study of Soundscape Emotions Alteration by a Blend of Music Signals**
Stone Cheng, Shi-Shiang Niu and Cheng-Kai Hsu

21.3 Soundscape: Soundscape in Architecture, Urban Design and Landscape

Tuesday, August 23 | Hall B1

Chairs: Jürgen Bauer, Xiaomei Yuan

- 15:40 The new ISO-standard on "Soundscape" - Maximizing the benefit for the Architectural design process**
Jürgen Bauer
- 16:00 Soundscapes in Historic Settings - A Case Study from Ancient Greece**
Pamela Jordan
- 16:20 Is a good soundscape element a restorative environment factor in open office?**
Hui Ma, Libo Yang and Boya Yu
- 16:40 The relative importance of visual and sound design in the rehabilitation of a bridge connecting a highly populated area and a park**
Gemma Maria Echevarria Sanchez, Timothy van Renterghem, Kang Sun, Bert de Coensel and Dick Botteldooren
- 17:00 The effect of soundscape on the students' perception in the high school environment**
Sıla Çankaya and Semiha Yilmazer
- 17:20 Donostia-San Sebastian: The long experience improving the urban sound environment also a characteristic of the European Capital of Culture 2016**
Mónica Tomas, Alberto Bañuelos, Ainhoa Suso and Rubén Mateos
- 17:40 How to Conduct Natural Sounds with Planting Design in Chinese Classical Garden**
Xiaomei Yuan

22.3 Train (Noise and Vibration): Monitoring Railway Noise, Rail and Wheel Roughness

Tuesday, August 23 | Hall 15

Chairs: Stefan Lutzenberger, Ard Kuijpers

- 14:20 Abatement of rail noise - especially of locomotives - in Germany**
Percy Appel and René Weinandy
- 14:40 Monitoring Railway Noise, Rail and Wheel Roughness**
Markus Hecht and Hougui Zhang
- 15:40 Combining Train -"Weight in Motion" with Noise/vibration emission monitoring towards automated Acoustical Wheel Roughness estimation**
Ward Verhelst
- 16:00 Implementation of rail roughness control: how to deal with a non-ideal world**
Ard Kuijpers, Wout Schwanen and Chiel Roovers

16:20 A road test on acoustic wheel roughness measurement

Christoph Eichenlaub, Stefan Lutzenberger, Bert Stegemann and Christian Czolbe

22.4 Train (Noise and Vibration): Noise and Vibration Mitigation Measure

Tuesday, August 23 | Hall 15

Chairs: Nicholas Craven, Pascal Fodiman

16:40 Life cycle analysis of railway noise and vibration mitigation methodologies with respect to curve squeal noises

Sadudee Setsobhonkul and Sakdirat Kaewunruen

17:00 Study of Acoustic Grinding Method developed for Tokaido Shinkansen

Toshiyuki Aoki, Hitoshi Kanda, Mikihiro Kobayashi, Hidenori Shimada, Etsuyoshi Ishikawa, Shuuhei Suzuki and Nishimura Masaya

17:20 Study the Efficiency of Dynamic Vibration Absorbers in Minimizing Vibration Power Flow Radiated from a Double-deck Tunnel

Behshad Noori, Arnau Clot, Robert Arcos and Jordi Romeu

17:40 Attentive Windows - Noise-controlled Window Ventilation

Noemi Martin, Andreas Liebl, Lutz Weber and Zlatko Dubovski

23.3 Tyre/Road Noise Measurement Methods, Standards and Classification

Tuesday, August 23 | Hall 7

Chairs: Fabienne Anfosso Ledee, Paul Donavan

8:00 Improving the CPX Method by Specifying Reference Tyres and Including Corrections for Rubber Hardness and Temperature

Ulf Sandberg, Erik Bühlmann, Marco Conter, Piotr Mioduszewski and Reinhard Wehr

8:20 Temperature influence on tyre/road noise frequency spectra

Piotr Mioduszewski, Stanisław Taryma and Ryszard Woźniak

8:40 Validation of reference tyres and temperature correction for Close-ProXimity (CPX) method

Anneleen Bergiers and Johan Maeck

9:00 Influence of the tyre impedance on CPX level used to evaluate tyre/road noise

Stefan Schubert, Manuel Männel, Maximilian Ertsey and Carsten Hoefer

9:40 Relationship between Pass By results, CPX ones and roadside long-term measures: some considerations

Gaetano Licitra, Mauro Cerchiai, Luca Teti, Francesco Bianco, Marco Chetoni and Elena Ascari

10:00 Analysis and comparison of methods, CPX and SPB, for measuring noise properties of road surfaces

Rasmus Stahlfest Holck Skov

- 10:20 Uncertainty in the CPX method (ISO 11819-2/3) and its implications for pavement evaluation**
Gijsjan van Blokland and Rasmus Stahlfest Holck Skov
- 10:40 RONDA open frame CPX trailer - Certification in accordance with ISO/CD 11819-2**
Renzo Tonin, Dominic Chan and Geoffrey Huang
- 13:00 ROSANNE Project: New Procedure for Noise Characterisation of Road Surfaces in Europe**
Marco Conter, Reinhard Wehr, Claus Aichinger, Ulf Sandberg, Luc Goubert, Piotr Mioduszewski, Rasmus Stahlfest Holck Skov, Fabienne Anfosso Ledee and Phil Morgan
- 13:20 Compatibility of the ROSANNE Noise Characterization Procedure for Road Surfaces with CNOSSOS-EU Model**
Fabienne Anfosso Ledee, Guillaume Dutilleux and Marco Conter
- 13:40 Continuous Road Traffic Noise Monitoring and Aging of Asphalt Surfaces**
Guido Kneib, Daniel Belcher, Thomas Beckenbauer and Hans-Peter Beyeler
- 14:00 Development of a Sound Source Localization System for Road Traffic Noise Combine With Image Processing Technology**
Hiroyuki Houzu, Ichiro Sakamoto, Takahiro Nishi, Masao Ishihama and Katsumi Sawatari
- 14:20 Monitoring the environmental impact of individual vehicles in a traffic flow**
Truls Berge, Herold Olsen and Audun Solvang

24.3 Underwater Acoustics and Ship Noise: Vibroacoustics and Marine Applications

Tuesday, August 23 | Hall 15

Chair: Laurent Maxit

- 8:00 Underwater flow noise measurements with a towed body**
Jan Abshagen, Dennis Küter and Volkmar Nejedl
- 8:20 Development of Ship Noise Prediction System using Vibration and Acoustic Data Base for Shipbuilders' Engineers**
Hideyuki Shuri
- 8:40 Wall pressure models for non-equilibrium boundary layers**
Elena Ciappi
- 9:00 Flow Induced Structural Noise on a Sonar Dome of a Ship**
Francesca Magionesi
- 9:20 Vibroacoustic Modelling of Submerged Stiffened Cylindrical Shells with Internal Structures under Random Excitations.**
Valentin Meyer, Laurent Maxit, Ygaël Renou and Christian Audoly

- 10:00 Acoustic analyses on jet-bubble formation based on 3D numerical simulations**
Jingting Liu, Ning Chu, Shijie Qin and Dazhuan Wu
- 10:20 A new approach of acoustic characteristics analysis in jet- bubble noise**
Dazhuan Wu, Jingting Liu, Tiancheng Miao, Ning Chu, Shijie Qin and Peng Wu
- 10:40 Passive acoustic localization and imaging for jet bubble acoustics**
Ning Chu, Jingting Liu, Shijie Qin and Dazhuan Wu
- 13:00 Underwater acoustic target recognition algorithm based on EK- NN**
Jianhua Yang, Yang Zhang and Hong Hou
- 13:20 A new evidence classification algorithm for target recognition in underwater acoustic research**
Yang Zhang, Jianhua Yang, Hong Hou and Jing Shi
- 13:40 Learning robust features from underwater ship-radiated noise with mutual information group sparse DBN**
Sheng Shen, Honghui Yang, Zhen Han, Junjun Shi, Jinyu Xiong and Xiaoqiong Zhang
- 14:00 Modulation Recognition of Underwater Acoustic Communication Signals Based on Denoting & Deep Sparse Autoencoder**
Honghui Yang, Xiaohui Yao, Sheng Shen, Jinyu Xiong and Xiaoqiong Zhang

25.1 Urban Sound Planning II

Tuesday, August 23 | Hall C2

Chairs: Luigi Maffei, Maurice Yeung

- 8:20 Preventive Planning Helps Keeping Traffic Noise at Bay in Hong Kong**
Samson K. W. Cheng, Ken Lam, Edwin Chui, Maurice Yeung and David Yeung
- 8:40 Post Assessment on Environmental Management Policy about Urban Sound Qualified Zones Construction - A Case study on the effectiveness of environmental noise control technology and policy**
Jiping Zhang, Maurice Yeung, Lei Zhang, Liuqing Zheng, Xin Zhang, Li He, Wenbo Xiong and Shaodong Zhang
- 9:00 Towards an acoustic categorization of urban areas in Mexico City**
Fausto E. Rodriguez-Manzo, Elisa Garay-Vargas, Silvia Garcia-Martinez, Laura Lancon-Rivera and Dulce Ponce-Patron
- 9:20 Planning methodology for noise reduction in the contexts of sustainable and smart urban development**
Andrey Yordanov
- 10:00 An attempt on the globalization of the soundscape studies for the evaluation of the urban sound planning**
- Presentation cannot be held due to the Turkish travel prohibition -
Asli Ozcevik, Zerhan Yuksel Can and Massimiliano Masullo

- 10:20 The soundscape and the degree of match of a waterfront with the expectations placed on it. The cases study of Naples and Brighton**
Virginia Puyana Romero, Giuseppe Ciaburro and Luigi Maffei
- 10:40 Effects of an Absorbent Street Furniture and Fountain on Soundscape Quality in a Stockholm Pocket Park**
Östen Axelsson
- 13:00 A healthy side at the house**
Frits van den Berg
- 13:20 A preliminary investigation about the influence of soundscapes on people's behaviour in an open public space**
Federica Lepore, Eirini Kostara-Konstantinou, Francesco Aletta, Arianna Astolfi and Jian Kang
- 13:40 The influence of vegetation and shape-related features in making parks more noise resistant.**
Efsthios Margaritis, Karlo Filipan, Jian Kang and Dick Botteldooren
- 14:00 Mapping the Integrated Impact of Noise and Visual Intrusion of Motorways**
Like Jiang and Jian Kang

26.1 Vehicle Acoustics (Car): Exterior Noise

Tuesday, August 23 | Hall 13/14

Chairs: Wolfgang Foken, Jörg Bienert

- 15:40 Comparison of Pass-By Noise from Real Track and Simulated Measurement at the Roller Test Bench**
Michael Krämer, Peter Brandstätt and Alex Ickinger
- 16:00 Drastic exterior noise reduction through optimization of acoustic shielding package**
Michael Thivant, Olivier Minck, Benjamin Betgen and Romain Leneveu
- 16:20 Off-peak low noise heavy-duty vehicles, façade insulation and indoor noise disturbance**
Patrik Höstmad, Jens Forssén, Penny Bergman and Krister Fredriksson
- 16:40 An integrated R&D approach for exterior noise development applying contribution analysis and response modification analysis**
Dejan Arsic, Florian Bock and Stefan Becker
- 17:00 A Study on the Acoustic Cavity Model of Vehicle Interior Cabins for Accuracy Enhancement Based on Modal and FRF Correlation**
Seungchan Choi, Kwanghyeon Hwang, Sangzoo Lee, Jaehong Jeon, Bert Van Genechten and Eike Brechlin
- 17:20 Acoustic Simulation and Validation to Realize Sound Quality Refinement of a Motorcycle**
Ming-Hung Lu and Ming Une Jen

17:40 A survey on the variability of dynamic stiffness data of identical vehicles

Ali Abolfathi, Dan O'Boy, Stephen Walsh, Amy Dowsett and Steve Fisher

26.2 Vehicle Acoustics (Car): Interior Noise

Tuesday, August 23 | Hall 13/14

Chairs: Wolfgang Foken, Jörg Bienert

8:00 Enable Vehicle Interior Noise Measurements on Public Roads by Statistic Analysis

Jörg Bienert

8:20 Development of a Test Apparatus That Consistently Generates Squeak to Rate Squeak Propensity of a Pair of Materials

Gil Jun Lee and Jay Kim

8:40 Analysis of a New Squeak Test Apparatus developed for Objective Rating of Squeak Propensity and building a Database to Minimize Squeak Problems in Automotive Engineering

Gil Jun Lee and Jay Kim

9:00 Influence of absorption materials on the sound quality in a car

Kunhee Lee, Jindong Kim, Taejin Shin, Sangkwon Lee and Keunyoung Kim

9:20 Generating consistent exterior vehicle sound from interior sound

Matthias Frank, Alois Sontacchi, Robert Höldrich, Markus Resch and Stephan Brandl

9:40 Experimental Validation of a Suspension Rig for Analyzing Road- Induced Noise

Dongwoo Min, Jun Gu Kim, David P. Song, Yunchang Lee, Yeon June Kang and Kang-Duck Ih

10:00 Prediction of the Interior Noise Level for Automotive Applications Based on Time-Domain Methods

Alexander Kabat Vel Job, M Hartmann and J Sesterhenn

10:20 Investigation of an auditory thresholds for early reflections in car-cabins

Mateusz Matuszewski, Paolo Chiariotti, Paolo Castellini, Milena Martarelli and Karl Janssens

10:40 Measurement in situ of the absorption coefficient of automobile interior materials based on the pseudo- impedance tube method

Wei Li, Yansong He, Zhongming Xu and Zhifei Zhang

26.4 Vehicle Acoustics (Car): Perception

Tuesday, August 23 | Hall 13/14

Chairs: Wolfgang Foken, Jörg Bienert

- 13:00 Designing a Metric for the Customer Relevance of Synchronous Turbocharger Whistling in the Driver's Cabin**
Lukas Bernhauser, Lorenz Steinwender and Hans Irschik
- 13:20 Modified method to quantify diesel noise using masking effects**
Dong-Un Yun, Sangkwon Lee and Insoo Jung
- 13:40 Development of iPhone Based Binaural Recorder for Sound Quality Analysis**
Qunli Wu
- 14:00 Perceptual Test on Annoyance Threshold Linked to Vibrations and Sounds of a Modified Car Engine**
Alix Carbajo, Etienne Parizet, Vincent Roussarie and Emmanuelle Diaz
- 14:20 Separation of Engine and Tyre Noise using Operational Measurement Only**
Andreas Schuhmacher, Yoshihiro Shirahashi, Yukihiro Fujii and Yumiko Sakamoto
- 14:40 Interior and Motorbay Sound Quality Evaluation of Full Electric and Hybrid-Electric Vehicles based on Psychoacoustics**
Daniel Johannes Swart and A Bekker

27.03 Vibroacoustics: General Structural Acoustics

Tuesday, August 23 | Hall E

Chair: Li Cheng

- 9:40 A scaling method for vibrating structures using global sensitivity analysis**
Christian Adams, Joachim Bös and Tobias Melz
- 10:00 Similitudes for the Structural Response and Radiated Power from Plates**
Olivier Robin, Sergio De Rosa and Alain Berry
- 10:20 Investigation of Bandgap Structure in Coupled Acoustic- Mechanical System**
Junghwan Kook and Jakob S. Jensen
- 10:40 On the use of a variational technique based on integral equations for plane acoustic and vibro-acoustic problems**
Jonas Brunskog and Antoine Richard
- 13:00 FEA based sound power estimation with non-equidistant frequency steps**
Matthias Klaerner, Mario Wuehrl, Lothar Kroll and Steffen Marburg
- 13:20 The Effect of The Damping Materials on Heavy-weight Floor Impact Noise in Box Frame-type Structures Building**
Yeong Jeong and Yoonjoon Lee

13:40 A tunable, light-weight and compact silencer

Zhenbo Lu, Xiang Yu, Fangsen Cui, Li Cheng, Yongdong Cui and Boo Cheong Khoo

14:00 Study on Stability Analysis of Acoustic Resonance in Heat Exchanger Tube Bundles

Eiichi Nishida and Hiromitsu Hamakawa

14:20 Calculation and Analysis of Natural Vibration Characteristics of Serpentine Belt Drive System Based on Beam Coupling Model

Yue Pan, Xiandong Liu, Yingchun Shan and Tian He

14:40 Acoustic Levitation of Hollow Spheres with Openings

Mehmet Hakan Kandemir and Mehmet Caliskan

27.07 Vibroacoustics: Mid and High Frequency Numerical Methods in Vibroacoustics II

Tuesday, August 23 | Hall E

Chairs: Oriol Guasch, Laurent Maxit

8:00 A Study on Structural Optimization of SEA Subsystems using Finite Element Model

Kuroda Katsuhiko

8:20 Shape Optimization in Aircraft Sidewall Panels for Low-Frequency Noise Reduction using Hybrid Method Calculations in Wavenumber Space

Uwe Mueller

8:40 Noise Prediction of Large Ship 6700PCTC Using EFEA-SEA Hybrid Technique

Xinwei Zhang, Shawn Wang and Jinxiang Pang

9:00 Prediction of Acoustic Natural Frequencies for two dimensional simplified aircraft cabin by Impedance Mobility and Compact Matrix(IMCM) approach

Veerabhadra Reddy and B Venkatesham

27.08 Vibroacoustics: Stochastic Vibroacoustic Problems: Method and Applications

Tuesday, August 23 | Hall 1

Chair: Kheirollah Sepahvand

16:20 Global Sensitivity Analysis of Elastomer Joints Between Substructures Using Random Balance Design Method

Dooho Lee and Young-Woo Won

16:40 Towards the understanding of hip squeak in total hip arthroplasty using analytical contact models with uncertainty

Sebastian Oberst, Zhi Zhang, Graeme Campbell, Michael Morlock, Joseph C.S. Lai and Norbert Hoffmann

- 17:00 Uncertainty quantification and reduced computational model for vibroacoustic systems coupled with a poroelastic medium**
Corentin Coguenanff, Christophe Desceliers, Catherine Guigou-Carter and Philippe Jean
- 17:20 Finite Element Study of the Vibroacoustic Response of a Structure, Excited by a Turbulent Boundary Layer**
Adrien Clement, Cédric Leblond, Christian Audoly and Jacques-André Astolfi
- 17:40 Acoustic transmission loss of fiber composite structures with random damping**
Kheirollah Sepahvand

27.10 Vibroacoustics: Vibroacoustics of Composite Panels

Tuesday, August 23 | Hall E

Chair: Stephen Hambric

- 15:40 Tutorial on the Vibroacoustics of Composite Sandwich Panels**
Stephen Hambric
- 16:00 Non-destructive testing due to analysis of natural frequencies of multilayer fibre-reinforced composites**
Christian A. Geweth, Ferina Saati Khosroshahi, Kheirollah Sepahvand, Christoph Kerkeling and Steffen Marburg
- 16:20 Modal Analysis of Membrane String Instruments: Finite Element Modeling and Experimental Investigation**
Ferina Saati Khosroshahi, Christian A. Geweth, Kheirollah Sepahvand and Steffen Marburg
- 16:40 Identification of Sound radiation in a GFRP plate**
Myoung-Woon Kim and Sangkwon Lee
- 17:00 Free vibration analysis of the moderately thick laminated composite rectangular plate with multi-points supported boundary conditions**
Hong Zhang, Dongyan Shi and Qingshan Wang

29.5 Noise & Health: Effects of Interventions or Changes in Environmental Noise Levels on Human Response

Tuesday, August 23 | Hall B1

Chairs: Alan Lex Brown, Irene van Kamp

- 13:00 A systematic review of evidence of the effect of transport noise interventions on human health**
Irene van Kamp and Alan Lex Brown
- 13:20 Systematic Review of Evidence of the Effect of Transport Noise Interventions on Human Health: Implications for Future Studies and Management**
Alan Lex Brown and Irene van Kamp

13:40 Noise respite at Frankfurt Airport

Dirk Schreckenberger, Sarah Benz, Konrad Götz and Ian H. Flindell

14:00 The effect of historic noise policy interventions in England

Stuart Michael Dryden and Rupert Thornely-Taylor

14:20 Effects of Road Traffic Noise and the Benefit of a Quiet Side in Newly Built Houses

Anita Gidlöf-Gunnarsson, Lars-Erik Warg and Mikael Ögren

14:40 Noise Annoyance from Urban Roads and Motorways

Jakob Fryd and Torben Holm Pedersen

29.6 Noise & Health: Noise Indicators and Exposure Assessment for Health Impact Studies

Tuesday, August 23 | Hall B2

Chairs: Dick Botteldooren, Peter Lercher

15:40 Comparison of noise indicators in an urban context

Arnaud Can, Pierre Aumond, Sven Michel, Bert de Coensel, Carlos Ribeiro, Dick Botteldooren and Catherine Lavandier

16:00 END noise mapping for a sufficiently accurate people exposure estimation in epidemiological studies

Gaetano Licitra, Diego Palazzuoli and Elena Ascari

16:20 Noise in urban areas: How does the definition of neighborhood impact exposure assessment?

Frederic Mauny, Quentin Tenaillieu, Sophie Pujol, Anne-Laure Parmentier, Helene Houot and Nadine Bernard

16:40 Parameter study on IR, a metric reflecting short-term temporal variations of transportation noise exposure

Jean Marc Wunderli, Reto Pieren, Danielle Vienneau, Christian Cajochen, Nicole Probst-Hensch, Martin Rösli and Mark Brink

17:00 Do short-term temporal variations of noise exposure explain variance of noise annoyance?

Mark Brink, Reto Pieren, Maria Foraster, Danielle Vienneau, Ikenna Eze, Emmanuel Schaffner, Harris Héritier, Christian Cajochen, Nicole Probst-Hensch, Martin Rösli and Jean Marc Wunderli

17:20 Soundmapping approaches in a small suburban study area

Michael Cik and Manuel Lienhart

17:40 Spectral Noise Measurements supply Instantaneous Traffic Information for Multidisciplinary Mobility and Traffic Related Projects.

Luc Dekoninck, Dick Botteldooren, Bert de Coensel and Luc Int Panis

30 Wind Turbine Noise: Measurement, Modeling and Simulation I

Tuesday, August 23 | Pflanzen und Blumen

Chairs: Johannes Weber, Manfred Kaltenbacher

- 15:40 ISO9613-2 as a guideline for noise mapping of wind turbines, modelling vs measurements. CNOSSOS-EU vs ISO9613-2 for noise mapping of wind turbines**
Arkadiusz Rybka
- 16:00 Investigation, prediction and evaluation of wind turbine noise in Japan**
Hitomi Kimura, Yoshinori Momose, Hiroya Deguchi and Mimi Nameki
- 16:20 A Review of research into the human response to amplitude modulated wind turbine noise and development of a planning control method**
Richard Perkins, Michael Lotinga, Bernard Berry, Colin Grimwood and Stephen Stansfeld
- 16:40 Assessment of wind turbine noise and residual noise in immission areas around wind power plants**
Fukushima Akinori, Hideki Tachibana and Mimi Nameki
- 17:00 Low-frequency noise incl. infrasound from wind turbines and other sources**
Lorenz Herrmann, Ulrich Ratzel, Otto Bayer, Klaus-Georg Krapf, Martin Hoffmann, Janosch Blaul and Clemens Mehnert
- 17:20 Issues on the evaluation of low frequency noise emitted by wind turbines**
Martino Marini, Roberto Baccoli, Costantino Carlo Mastino, Antonino Di Bella and Massimiliano Masullo
- 17:40 Assessment of Noise and Infrasonic Noise at Workplaces in Wind Turbines Vicinity**
Dariusz Pleban, Jan Radosz and Bozena Smagowska

Sessions on Wednesday, August 24

Plenary Lecture on Wednesday

Wednesday, August 24 | Hall 1

15:00 Tuning the Brain for Sound: Solvable Problems in Auditory Neuroscience
Marc Schönwiesner

02.1 Advanced Measurement Techniques: Advanced Measurement Methods for Aeroacoustics

Wednesday, August 24 | Hall C1

Chair: Lars Enghardt

- 8:00 Phased Array Aeroacoustic Measurements of an Unmanned Aerial Vehicle**
Alessandro Di Marco, Lorenzo Burghignoli, Francesco Centracchio, Roberto Camussi, Thomas Ahlefeldt, Arne Henning and Jürg Müller
- 8:20 Mapping of contributions from car-exterior aerodynamic sources to an in-cabin reference signal using Clean-SC**
Jørgen Hald, Hiroshi Kuroda, Takafumi Makihara and Yutaka Ishii
- 8:40 Cross-spectral matrix diagonal reconstruction**
Jørgen Hald
- 9:00 Acoustic Particle Velocity Investigations in Aeroacoustics Synchronizing PIV and Microphone Measurements**
Lars Siegel, Klaus Ehrenfried, Arne Henning, Gerrit Lauenroth and Claus Wagner
- 9:20 A new measurement technique for duct characterization**
Jean Christophe le Roux, Jean-Pierre Dalmont and Eric Portier
- 9:40 Detection of the dominant acoustic modes emitted by turbomachinery using compressed sensing**
Jakob Hurst, Maximilian Behn, Ulf Tapken and Lars Enghardt

02.2 Advanced Measurement Techniques: Measurement Methods for Noise and Vibration Source Identification

Wednesday, August 24 | Hall C1

Chairs: Goran Pavic, Jeong-Guon Ih, Patrik Höstmad, Andrew Elliott

- 10:20 Acoustic Characterization of Leaks in a Pipeline**
Jeong-Guon Ih and Elmira Yadollahi
- 10:40 A two-stage noise source identification technique using a far-field random array**
Mingsian R. Bai, You Siang Chen and Yi-Yang Lo

- 11:00 Designing an array for performing Near-field Acoustic Holography with a small number of p-u probes**
Daniel Fernandez Comesana, Junjie Wen and Efren Fernandez-Grande
- 11:20 Construction, calibration, evaluation of spherical microphone array and its application for beamforming**
Ana Djordjevic, Marko Licanin and Dejan Ćirić
- 11:40 The Modified Green's Function Used for the Phase Conjugation Method to Reconstruct the Sound Source**
Song Liu, Dongyang Dou and Sheng Li
- 13:00 OTPA method weakness in real case applications**
Pere Vicens Rodríguez, Joan Sapena and Francesc Xavier Magrans
- 13:20 In-situ Characterisation of Ducted Sources of Airborne Sound**
Joshua Meggitt, Andrew Elliott, Andy Moorhouse, George Banwell, H Hopper and J Lamb
- 13:40 Measurement of the spatial sound propagation with a low-cost sound intensity scanner**
Tim Klaus, Matthias Schmidt and Sven Herold
- 14:00 Got the Power? - A New Method for a Quick Determination of the Sound Power Using Free-Form Measuring Surfaces**
Albert Albers, Matthias Behrendt, David Landes, Rolf Hettel and Jan Fischer
- 14:20 Basic Experimental Results of Double Nearfield Acoustic Holography Method**
Masao Nagamatsu
- 14:40 Evaluation methods of no-shoes-floor deformation properties considering comfortableness of human behavior**
Shintaroh Fukuda and Yutaka Yokoyama

03.2 Aeroacoustics: Airfoil Modifications for Low Noise

Wednesday, August 24 | Hall A1

Chairs: Thomas Geyer, Tze Pei Chong

- 10:20 Theoretical Model of Scattering from Serrated Flat Plate**
Xun Huang
- 10:40 Statistical-Empirical Modelling of Aerofoil Noise and Performance subjected to Leading Edge Serrations**
Till Biedermann, Tze Pei Chong and Frank Kameier
- 11:00 Nature-inspired aerofoil modification for leading edge interaction noise reductions**
Auris Juknevičius and Tze Pei Chong

- 11:20 Airfoil Turbulence-Impingement Noise Reduction by Porosity or Wavy Leading-Edge Cut: Experimental Investigations**
Michel Roger and Stéphane Moreau
- 11:40 Noise Control on Flap Side Edge**
Johann Reichenberger
- 13:20 Adjoint-based Noise minimization via Porous Material**
Beckett Yuxiang Zhou and Nicolas Gauger
- 13:40 Investigation of axial fan tip noise mechanisms by means of CAA and beam-forming technique**
Marc Schneider and Andreas Lucius
- 14:00 Sound Generation by an In-Flight Thick Airfoil with a Cavity**
Garret C. Y. Lam and Randolph C. K. Leung
- 14:20 Low Mach number flow induced noise prediction of a wall- mounted airfoil using a hybrid RANS-BEM technique**
Paul Croaker, Danielle Moreau, Mahmoud Karimi and Nicole Kessissoglou
- 14:40 Noise Generated by a Leading Edge in Anisotropic Turbulence**
Thomas Geyer, Ennes Sarraji and Marcus Hobracht

05.3 Aircraft Interior Noise: Simulation II

Wednesday, August 24 | Hall A2

Chairs: Alexander Peiffer, Manuel Etchessahar, Martin Wandel

- 8:00 Comparison of Vibro-acoustic Performance Metrics in the Design and Optimization of Stiffened Composite Fuselages**
Gökhan Serhat and Ipek Basdogan
- 8:20 Multiphysical electro-vibroacoustics approach for the simulation of transformer noise taking into account the magnetostrictive effects**
Jean-Baptiste Dupont, Romain Leneveu, Henri Saucy, Rémi Louviot and Didier Lavee
- 8:40 Sound Transmission Loss predictions of aircraft panels: an update on recent technology evolutions**
Koen de Langhe, Alexander Peiffer, Clemens Moser and Robin Boeykens
- 9:00 Interior noise estimation of new aircraft concepts in the early design phase**
Lionel Zoghaib, Julien Couvrat and Alexander Peiffer
- 9:20 A Projection and Condensation Method for Aerospace Noise and Vibration Engineering**
Mats Gustavsson, Magdi Omais, Henning Scheel and Martin Wandel
- 9:40 A new generalized approach to Statistical Energy Analysis (SEA)**
Phil Shorter, Vincent Cotoni, Julien Legault, Stephane Caro and Robin Langley

07.2 Building Acoustics: Acoustics of Indoor Spaces III

Wednesday, August 24 | Hall D

Chairs: Jeong Cheol-Ho, Pyoung Jik Lee, Erling Nilsson, Gerd Marbjerg

- 11:20 Subjective Evaluation of Restaurant Acoustics in a Virtual Sound Environment**
Nicolaj Oestergaard Nielsen, Marton Marschall, Sébastien Santurette and Cheol-Ho Jeong
- 11:40 The Influence of Crowd Density on Evaluation of Soundscape in Typical Chinese Restaurant**
Shilun Zhang, Qi Meng and Jian Kang
- 13:00 Acoustics for Amplified Music and a New, Variable Acoustics Technology that includes Low Frequencies**
Niels Adelman-Larsen
- 13:20 Characterizing Acoustical Quietness in Goa's Reverberant Se' Cathedral**
Menino A. S. M. P. Tavares
- 13:40 Shelter System Multiple Noise Analysis and Design in order to meet MIL-STD-1474 Noise Limits Spec**
Sockkyu Lee, Ingi Baek, Sanghyun Kim, Jeung Lee and Jiho Choi
- 14:00 Study of Acoustic Performance Improvement on Gelora Bung Karno Stadium**
Hizkia Natanael, Irham Tanjung, Iwan Prasetyo and Joko Sarwono
- 14:20 Experimental and Numerical Comparison of Absorption Optimization in Small Rooms**
Jakob Nygård Wincentz, Julian Martinez-Villalba and Cheol-Ho Jeong
- 14:40 Investigation of the Acoustical Influence of Lighting Equipment in Performing Spaces**
Hocheul Park and Jin Yong Jeon

07.5 Building Acoustics: Measurement Methods in Building Acoustics II

Wednesday, August 24 | Hall D

Chairs: Stefan Schoenwald, Patricio Fausti

- 8:20 Estimation of the precision of the apparent dynamic stiffness measurement described in the standard EN 29052-1**
Charlotte Crispin, Christian Mertens and Bart Ingelaere
- 8:40 Suggested enhancements for industrial silencers characterization at low frequencies**
Jean Christophe le Roux, François Fohr and Eric Portier
- 9:00 Acoustic testing of office workstations and booths**
Valtteri Hongisto, Jukka Keränen, Petra Karoliina Virjonen and Jarkko Hakala

- 9:20 Justification of Standardized Impact Sound Pressure Levels in Rating of Impact Sound Insulation of Floors**
Jesse Lietzén, Mikko Kylliäinen and Joose Takala
- 9:40 Laboratory Study on Flanking Sound Transmission in Cold-Formed Steel-Framed Constructions**
Christoph Höller and Berndt Zeitler
- 10:20 Uncertainty of Flanking Transmission of Metal Stud Walls by Airborne Measurement with Shielding**
Jochen Seidel
- 10:40 Applications of the in-situ Airborne Transfer Path Analysis (TPA) technique in the diagnosis of sound transmission paths of a building element**
Nikhilesh Patil, Andrew Elliott and Andy Moorhouse
- 11:00 Construction of Two Anechoic Rooms with a New Experimental Floor Structure**
Shuichi Sakamoto, Fumitaka Saito, Yôiti Suzuki, Makoto Kakinuma, Hiroshi Ohya-ma, Hiroyoshi Matsuo and Kazuhiro Takashima

07.6 Building Acoustics: Structure-borne and Impact Noise in Buildings II

Wednesday, August 24 | Hall F

Chairs: Barry M. Gibbs, Berndt Zeitler, Atsuo Hiramitsu

- 8:00 Impact sound insulation: Transient power input from the rubber ball on locally reacting mass spring systems**
Susumu Hirakawa, Carl Hopkins and Pyoung Jik Lee
- 8:20 Using a Shear Connector to Stiffen a Floor Structure to Reduce the Heavy-weight Floor-Impact Noise**
Hye Ran Kim, Young Soo Chun, Bum Sik Lee and Sang Mo Kim
- 8:40 Energy distribution and sound radiation caused by the segmentation of a glulam timber floor**
Hans-Martin Tröbs, Stefan Schoenwald and Armin Zemp
- 9:00 Detecting Sound Transmission Path of Floor Impact Noise Using Acoustic Visualization in a Multi-Story Building**
Hansol Lim, Byung Kwon Lee and Jin Yong Jeon
- 9:20 The objective and subjective evaluation of Heavy-weight Floor Impact Noise in Box Frame-type Structures**
Lee Yoon Joon and Yeong Jeong
- 9:40 Earthquake Response Analysis of Ankara High Speed Train Station by finite element modeling**
Burak Nebil Barutçu, Salih Alan and Mehmet Caliskan

10:00 Flanking transmission at impact sound excitation - Calculation according to DIN 4109 and prEN ISO 12354-2 -

Andreas Rabold, Camille Châteaueux-Hellwig and Joachim Hessinger

08 Dynamap

Wednesday, August 24 | Hall A2

Chairs: Patrizia Bellucci, Giovanni Zambon, Laura Peruzzi

10:20 LIFE DYNAMAP: an overview of the project after two years working

Patrizia Bellucci, Laura Peruzzi and Giovanni Zambon

10:40 Milan dynamic noise mapping from few monitoring stations: statistical analysis on road network

Giovanni Zambon, Roberto Benocci and Alessandro Bisceglie

11:00 Identification of failure markers in noise measurement low cost devices

Luca Nencini, Alessandro Bisceglie, Patrizia Bellucci and Laura Peruzzi

11:20 Analysis and automatic detection of anomalous noise events in real recordings of road traffic noise for the LIFE DYNAMAP project

Joan Claudi Socoró, Xavier Albiol, Xavier Sevilano and Francesc Alías

11:40 Development of a GIS based software for real time noise maps update

Andrea Cerniglia

13:00 Basic noise maps calculation in Milan pilot area

Simone Radaelli and Paola Coppi

13:20 Implementing the Dynamap system in the suburban area of Rome

Patrizia Bellucci, Laura Peruzzi and Francesca Romana Cruciani

13:40 Smart Noise Monitoring Leeuwarden F16 Air Force Base in The Netherlands

Dirkjan Krijnders, Maarten Reinders, Nico Faber and Eize Drenth

14:00 Source-selective noise monitoring (ReSoNo) pilot project in Birmingham city

Gábor Geréb and Fülöp Augusztinovicz

10 Green Noise Control Measures

Wednesday, August 24 | Hall 8

Chairs: Maarten Hornikx, Hyung Suk Jang

9:00 Impedance Deduction for Vegetated Roof Surfaces: Multiple Geometry Strategy

Chang Liu and Maarten Hornikx

9:20 Noise scattering and shielding by roadside trees: results from a scale model

Hyung Suk Jang and Jin Yong Jeon

- 9:40 A low-height acoustic screen in a setting with an urban road: measured and predicted insertion loss**
Jens Forssén, Laura Estévez Mauriz, Clas Torehammar and Philippe Jean
- 10:00 Bamboo plants as a noise barrier to reduce road traffic noise**
Hans J.A. van Leeuwen

13.1 Machinery Noise: Machinery Noise and Quiet Machine Design II

Wednesday, August 24 | Hall 1

Chairs: Joachim Bös, E. Carletti

- 8:00 A Numerical and Experimental Study on the Noise Absorption Behavior of Functionally Graded Materials Considering Geometrical and Material Influences**
Peter Schrader, Fabian Duvigneau, Ryan Orszulik, Hermann Rottengruber and Ulrich Gabbert
- 8:20 Size and Wall Thickness Effect on Evaluation for Acoustically Induced Vibration (AIV)**
Hisao Izuchi, Itsuro Hayashi, Yoshiaki Sakamoto and Masato Nishiguchi
- 8:40 Proposal of Electromagnetic Noise-generating Mechanism on Carrier Harmonics**
Yoshitake Kamijo, Shun Taniguchi and Makoto Matsushita
- 9:00 A model noise declaration to satisfy the European Machinery and Outdoor Noise Directives**
Paul Brereton
- 9:20 The ODELIA Study on Noise limits for Outdoor Machinery**
Michael Dittrich, Eleonora Carletti and Georg Spellerberg
- 9:40 Can Sander Noise Emission Declarations Be Used To Manage Workplace Noise Risk?**
Jacqueline Anne Patel
- 10:00 The prediction of occupational noise caused by machinery**
Wolfgang Probst
- 10:20 Flow-Induced Noise in Refrigerators**
Bircan Demirtekin and A. Saide Sarigül

13.2 Machinery Noise: Noise and Vibration Source Identification and Fault Diagnosis

Wednesday, August 24 | Hall 1
Chairs: Joachim Bös, E. Carletti

11:00 Pitting Detection in a Worm Gearbox Using Artificial Neural Networks

- *Presentation cannot be held due to the Turkish travel prohibition* -
Rafet Can Ümütlü, Berkan Hızarcı, Hasan Ozturk and Zeki Kırıl

11:20 Smart Condition Monitoring of Worm Gearboxes

- *Presentation cannot be held due to the Turkish travel prohibition* -
Berkan Hızarcı, Rafet Can Ümütlü, Zeki Kırıl and Hasan Ozturk

11:40 Influence of Pitting on Total Transmission Error of a Planetary Gear Stage

Uwe Weinberger, Maximilian Lukas Fromberger, Michael Otto and Karsten Stahl

13:00 Proposal of the evaluation function for selection of optimal measurement location in inverse-numerical acoustic analysis

Masahiro Akei, Nobutaka Tsujiuchi, Akihito Ito, Takayuki Yamauchi and Kubota Daisuke

13:20 Condition Monitoring by Position Encoders

Maximilian Lukas Fromberger, Uwe Weinberger, Bernhard Kohn, Thanak Utakapan, Michael Otto and Karsten Stahl

13:40 Vibration-based localisation of structural deterioration in frame-like civil engineering structures

Martin Dalgaard Ulriksen and Lars Damkilde

14:00 Design simulation and noise signal analysis of circuit breaker with selective over current protection

Xiaodong Guo and Shaoze Yan

14:20 Dynamic analysis of submerged transformer winding using laser Doppler vibrometer

Michał Kozupa, Bartłomiej Kasprzyk and Grzegorz Kmita

14.4 Materials: Sustainable Acoustic Materials

Wednesday, August 24 | Pflanzen und Blumen
Chair: Francesco Asdrubali

10:40 In-situ evaluation of the acoustic efficiency of a green wall in urban areas

David Lunain, David Ecotiere and Benoît Gauvreau

11:00 Experimental Characterization of Foliage and Substrate Samples by the Three-Microphone Two-Load Method

Emmanuel Attal, Nicolas Côté, Gérard Haw, Geoffrey Pot, Clément Vasseur, Takafumi Shimizu, Christian Granger, Charles Croëne and Bertrand Dubus

11:20 Acoustic Properties of Perforated Plates with Bias Flows

Katsuji Akamatsu and Michihisa Tsutahara

16 Numerical Acoustics III

Wednesday, August 24 | Hall A1

Chairs: Philippe Jean, Timothy van Renterghem

8:20 Acoustic Time-frequency Complex Prediction Method of Ship and Ocean Structure

Fu-Zhen Pang, Zhe Shen, Chuang Wu and Haichao Li

8:40 Research on ice-breaking induced vibration characteristic of a Ship

Fu-Zhen Pang, Zhe Shen, Haichao Li and Yan-Zhuo Xue

9:00 Underwater Noise Radiation Optimization of a Scientific Investigation Ship

Fu-Zhen Pang, Chuang Wu, Shuo Li and Xu-Hong Miao

9:20 SEA Based Underwater Noise Radiation Prediction Method for Ship's Conception Design

Xue-Ren Wang, Chuang Wu, Xu-Hong Miao and Kai-Fu Ye

9:40 Prediction of Light Rail Vehicle Noise in running condition using SEA

Sebastian Preis and Gerard Borello

18.3 Psychoacoustics: Evaluation of Steady State and Unsteady Sound

Wednesday, August 24 | Hall B1

Chairs: André Fiebig, Jesko Verhey, Mariko Hamamura

11:00 Gender differences in optimal listening levels and loudness perception

Mariko Hamamura, Manami Aono and Shin-Ichiro Iwamiya

11:20 Temporal perceptual weights in loudness: The role of sound duration

Daniel Oberfeld-Twistel

11:40 Loudness Processing of Time-Varying Sounds: Recent advances in psychophysics and challenges for future research

Emmanuel Ponsot, Patrick Susini and Sabine Meunier

13:00 Pitch: The Perceptual Ends of the Periodicity; but Of What Periodicity?

Minoru Tsuzaki, Sawa Hanada, Junko Sonoda, Satomi Tanaka and Toshio Irino

13:20 Auditory between-channel processing by measuring across-ear temporal gap detection

Kazuhito Ito, Akihide Takamura and Shuji Mori

13:40 Dichotic continuity illusion for steady-state versus frequency-gliding sounds

Tsuyoshi Kuroda, Simon Grondin and Makoto Miyazaki

- 14:00 Human strategies to provide overall assessments of unsteady sound episodes**
André Fiebig
- 14:20 Communicating information in noise: speaker's and listener's perspective**
Annelies Bockstael, Laurie Samyn, Paul Corthals and Dick Botteldooren
- 14:40 Design of Sporty SQI using Semantic Differential and Verification of its Effectiveness**
Gahee Kwon, Jae Hyuk Park, Han Sol Park, Sang Il Lee, Yeon Soo Kim and Yeon June Kang

19 Sound Power

Wednesday, August 24 | Hall 8

Chairs: Volker Wittstock, Patrick Cellard

- 10:20 Introducing the concept of traceability into sound power measurements**
Volker Wittstock and Claudio Guglielmone
- 10:40 Primary Sound Power Sources for the Realisation of the Unit Watt in Airborne Sound**
Cafer Kirbas, Håkan Andersson, Claudio Guglielmone, Volker Wittstock and Eyup Bilgic
- 11:00 Numerical Modelling of the Primary Source in a Hemi-Anechoic Room**
Renzo Arina and Katharina Völkel
- 11:20 Automatic sound field sampling mechanisms to disseminate the unit watt in airborne sound**
Patrick Cellard, Håkan Andersson, Spyros Brezas and Volker Wittstock
- 11:40 Dissemination of the unit Watt in airborne sound: aerodynamic reference sound sources as transfer standards**
Spyros Brezas, Patrick Cellard, Håkan Andersson, Claudio Guglielmone and Cafer Kirbas
- 13:00 Investigations on the Suitability of an electroacoustic Sound Source as secondary Sound Power Standard**
Heinrich Bietz, Volker Wittstock and Spyros Brezas
- 13:20 Traceable sound power measurements in essentially diffuse or free fields**
Håkan Andersson and Volker Wittstock
- 13:40 Reasons justifying a revision of the existing sound power measurement standards**
Ilka Arendt and Patrick Kurtz
- 14:00 Influence of Directivity and Spectral Shape on the Measured Sound Power Level**
Katharina Voelkel and Volker Wittstock

14:20 Main achievements of the EMRP sound power project and future prospects

Claudio Guglielmo, Volker Wittstock, Cafer Kirbas and Håkan Andersson

14:40 Free-Field Pressure-Based Sound Power Measurement Procedure with Low Spatial-Sampling- and Near-Field-Induced Uncertainty

Hannes Pomberger, Franz Zotter, Alois Sontacchi, Manuel Brandner, Markus Resch, Stephan Brandl and Robert Höldrich

21.5 Soundscape: Soundscape, Music and Ecology

Wednesday, August 24 | Hall B1

Chairs: Jochen Steffens, Catherine Guastavino

8:20 Music influences the perception of our acoustic and visual environment

Jochen Steffens, Daniel Steele and Catherine Guastavino

8:40 Sharing Music in Public Spaces: Social Insights from the Musikiosk Project (Montreal, CA)

Edda Bild, Daniel Steele, Cynthia Tarlao, Catherine Guastavino and Matt Coler

9:00 Evaluation of an urban soundscape intervention with music: quantitative results from questionnaires

Daniel Steele, Cynthia Tarlao, Edda Bild and Catherine Guastavino

9:20 Comparing soundscape evaluations in French and English across three studies in Montreal

Cynthia Tarlao, Daniel Steele, Pauline Fernandez and Catherine Guastavino

9:40 Pleasantness evaluation of combined environmental sounds

Sabrina Skoda, André Fiebig, Brigitte Schulte-Fortkamp and Jörg Becker-Schweitzer

10:00 Soundscape Perception Analysis Using Soundscape Simulator

Anugrah Sabdono Sudarsono, Giu Lam and William Davies

10:20 Facing the Music: Helping Classical Musicians comply with the Control of Noise at Work Regulations

Stephen Dance

22.2 Train (Noise and Vibration): Rolling, Aerodynamic and Impact Noise

Wednesday, August 24 | Hall 7

Chairs: Fabien Letourneaux, Christoph Eichenlaub

13:00 Improving rolling noise predictions for new track designs

Benjamin Betgen and Nicolas Vincent

13:20 Comparison of Two Different Models Describing Railway Noise Generation and Radiation

Anders Nordborg and Hyo-In Koh

- 13:40 An Arnoldi reduction applied to wave propagation to model railway track vibrations**
Raphael Cettour, Andrea Barbarulo, Fabien Letourneaux and Guillaume Puel
- 14:00 Amplitude and frequency characteristics of acoustic field influenced by tram**
Bartosz Czechyra, Tomasz Nowakowski and Pawel Roman Komorski
- 14:20 The Complex Analysis of Tram Noise in Relation to Changes in Dynamic Mobility of Tram Wheel**
Pawel Roman Komorski, Bartosz Czechyra and Tomasz Nowakowski
- 14:40 An investigation of the influence of wheel/rail contact conditions on curve squeal**
Stefano Alfi, Simone Baro, Roberto Corradi, Giacomo Squicciarini, David J. Thompson and Matthias Asplund

23.2 Tyre/Road Noise: Low Noise Pavements and Tyres

Wednesday, August 24 | Hall 7

Chairs: Julien Cesbron, Gaetano Licitra

- 8:00 Noise Reducing Thin Asphalt Layers in an Urban Environment: a pilot study in Antwerp**
Johan Maeck and Anneleen Bergiers
- 8:20 A New Method for Reliable Determination of the Acoustic Performance of Low-noise Road Surfaces at Speeds below 50 kph**
Sebastian Egger, Tina Saurer, Emanuel Hammer and Erik Bühlmann
- 8:40 In Situ Characterization of a Full Scale Poroelastic Test Section in Belgium**
Julien Cesbron and Anneleen Bergiers
- 9:00 Ageing of low noise road surfaces**
Manuel Männel and Beate Altreuther
- 9:20 ODSURF Project: Modelling and Experimental Optimization of Low Noise Pavements**
Michel Bérengier, Julien Cesbron and Peter Johann Gusia
- 9:40 New concepts for low noise concrete road surfaces**
Beate Altreuther and Manuel Maennel
- 10:00 Low noise pavement development for severe climate conditions**
Tadas Andriejauskas, Audrius Vaitkus, Viktoras Vorobjovas and Donatas Cygas
- 10:40 Noise and Rolling Resistance Properties of Various Types of Winter Tyres Compared to Normal Car Tyres**
Ulf Sandberg, Piotr Mioduszewski, Jerzy Ejsmont and Tiago Vieira

11:00 Tire Cavity Sound Measurement for Identifying Characters of Road Surfaces and Tire Structures

Masao Ishihama, Keisuke Matsumoto, Kosuke Miyoshi, Kunaiki Yoshii and Motohiro Kanda

11:20 Study on the tire vibration based on the Donnell-Mushtari theory

Yongbao Yang and Yintao Wei

11:40 A study of tire-road noise and peak level at the side of the road of environmental pavement

Hisho Mori, Tomotaka Ueta, Eiji Noguchi, Hironori Nagaoka, Kenichi Ishikawa, Shirou Kabashima, Ryosuke Tsuchiya and Hiroshi Miyazaki

24.1 Underwater Acoustics and Ship Noise: Underwater-sensor Calibration, Facilities and Procedures

Wednesday, August 24 | Hall 15

Chairs: Stephen Robinson, Stefan Schäl

13:00 Low Frequency Tank Calibration by Comparison

Bo G Lövgren

13:20 Calibration of the receiver for the measurement of ambient underwater noise

Alexander Isaev and Alexey Nikolaenko

13:40 A Real-time Method for Underwater Noise Time Series Generating

Liang An, Binbin Chen and Shiliang Fang

14:00 The Static and Dynamic Calibration Method of a Pressure Sensor

Karol Listewnik

14:20 Experimental research on hydrodynamic noise of a Cone-cylinder combined structure

Fu-Zhen Pang, Chuang Wu, Xu-Hong Miao and Xue-Ren Wang

14:40 Evaluation of uncertainty in the free-field calibration of hydrophones by the three-transducer spherical wave reciprocity method

Stephen Robinson, Peter Harris, Gary Hayman and Justin Ablitt

24.2 Underwater Acoustics and Ship Noise: Noise of Ships and Offshore Structures

Wednesday, August 24 | Hall 15

Chairs: Jan Abshagen, Carsten Zerbs

- 8:00 Calculation of ship source level in shallow water by propagation modelling**
Lian Sheng Wang, Stephen Robinson and Pete Theobald
- 8:20 Towards a Noise Map Model for Shallow Waters: Analysis of Propagation Losses Estimation**
David Santos Domínguez, Soledad Torres-Guijarro, Moisés Pérez-Lopez and Antonio Pena-Giménez
- 8:40 Classification of ships using autocorrelation technique for feature extraction of the underwater acoustic noise**
Noha Korany
- 9:00 Monitoring of underwater radiated sound for ships using transfer path analysis model**
Carsten Zerbs and Ingmar Pascher
- 9:20 Noise and Vibration Control in Cat-D Offshore Platform construction**
Rolf Peter Klaveness and Torbjørn Grønningen
- 9:40 Predicted and Measured Underwater Noise Levels from the Implosion of a Re-enforced Concrete Bridge Pier**
Paul Donovan, James Reyff and Carrie Janello
- 10:00 Measurements of pile driving noise at the research platform FINO3**
Frank Gerdes, Max Görler, Matthias Wildemann, Andreas Müller and Carsten Zerbs
- 10:20 Hydro Sound and Soil Vibration Measurements during the Installation of Offshore Foundations**
Benedikt Bruns, Philipp Stein, Christian Kuhn, Jörg Gattermann and Jan-Ole Deghardt
- 10:40 Understanding soil transmission paths of offshore pile driving noise - Seismic waves and their implications**
Marcel Ruhnau, Kristof Heitmann, Tristan Lippert, Stephan Lippert and Otto von Estorff
- 11:00 Integral approach for modelling offshore bubble curtains**
Tobias Bohne, Tanja Griebmann and Raimund Rolfes
- 11:20 Combined CFD and Vibro-Acoustic Approach for Modelling the Underwater Noise Reduction of Bubble Curtains**
René Smidt Lützen, Benjamin Trimoreau, Piero Iudiciani and Kenny Krogh Nielsen
- 11:40 Offshore Piling Noise Attenuation: Theory and new Applications on Monopiles and Jacket Foundations**
Karl Heinz Elmer, Benedikt Bruns and Christian Kuhn

25.1 Urban Sound Planning III

Wednesday, August 24 | Hall C2

Chairs: Luigi Maffei, Maurice Yeung

- 8:20 An experimental study on the shielding performance of buildings exposed to aircraft noise comparing measurements near front and rear facades**
Martijn Lugten, Koen Steemers and Jian Kang
- 8:40 Expansion to Equipment List of Quality Powered Mechanical Equipment System in Hong Kong**
Chi-Wing Law, Wing-Ho Leung, Cheung-Lam Wong and Geli Ma
- 9:00 Isolating key features in urban traffic dynamics and noise emission: a study on a signalized intersection and a roundabout**
Laura Estévez Mauriz, Jens Forssén, Wolfgang Kropp and Georgios Zachos
- 9:20 Agents of change in Melbourne's live music scene: A practical review**
Gillian Lee
- 10:00 Noise Emissions from Farm Types and Spatial Planning**
Michael Kropsch and Christoph Lechner
- 10:20 Traffic Noise Prediction and Mapping with Virtual 3D City Models**
Wei-Jiang Zhao, En-Xiao Liu, Si-Ping Gao, Hee Joo Poh, Kelvin Wenhui Li and Tse Tiong Tan
- 10:40 Advanced management of noise with the renewed proved 'information system industrial noise - i2'**
Richard Spaans, Hans J.A. van Leeuwen, Richard Schmidt and Piet Sloven
- 11:00 The Effect of Ground Characteristics on Optimum Road-Building Distance for Motorway Noise Control**
Sadiye Sibel Ozer and Nese Yugruk Akdag
- 11:20 Noise mapping in the service of developments**
Szabolcs Sillo and Pal Bite
- 11:40 The 3D Noise Mapping for Pearl River New Town of Guangzhou**
Zhiwei Zhang, Xialin Ma, Haibo Wang and Ming Cai

25.2 Urban Sound Planning: Management of Recreational Noise in Urban Areas

Wednesday, August 24 | Hall C2

Chair: Giovanni Brambilla

- 13:00 Managing Noise Conflicts Between Residential and Recreational Needs in Urban Areas**
Marion Anne Burgess
- 13:20 Evaluating the Effectiveness of Environmental Noise Management Applications**
Nilgun Akbulut Çoban and Kadir Gedik
- 13:40 Modeling of human aggregations as noise sources in city noise mapping**
Daniele Sepulcri, Francesca Remigi, Alessandro Buoso and Angelo Scarpa
- 14:00 In Situ Experience Sampling of Recreational Noise during Eurosonic Noorderslag (NL)**
Arryon Tijsma, Kirsten van den Bosch, Ronald van Elburg and Tjeerd Andringa
- 14:20 Recreational Noise: Impact and Costs of Movida For Disturbed Residents in Italy**
Elisabetta Ottoz, Lorenzo Rizzi and Francesco Nastasi
- 14:40 Advanced monitoring and analysis on recreational noise in urban area**
Andrea Cerniglia, Alessandro Bisceglie and Giovanni Zambon

26.3 Vehicle Acoustics (Car): Auxiliary Equipment

Wednesday, August 24 | Hall 13/14

Chairs: Wolfgang Foken, Jörg Bienert

- 9:00 Independent characterization of structure-borne sound sources using the in-situ blocked force method**
Thomas Alber, Michael Sturm and Andy Moorhouse
- 9:20 Study on Mechanism of Impact Noise on Steering Gear While Turning Steering Wheel in Opposite Directions**
Jeong-Tae Kim, Jong Wha Lee, Sun Mok Lee, Taehwi Lee and Woong-Gi Kim
- 9:40 A Methodology to Improve Steering Wheel Vibration of a Heavy Commercial Truck**
Polat Sendur, Ali Kurtdere and Oral Akaylar
- 10:00 Analysis and Parametric Study of Fork Muffler with and without H- Connection**
Vidya Sagar and M. L. Munjal
- 10:20 Detection of friction-induced instabilities at the origin of the squeal of wet poly-V belts**
Simon Gatignol, Thierry Demassougne and Alain Le Bot

26.5 Vehicle Acoustics (Car): Exterior Noise - Simulation

Wednesday, August 24 | Hall 13/14

Chairs: Wolfgang Foken, Jörg Bienert

- 10:40 A Research of a Two Degrees Nonlinear Quasi-zero Stiffness Vibration Isolation System**
Di Qu, Xiandong Liu, Yingchun Shan and Tian He
- 11:00 Application of Statistical Energy Analysis on a car: from the vehicle modeling to parts targeting**
Thibault Lafont, Claudio Bertolini, Francesca Ronzio, Théophane Courtois and Davide Caprioli
- 11:20 Validation of Fuel Tank Slosh Noise and Vibration Predictions**
Arnaud Charpentier, Ho Geon Kim, Yi Hwang, Jinchae Noh and Stephane Caro
- 11:40 Shape optimization of Extended Tube Muffler using Threshold Acceptance, Simulated Annealing and FEM Methods**
Khamchane Abdelkader, Youcef Khelfaoui and Brahim Hamtache
- 13:00 Prediction of Exterior Noise Generated by a Side-Mirror of an SUV**
Korcan Kucukcoskun, Olga Roditcheva, Matthias Eng, Robin Boeykens and Koen de Langhe
- 13:20 Wind Noise Modeling in Separated and Reattaching Boundary Layers**
Richard Dejong
- 13:40 Prediction of exterior sound field of an automotive for airborne excitation and transmission to the interior of the vehicle**
Caillet Arnaud, Antoine Guellec, Ludovic Dejaeger and Arthur Henry
- 14:00 Virtual NVH development using Full Vehicle NVH Simulator**
Dong Chul Park, Eunsoo Jo, Juin Kim, Klaas Altena, Mark Allman-Ward and Moon Ju Hwang
- 14:20 Study of boundary conditions and parameters effects on TL of the automobile door sealing system**
Guoming Deng, Xian Wu, Jianwang Shao and Cheng Wang
- 14:40 Improved Equivalent Source Method Applied to Sound Source Identification on a Vehicle**
Shu Li, Zhongming Xu, Yansong He, Zhifei Zhang and Qinghua Wang

27.02 Vibroacoustics: Application of Vibroacoustic Methods to Noise Control Treatment

Wednesday, August 24 | Hall E

Chairs: Nouredine Atalla, Olivier Robin, Denis Blanchet

- 8:00 Experimental demonstrators of vibro-acoustic metamaterials for low frequent NVH insulation**
Claus Claeys, Noé Geraldo Rocha De Melo Filho, Elke Deckers, Bert Pluymers and Wim Desmet
- 8:20 Application of acoustic metamaterial with stop band to panel and cylinder**
Kento Egashira, Kazuki Fukaya, Koichi Mori and Takashi Takahashi
- 8:40 Mitigating Ground Vibration by Periodic Inclusions and Surface Structures**
Lars V Andersen, Paulius Bucinskas, Peter Persson, Mihai Muresan, Liviu-Ionut Muresan and Ioan-Oreste Paven
- 9:00 Structure-borne noise generated by means of cogeneration units in boiler-plants**
Stanislav Ziaran and Ondrej Chlebo
- 9:20 Optimal Parameters Selection and Engineering Implementation of Dynamic Vibration Absorber Attached to Boring Bar**
Lie Li and Beibei Sun
- 9:40 Shielding Effect of U-shaped Girder Bridge on Wheel-rail Noise**
Xiaozhen Li, Dewang Yang and Xun Zhang

27.04 Vibroacoustics: Holographic Identification of Vibroacoustic Noise Sources

Wednesday, August 24 | Hall F

Chair: Wei Kang Jiang

- 13:00 Application of NAH method for the prediction of sound radiation from a flexible box structure**
Nagaraja Jade and B Venkatesham
- 13:20 Assessing the Vibro-acoustic Radiation Characteristics of a Compact Consumer Appliance**
Daniel Martin Taylor and John Lamb
- 13:40 Imaging of automotive engine components noise from non-synchronous sequential measurements**
Liang Yu, Zhi Qiang Zhang, Wei Kang Jiang and Motoyuki Abe
- 14:00 Reconstruction of transient vibration and sound radiation of an impacted plate**
Lin Geng, Chuanxing Bi, Xiaozheng Zhang, Yongbin Zhang and Liang Xu

27.05 Vibroacoustics: Internoise 2016 Workshop on Sound Insulation of Transportation Vehicles and Lightweight Buildings

Wednesday, August 24 | Hall E

Chairs: John L. Davy, Berndt Zeitler, Stephen Hambric

- 13:00 Development of a light sound insulation structure with variable insulation performance by using inflated membrane. (Phase2: Practical structure)**
Masaharu Nishimura, Takeki Kuwata and Tomonobu Goto
- 13:20 Enhancing the low-frequency noise reduction of a double wall with membrane-type acoustic metamaterials**
Felix Langfeldt, Wolfgang Gleine and Otto von Estorff
- 13:40 Analysis of the effects on transmission loss of number of layers and properties of gypsum panels in stud walls**
Wayland Dong, John Loverde and Erin Dugan
- 14:00 The Transmission of Forced Waves at a Junction**
John Laurence Davy and Alexandra Laura Irwin
- 14:20 Noise Control of Hydraulically Powered Vehicles**
Charles Moritz and Jennifer Shaw
- 14:40 Payload Fill Effect Investigation of a Large Launch Vehicle Fairing**
Ling Zheng, Wanglin Liu, Yuanyuan Chen, Yinan Gao, Shuhong Xiang, Guiqian Fang and Jiang Yang

27.06 Vibroacoustics: Low Frequency Numerical Methods in Vibroacoustics

Wednesday, August 24 | Hall E

Chair: Steffen Marburg

- 10:00 A Multi-Model Reduction Technique for Optimization of Coupled Structural-Acoustic Problems**
Ester Creixell-Mediante, Jakob S. Jensen, Jonas Brunskog and Martin Larsen
- 10:20 Influence of Foundation Type and Soil Stratification on Ground Vibration-a Parameter Study**
Lars V Andersen, Joeri Nithan Prins, Kent Persson and Peter Persson
- 10:40 A complete vibroacoustic model for the nonlinear response of imperfect circular plates: application to sound synthesis**
Àngels Aragonès, Cyril Touzé, Stefan Bilbao and Michele Ducceschi
- 11:00 Fatigue life analysis of the plate structure with random vibro-acoustic loading**
Zhang Gaonan and Huabing Jiang
- 11:20 Transverse Vibration of Arbitrarily-shaped Thin Plate with An Eccentric Hole in Elastic Boundary Conditions**
Xianlei Guan, Dongyan Shi and Qingshan Wang

11:40 Analysis of Wind-induced Vibrations in High-rise Buildings

Peter Persson, Per-Erik Austrell, Poul Henning Kirkegaard, Lars V Andersen and Fredrik Steffen

27.09 Vibroacoustics: Vibroacoustic Experiments

Wednesday, August 24 | Hall F

Chairs: Stephen C. Conlon, Stephen Hambric

10:20 Prospects and limits of modal damping determination from acoustic signals

Mario Wuehrl, Matthias Klaerner and Lothar Kroll

10:40 Principal Experimental Study of the Acoustic behavior of Pumps

Matthias Witte, Christof Benz, Stefan Bleeck and Frank-Hendrik Wurm

11:00 Vibro-acoustic Response of Panels Excited by a Diffuse Acoustic Field: Experimental Estimation of Sensitivity Functions using a Reciprocity Principle

Christophe Marchetto, Laurent Maxit, Olivier Robin and Alain Berry

11:20 Efficient modeling of vibroacoustic systems with consideration of and comparison with experimental measurements

Patrick Langer, Christian Guist and Steffen Marburg

11:40 A vibration analysis of a deployable structure

Tao Liu and Shaoze Yan

29.4 Noise & Health: Effects of Sound Sources on Sleep, Mental Health and Child Development

Wednesday, August 24 | Hall B2

Chairs: Mark Brink, Charlotte Clark

8:00 Systematic review of evidence on the effect of environmental noise on quality of life, wellbeing and mental health

Charlotte Clark and Katarina Paunovic

8:20 Systematic review of the evidence on the effect of environmental noise on cognition

Charlotte Clark and Katarina Paunovic

8:40 Pregnancy and childhood exposure to residential traffic noise and overweight at 7 years of age

Jeppe Christensen, Mette Sørensen and Thorkild la Sørensen

9:00 Update of WHO's Community Noise Guidelines: Evidence Review on the Effects of Noise on Sleep

Mathias Basner and Sarah McGuire

- 9:20 Effects of Continuous and Intermittent Transportation Noise on Sleep Fragmentation**
Franziska Rudzik, Laurie Thiesse, Reto Pieren, Jean Marc Wunderli, Mark Brink, Nicole Probst-Hensch, Martin Rösli and Christian Cajochen
- 9:40 Short-term effect of nocturnal transportation noise on glucose metabolism**
Laurie Thiesse, Franziska Rudzik, Reto Pieren, Jean Marc Wunderli, Karine Spiegel, Mark Brink, Nicole Probst-Hensch, Martin Rösli and Christian Cajochen
- 10:20 Evaluation and Refinement of a Methodology for Examining the Effects of Aircraft Noise on Sleep in Communities in the US**
Sarah McGuire, Maryam Witte and Mathias Basner
- 10:40 Residents' Attitude towards Air Traffic and Objective Sleep Quality are Related**
Eva-Maria Elmenhorst, Uwe Mueller, Franco Mendolia, Julia Quehl and Daniel Aeschbach
- 11:00 Effect of Mouth-Opening Levels on Sound Field Gain in the Ear Canal**
Jing-Hong Xiao, Jen-Fang Yu, Kun-Che Lee and Hsiu-Hui Chiu

29.7 Noise & Health: NORAH - A German Study on the Effects of Transportation Noise in the Vicinity of Airports

Wednesday, August 24 | Hall B2

Chairs: Dirk Schreckenberg, Rainer Guski

- 11:20 NORAH Overview**
Rainer Guski
- 11:40 The acoustic basis of the NORAH field studies**
Ulrich Moehler, Manfred Liepert, Maximilian Mühlbacher, Maria Klatte, Berthold Vogelsang and Georg Thomann
- 13:00 Effects of aircraft noise on annoyance and sleep disturbances before and after expansion of Frankfurt Airport - Results of the NORAH study, WP 1 'Annoyance and quality of life'**
Dirk Schreckenberg, Christin Belke, Frank Faulbaum, Rainer Guski, Ulrich Möhler and Jan Spilski
- 13:20 Effects of aircraft noise exposure on reading and quality of life on primary school children in Germany: Results from the NORAH-study**
Maria Klatte, Jan Spilski, Ulrich Möhler, Jochen Mayerl, Thomas Lachmann and Kirstin Bergström
- 13:40 The NORAH-Sleep Study: Effects of the Night Flight Ban at Frankfurt Airport**
Uwe Mueller, Eva-Maria Elmenhorst, Franco Mendolia, Julia Quehl, Mathias Basner, Sarah McGuire and Daniel Aeschbach

- 14:00 NORAH - field study: Effects of chronic exposure to traffic noise (aircraft, railway and road) on self-measured blood pressure**
Anja zur Nieden, Doreen Ziedorn, Karin Römer, Jan Spilski, Ulrich Möhler, Susanne Harpel, Dirk Schreckenberg and Thomas Eikmann
- 14:20 Disease risks of traffic noise - a large case-control study based on secondary data**
Andreas Seidler, Melanie Schubert, Mandy Wagner, Patrik Dröge, Karin Römer, Jörn Pons-Kühnemann, Enno Swart, Hajo Zeeb and Janice Hegewald
- 14:40 Willingness to pay in the Rhine-Main region according to aircraft noise, railway noise and road traffic noise**
Kerstin Giering, Rainer Guski, Tobias Klein, Ulrich Möhler and Dirk Schreckenberg

30 Wind Turbine Noise: Measurement, Modeling and Simulation II

Wednesday, August 24 | Pflanzen und Blumen

Chairs: Johannes Weber, Manfred Kaltenbacher

- 8:00 A quantitative and qualitative review of amplitude modulation noise from wind energy development.**
Sarah Large
- 8:20 Study on the Empirical Formula for the Sound Directivity around a Wind Turbine**
Yasuaki Okada, Tomoaki Uemura, Koichi Yoshihisa and Teruo Iwase
- 8:40 Amplitude modulation of noise from wind turbines due to propagation through the atmosphere**
Till Kühner
- 9:00 Computational Aeroacoustic Simulations of Small Vertical Axis Wind Turbine**
Johannes Weber, Christoph Regensburger, Matthias Tautz, Stefan Becker, Andreas Hüppe and Manfred Kaltenbacher
- 9:20 Underwater Noise Measurements in the North Sea in and near the Princess Amalia Wind Farm in Operation**
Erwin Jansen and Christ de Jong
- 9:40 Wind Turbine Noise and Health, a Nationwide Prospective Study in Denmark**
Aslak Harbo Poulsen and Mette Sørensen
- 10:00 "Big Noise Data" for wind turbines**
Claus Backalarz, Lars Sommer Søndergaard and Jens Elgaard Laursen

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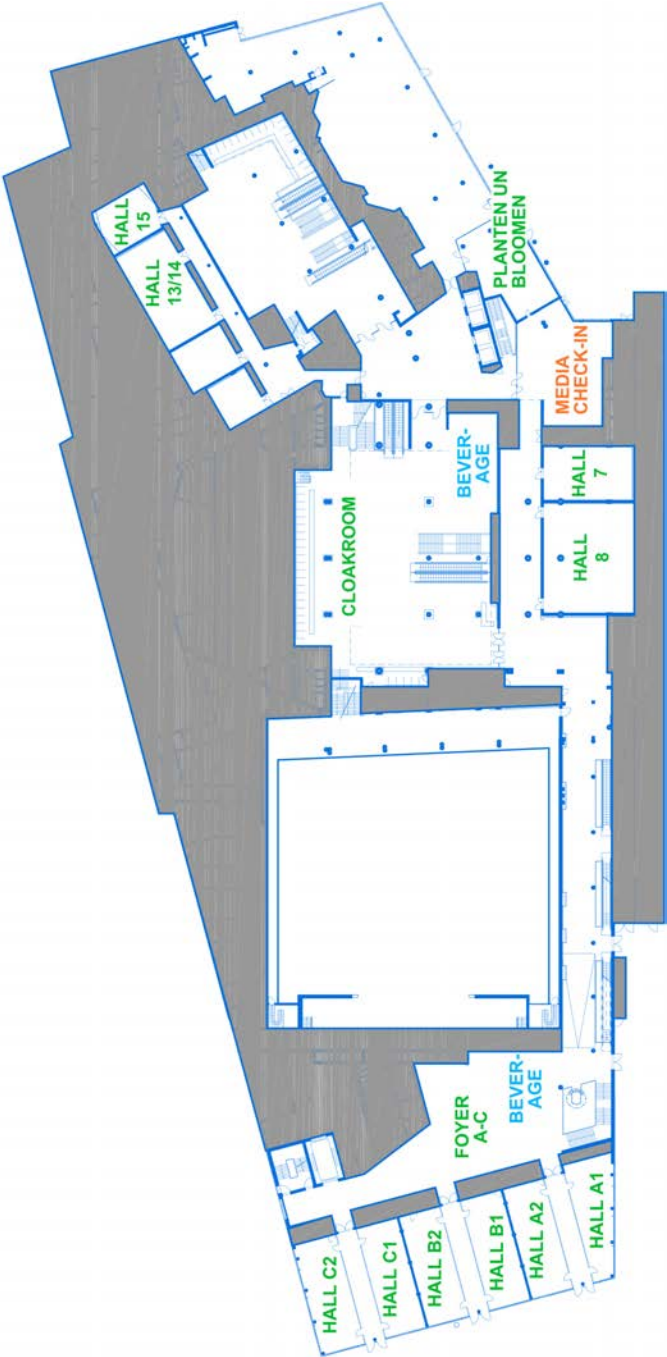
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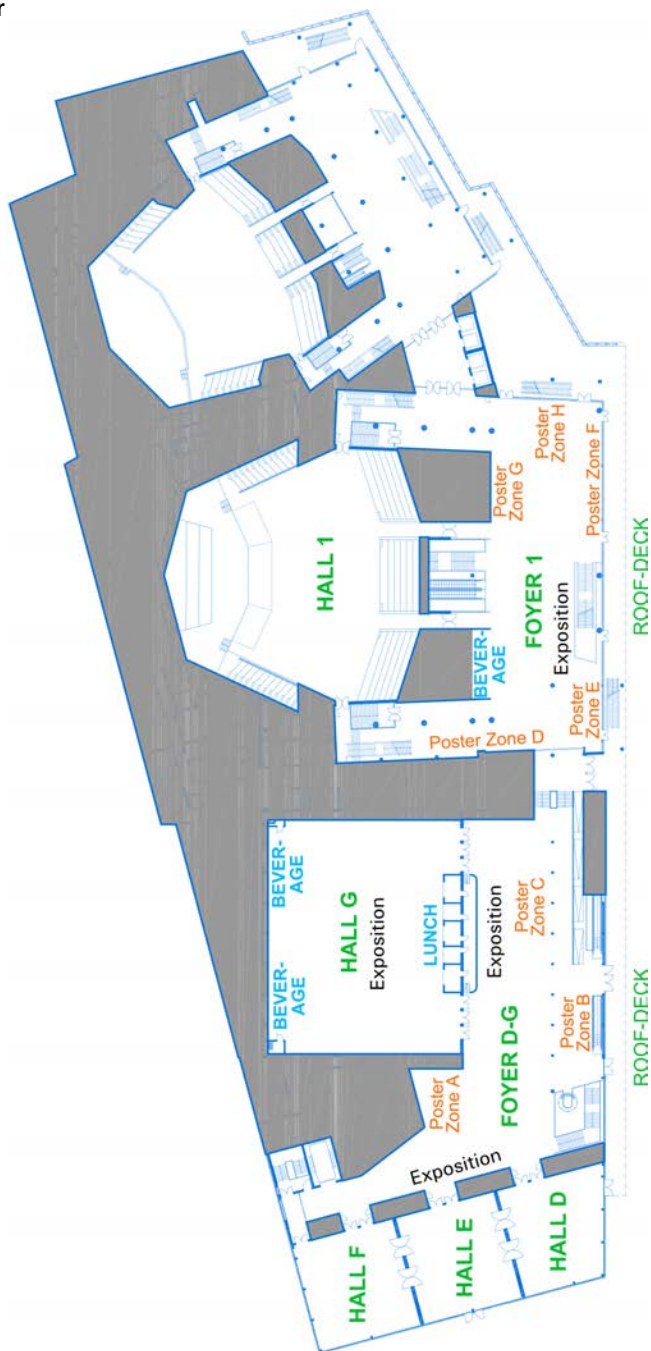
Ground Floor



First Floor



Second Floor



WiFi at the Venue

WiFi is available in every hall and foyer, except for hall 11-19. Please understand that WiFi at CCH is only suitable for checking your mails or updating the IN16 App. We strongly recommend not to download large packs of data neither to send sensitive data.

Manual for using the CCH-WiFi via SMS

SSID: WIFI_SMS_CCH

Password: cchwlan1602

1. Connect to WIFI_SMS_CCH and enter the password.
2. Open your internet browser and the portal page for the venue will appear.
3. Enter your mobile number (without the country code) and country your phone is registered to into the provided fields.
4. Accept the Terms and Conditions and click to "Request Pin".
Shortly you will receive a SMS with your PIN number.
5. Open your browser again and enter your PIN number when prompted.

The PIN is invalid after midnight.