

Proceedings of the ICA 2019 / EAA Euroregio

23rd International Congress on Acoustics, integrating 4th EAA Euroregio 2019

9 - 13 September 2019, Aachen, Germany

TABLE OF CONTENTS (OVERVIEW)

KEYNOTE LECTURES

Keynote Lecture Thursday	1
Keynote Lecture Friday	9

MONDAY, SEPTEMBER 09, 2019

01 A - Physical aspects for active control of noise and vibration	24
02 C - Acoustic Scene Analysis: Fundamentals and Applications	85
02 E - Microphone array systems and methods	121
03 D - Mechanisms of underwater hearing	164
03 W - General 'Animal Bioacoustics'	171
04 A - Prediction methods for sound insulations 1	187
06 B - Archeoacoustics	281
08 B - Policy and regulation for recreational noise / noise in buildings	319
09.1 A - Measuring Annoyance: New approaches	346
09.1 B - Intervention studies	397
10 E - TPA - Transfer Path Analysis	419
10 K - Tyre/road noise simulation	475
11 C - Noise sensor networks	520
11 F - Natural means for noise abatement	550
17 A - Aeroacoustics of fluid-structure interactions	588
17 B - Propagation of acoustic waves in solid waveguides surrounded by liquid	620
18 A - Physiologically inspired auditory processing models	655
20 A - Virtual auditory reality for enclosed spaces	714
20 B - Wave-based room simulations	763
20 W - General 'Room acoustics'	787
21 D - Soundscape indicators and modeling	821
21 E - Urban Sound Planning	891
21 K - Wind Turbine Noise	912
25 A - Sound fields for special purposes and transducer design	941
26 A - Metrology	1010

TUESDAY, SEPTEMBER 10, 2019

02 D - Loudspeaker arrays and sound field control	1037
04 A - Prediction methods for sound insulations 2	1184
04 D - Structure-borne sources in buildings	1232
04 F - Advanced measurement techniques in building acoustics	1286
04 H - Insulating and absorbing materials made from renewables 1	1394
06 C - Philosophy in Acoustics	1418
09.1 C - Perception of and responses to infrasound and low-frequency sound including wind turbines	1437
09.1 F - Contribution of the number of events and other traffic conditions to annoyance	1511
09.2 C - Cardiovascular effects	1539
10 F - Railway noise	1551
10 G - Aircraft noise	1590
11 D - Advances in noise mapping engineering methods	1616
11 E - Environmental sound auralisation	1654
12 C - Speech processing for normal-hearing and hearing-impaired listeners	1729
13 B - Flow acoustics of the human phonation	1780
13 C - Fan noise	1818
14 B - Sound propagation and Monitoring in Underwater Acoustics	1898
15 B - Numerical methods for acoustic materials and metamaterials	1963
16 C - Trends in health and safety in the musician's workplace with regard to sound exposure levels	2013
17 C - Aeroacoustics and noise control	2041
17 D - Acoustic Metamaterials 1	2074
17 E - Acoustics of holes and dampers with mean flow	2104
18 D - Binaural models: Algorithms and applications	2157
18 F - Compensation strategies in cochlear implants	2219
18 L - How learning alters auditory processing: brainstem to cortex	2252
20 C - Recent advances in sound absorption and diffusion of materials/devices	2259
20 D - Acoustics of cultural heritage buildings 1	2327
20 H - Open Plan offices	2368
21 B - Soundscapes of public spaces	2488

22 W - General 'Sound design'	2559
24 C - Vibro-acoustic behavior of structure under multi-field environments	2575
27 B - Audio for Mobile VR/AR	2611
Topic 02 - Posters: Audio signal processing (measurement, sensors, arrays)	2660
Topic 03 - Posters: Animal Bioacoustics	2917
Topic 04 - Posters: Building acoustics	2932
Topic 09 - Posters: Health effects of noise	2992
Topic 12 - Posters: Electro-acoustics and (3D) audio signal processing	3048
Topic 13 - Posters: Flow acoustics	3134
Topic 14 - Posters: Underwater acoustics - Part B	3185
Topic 15 - Posters: Numerical, computational and theoretical acoustics	3193

WEDNESDAY, SEPTEMBER 11, 2019

01 B - Applications of active control of noise and vibration	3245
02 B - Acoustic and audiovisual source localization 1	3289
02 B - Acoustic and audiovisual source localization 2	3329
02 F - Perceptual aspects in spatial audio processing	3354
02 G - Phase-Aware Time-Frequency Signal Processing	3369
03 A - Acoustical Signal Processing in biological systems: Mathematical Methods and Algorithms	3379
03 B - Evolution of the ear	3387
04 G - Low frequency sound and vibration in buildings	3395
04 H - Insulating and absorbing materials made from renewables 2	3450
04 K - Facade Sound Insulation	3490
05 W - Education in Acoustics	3547
08 H - EUROREGIO SESSION: EPA Network-IGNA: Progress report on the impact, technology and regulations to abate noise in Europe	3555
08 K - EUROREGIO SESSION: European harmonized calculation model for environmental noise CNOSSOS	3601
09.1 G - Response to transportation noise and vibration	3631
09.2 A - Sleep	3660
09.2 B - Cognitive effects	3677
10 D - Road Traffic Noise Prediction Methods	3690
11 A - Outdoor sound propagation (including urban sound propagation)	3748
11 B - Wind turbine noise: Generation and propagation	3826
14 A - Signal processing and inversion in underwater acoustics 1	3837
18 C - Rehabilitative audiology	3841
18 H - Audio-visual (speech) perception	3870
18 K - Influences of multisensory processing on auditory perception	3906
18 N - Parcellating the functions of human auditory cortex	3934
20 D - Acoustics of cultural heritage buildings 2	3943
20 F - Sound absorption including the reverberation room issues, new trends revision ISO 354	3991
20 M - Effects of noise and room acoustics on communication among occupational voice users	4096
21 F - Indoor soundscaping and acoustic comfort	4138
21 N - Trends on the use of technology in soundscape analysis, design and planning	4200
21 O - Sound as part of digitalization of the Unesco and Unique sites	4214
24 B - Numerical analysis and experiment on structural acoustics	4219
24 G - Human Vibration	4281
Topic 01 - Posters: Active acoustic systems	4303
Topic 05/06 - Posters: History and Education	4348
Topic 08 - Posters: Noise and vibration policy and assessment	4356
Topic 10 - Posters: Vehicle acoustics (air, road, rail, water, ...)	4364
Topic 11 - Posters: Environmental sound (sources, propagation)	4391
Topic 14 - Posters: Underwater acoustics	4446
Topic 17 - Posters: Physical acoustics	4480
Topic 20 - Posters: Room acoustics	4498
Topic 24 - Posters: Structure-borne sound and vibration engineering	4660
Topic 25 - Posters: Ultrasound	4746
Topic 27 - Posters: Virtual Acoustics	4827

THURSDAY, SEPTEMBER 12, 2019

01 C - Metamaterials for active and passive acoustic control	4856
02 A - Microphone array methods in room acoustics	4885
02 W - General 'Audio signal processing (measurement, sensors, arrays)'	4969
04 B - Sound insulation in wooden construction	5007
04 C - Acoustic regulations and quality classes for buildings 1	5044
04 L - Evaluation of floor impact sound insulation	5112
08 W - General 'Noise and vibration policy and assessment'	5153
10 C - Design and control of the sound environment in a vehicle cabin	5174
12 A - Spatial audio: Reproduction techniques and signal processing 1	5211

13 A -	Flow duct acoustics	5276
13 D -	Computational flow-generated hydroacoustics	5312
13 E -	Aeroacoustics and Flow Controls	5327
14 A -	Signal processing and inversion in underwater acoustics 2	5399
15 A -	Uncertainty Quantification in Aero- and Vibro-Acoustics	5422
15 D -	Boundary and finite element methods in acoustics and vibration 1	5434
15 W -	General 'Numerical, computational and theoretical acoustics'	5481
16 A -	Articulation and other transients	5505
16 W -	General 'Musical acoustics'	5543
17 D -	Acoustic Metamaterials 2	5580
17 F -	Acoustic propagation and flames in combustors	5607
18 B -	Objective measures of auditory function	5641
18 M -	Statistics in auditory scenes	5681
18 O -	Speech enrichment: listening effort and intelligibility (Poster Session)	5700
19 B -	Binaural Phenomena in Psychoacoustics	5773
19 E -	Metrics and Modeling Perception of Sound Attributes	5814
19 W -	General Psychoacoustics	5843
20 G -	Acoustical needs for comfortable and inclusive learning spaces	5877
20 P -	Room acoustical simulation methods for high and low frequencies	5982
21 A -	Towards standardized soundscape methodologies	6080
23 B -	From audio and speech quality to Quality of Experience and Aesthetic Appeal	6129
23 W -	General 'Speech'	6180
24 A -	Shape and topology optimization of vibroacoustic structures	6211
24 D -	Inverse problems in vibration and acoustics	6245
25 C -	High-frequency and ultrasonic emissions in air: Applications, measurement and human well-being	6328
27 C -	Sound field rendering in Virtual Reality	6376
Topic 16 - Posters: Musical acoustics		6438
Topic 18 - Posters: Physiological, psychological and audiological acoustics		6505
Topic 19 - Posters: Psychoacoustics		6637
Topic 21 - Posters: Soundscape and Urban Sound Planning		6673
Topic 22 - Posters: Sound quality of fans and HVAC-systems		6774
Topic 23 - Posters: Speech		6787

FRIDAY, SEPTEMBER 13, 2019

01 D -	Signal processing and systems for active control of noise and vibration	6883
02 H -	Machine learning for audio signal processing	6929
04 C -	Acoustic regulations and quality classes for buildings 2	6969
06 A -	Modern history of acoustics	6997
08 D -	Policy and regulation for noise in urban planning and urban soundscapes	7022
08 E -	EUROREGIO SESSION: Policy and regulation for noise and vibration in workplaces	7049
09.2 E -	Noise and health in children	7079
09.2 F -	EUROREGIO SESSION: Implication WHO Guidelines	7110
10 B -	Design of warning sound - from honking impact to sound quality in electric vehicles	7153
10 W -	General 'Vehicle acoustics (air, road, rail, water, ...)'	7195
12 A -	Spatial audio: Reproduction techniques and signal processing 2	7232
12 D -	Measurement and modelling of electro-acoustic transducers	7272
14 C -	Radiated Noise of Ships and Offshore Structures	7382
15 D -	Boundary and finite element methods in acoustics and vibration 2	7439
16 B -	Measurement, modelling and perception of string instruments	7534
17 W -	General 'Physical acoustics'	7565
18 E -	Assessment of hearing ability in realistic environments	7608
18 G -	Machine learning based approaches to model auditory perception	7651
19 A -	Application of Psychoacoustics in Noise Evaluation	7665
19 D -	Cognitive Stimulus Integration (in the context of auditory sensations and sound perceptions)	7751
20 L -	Production and perception of artistic voice	7775
20 N -	Acoustics and noise in hospitals: experience and impact on patients, staff and community well-being	7797
20 O -	Spatial and binaural evaluation	7863
21 L -	Audio visual interactions for noise perception	7927
21 P -	Noise indicators and exposure assessment for health impact and soundscape studies	7946
22 B -	Sound quality of everyday-life products	8003
22 C -	Sound quality of fans and HVAC-systems	8024
24 F -	Structural intensity - Computation, measurement, application	8069
24 W -	General 'Structure-borne sound and vibration engineering'	8126
25 B -	Non-destructive evaluation (NDT)	8148
25 W -	General 'Ultrasound'	8201
26 B -	Novel Ultrasound Imaging and Stimulation	8218
27 A -	Auditory cognition in interactive virtual environments	8234

Keynote Lectures

Thursday, September 12

Keynote Thursday

The ear at the age of IoT
Jeremie Voix

1

Friday, September 13

Keynote Friday

Thermoacoustic instabilities - physical mechanisms and mathematical modelling
Maria Heckl

9

Monday, September 9

Monday, September 9

01 A - Physical aspects for active control of noise and vibration

Effectiveness of ANC Partition with Film Speaker <i>Yusuke Makiyama, Shun Hirose, Kohei Oto, Yusuke Komoto and Yoshinobu Kajikawa</i>	24
Feedforward Control of Fan Noise in Ducts using Multichannel Order-reduced Inverse Filters <i>Mingsian R. Bai and Shin-Cheng Huang</i>	31
Integrated Simulation of Active Noise Cancellation using a Computational Fluid Dynamics Approach <i>Arun Cherkkil, Vinod Narayanan and Nithin George</i>	39
Limits of Noise Control over Space <i>Thushara Abhayapala, Jihui Zhang, Prasanga Samarasinghe and Wen Zhang</i>	47
Formation of local quiet zones using the length-limited parametric array loudspeaker <i>Yue Wang, Ruicong Li, Chuang Shi and Youxin Li</i>	55
Robust stability and performance of local active control systems using virtual sensing <i>Stephen Elliott, C K Lai, Thibault Vergez and Jordan Cheer</i>	61
Tonal active control of the power scattered by locally-reacting spheres using a small number of radiators near the surface <i>Mihai Orita, Stephen Elliott and Jordan Cheer</i>	69
Synthesis of the Ineter by Direct Acceleration Feedback <i>Neven Alujević, Ivan Čatipović, Marko Jokić and Hinko Wolf</i>	77

Monday, September 9

02 C - Acoustic Scene Analysis: Fundamentals and Applications

Binding of speech syllables when segregation occurs <i>Marion David, Mathieu Lavandier, Nicolas Grimault and Andrew, J. Oxenham</i>	85
Musical scene analysis of hearing-impaired and normal- hearing listeners: a melody and instrument matching task <i>Kai Siedenburg, Saskia Röttges, Kirsten Wagener and Volker Hohmann</i>	93
Comparative Study of Single-Channel Algorithms for Blind Reverberation Time Estimation <i>Heinrich Löllmann, Andreas Brendel and Walter Kellermann</i>	94
The effect of room acoustics on audio event classification <i>Dimitra Emmanouilidou and Hannes Gamper</i>	102
Deep network source localization and the influence of sensor geometry <i>Jörn Anemüller and Hendrik Schoof</i>	110
Virtual auditory scenes created by time reversal mirror technique <i>Georgina Alejandra Lizaso and Jorge Petrosino</i>	114

Monday, September 9

02 E - Microphone array systems and methods

Bayesian inference in direction of arrival analysis using spherical microphone arrays <i>Ning Xiang, Stephen Weikel and Christopher Landschoot</i>	121
The max-norm minimization in non-synchronous measurements <i>Liang Yu, Yi Fan, Jerome Antoni, Haijun Wu, Quentin Leclere, Baihua Yuan and Wei Kang Jiang</i>	127

Table of Contents - ICA 2019 / EAA Euroregio

Microphone Array Method for Determining Noise Angular Energy Distribution on Building Envelopes <i>Miodrag Stanojević, Miloš Bjelić, Dragana Šumarac Pavlović, Miomir Mijić and Tatjana Miljković</i>	134
Modal Analysis for Damage Detection in Structures by Non-contact Measurements with a Commercial Microphone Array <i>Olaf Bölke, Jan Heimann and Joquin Garcia</i>	142
Analysis of the Sound Field in a Room Using Dictionary Learning <i>Manuel Hahmann, Samuel Arturo Verburg and Efren Fernandez-Grande</i>	149
Acoustic transfer admittance of cylindrical cavities in infrasonic frequency range <i>Paul Vincent, Dominique Rodrigues, Franck Larsonnier, Cécile Guianvarc'h and Stéphane Durand</i>	155
Alternating Least Squares-Based Joint Estimation of RETFs and PSDs for Multi-Channel Speech Enhancement <i>Simon Doclo, Marvin Tammen and Ina Kodrasi</i>	163
Monday, September 9	
03 D - Mechanisms of underwater hearing	
Comparing pressure and intensity units for in-air and underwater hearing thresholds <i>Magnus Wahlberg</i>	164
The Cormorant Ear - Adapted to Underwater Hearing? <i>Ole Næsbye Larsen, Magnus Wahlberg and Jakob Christensen-Dalsgaard</i>	165
Underwater Sound Localization using Internally Coupled Ears (ICE) <i>Leo van Hemmen and Anupam Prasad Vedurmudi</i>	168
Monday, September 9	
03 W - General 'Animal Bioacoustics'	
Effects of traffic noise, land use types and ecotones on the distribution of resident birds in a natural reserve in the Ruhr area, Germany <i>Philipp Antoniou and Bryce Timothy Lawrence</i>	171
Adaption to British Standards to identify Construction Site Activity noise sources with the Potential to Cause Stress to Giant Pandas <i>Murray Snaith, Alessandro Rodriguez and Brett Marmo</i>	179
Monday, September 9	
04 A - Prediction methods for sound insulations 1	
Comparison between prediction and measurement of sound attenuation associated to ventilation network elements <i>Catherine Guigou-Carter, François Bessac and Simon Bailhache</i>	187
Sound Transmission through Double-glazed Window: Numerical and Experimental Analyses <i>Chaima Soussi, Mathieu Aucejo, Walid Larbi and Jean-François Deü</i>	195
Sound Transmission through Aluminum Framings of Window, Door and Façade Systems <i>Yihe Huang, Fangliang Chen, Tejav Deganyar, Anselm Boehm and Rebecca Grotemeyer</i>	203
Investigation of rebuild repeatability issues in laboratory impact testing <i>John Loverde, Wayland Dong, Erik Holmgreen and Scott Bergquist</i>	211
Uncertainty quantification of the diffuse sound field assumption in structure-borne sound radiation predictions <i>Edwin Reynders, Pengchao Wang, Geert Lombaert and Cédric van Hoorickx</i>	218

Table of Contents - ICA 2019 / EAA Euroregio

Numerical Investigation of the Reverberation Method for Measuring the Total Loss Factor of Plate-Like Structures <i>Yasutomo Yamasaki, Naohisa Inoue and Tetsuya Sakuma</i>	226
Simplified prediction of the vibration reduction indices of double wall junctions <i>Arne Dijckmans, Lieven de Geetere and Charlotte Crispin</i>	234
Sound Insulation Prediction of Single and Double CLT Panels <i>Fredrik Ljunggren</i>	242
Determining the airborne sound insulation improvement of thermal cladding systems in combination with heavyweight exterior walls <i>Claire Churchill, Maximilian Neusser and Simon Hinterseer</i>	249
Determination and optimization of sound insulation capabilities of geometrically complex walls <i>Elias Perras, Chuanzeng Zhang, Jihao Chen and Zhijiang Ji</i>	257
Prediction methods and evaluation of high sound insulations <i>Maarten Luyck</i>	265
Comparison of transmission loss prediction using condensed equivalent plate models <i>Arasan Uthayasuriyan, Fabien Chevillotte, Luc Jaouen, Dimitrios Chronopoulos and Emmanuel Gourdon</i>	273
 Monday, September 9	
06 B - Archeoacoustics	
Acoustic effects at prehistoric landscapes: an archaeoacoustics analysis of rock art sites from Western Mediterranean <i>Margarita Díaz-Andreu, Angelo Farina, Enrico Armelloni, Laura Coltofean, Mathieu Picas and Tommaso Mattioli</i>	281
From Methodology to Archaeoacoustics in the Time of Scripture: Complex Dialogue Between Archaeological Evidence, Texts from Scholars and Written Mentions <i>Jean-Christophe Valiere, Estèle Dupuy and Bénédicte Bertholon</i>	288
A case of archaeological evidence in favour of acoustical intentions linked with pots in church vaults: Montivilliers Abbey <i>Jean-Dominique Polack, Jean-Christophe Valiere, Bénédicte Bertholon and Pauline Carvalho</i>	295
Virtual reconstructions of the Théâtre de l'Athénée for archeoacoustic study <i>David Poirier-Quinot, Barteld N. J. Postma and Brian F. G. Katz</i>	303
Acoustic Simulation of Elizabeth I's Speech at Tilbury <i>Braxton Boren</i>	311
 Monday, September 9	
08 B - Policy and regulation for recreational noise / noise in buildings	
Comparison of the recreational noise regulation in Russia, Europe, and Asia <i>Sergio Luzzi, Chiara Bartalucci, Iuliia Rassoshenko, Aleksandr Shashurin and Nickolay Ivanov</i>	319
Recreational Noise Management in Turkey <i>Nilgün Akbulut Coban, Sezer Kaya, Güray Doğan and Mustafa Çoban</i>	327
Long term monitoring of noise pollution in social gatherings places: time analysis and acoustic capacity as supports of management strategies <i>Enrico Gallo and Louena Shtrepi</i>	333
Revision of Chinese National Standard GB 50118 - Code for Design of Sound Insulation of Civil Buildings <i>Guojun Yan, Weibin Wu, Jie Lin, Chun Xu and Qiyuan Zhao</i>	341

Monday, September 9

09.1 A - Measuring Annoyance: New approaches

Noise Annoyance - What does it mean? <i>Paul David Hooper and Ian H. Flindell</i>	346
Assessment of the impact of changes in noise exposure at an expanding airport by means of the multiple item aircraft noise annoyance scale (MIAS) <i>Dirk Schreckenberg, Rainer Guski, Julia Haubrich and Jan Spilski</i>	353
Forty-five years of surveys on annoyance from road traffic noise <i>Truls Gjestland</i>	361
Laboratory Studies of Annoyance <i>Sonoko Kuwano and Seiichiro Namba</i>	366
Perception of low-level Sound Sources in Everyday Situations <i>Siegbert Versümer and Jörg Becker-Schweitzer</i>	373
Community response to high-speed railway noise in Tianjin, China <i>Lan Zhang and Hui Ma</i>	374
Using mobile application to assess quality of acoustic and visual environment in relationship with aircraft noise <i>Ferenc Marki, Catherine Lavandier, Dirk Schreckenberg and Stephan Grossarth</i>	382
Assessment of Short-term Annoyance due to Shooting Noise Using the Experience Sampling Method <i>Stephan Grossarth and Dirk Schreckenberg</i>	390

Monday, September 9

09.1 B - Intervention studies

Comparing noise policies of 8 European cities using a noise intervention classification scheme <i>Timothy van Renterghem, Hannelore Hernalsteen and Alan Lex Brown</i>	397
Are perceived noise control and its value related to behavioural determinants of residents' civic engagement? A cross-sectional study among older adults <i>Natalie Riedel, Adrian Loerbroks, Joachim Scheiner, Susanne Moebus, Irene van Kamp, Thomas Claßen, Heike Koeckler and Gabriele Bolte</i>	404
Soundscape approaches in urban planning: implications for an intervention framework <i>Irene van Kamp, Alan Lex Brown and Dirk Schreckenberg</i>	405
Road Traffic Noise Interventions: Development of a Method to Quantify their Effects on Annoyance and Sleep Disturbance on a Small Urban Scale <i>Maud Dohmen, Maarten Hornikx and Irene van Kamp</i>	411

Monday, September 9

10 E - TPA - Transfer Path Analysis

Transfer Path Analysis of Rumbling Noise in a Passenger Car Based on Measured In-Situ Blocked Force <i>Sang Kwon Lee, Taejin Shin, Yeonsoo Kim and Kanghyun An</i>	419
Combining Structural Modification with In-Situ Transfer Path Analysis to Solve Noise and Vibration Problems <i>Andrew Elliott</i>	427
In-Situ Transfer Path Analysis of Multiple Vibration Sources in a Complex Source- Receiver Assembly <i>Lucy Susan Barton, Andrew Elliott, Andy Moorhouse and John Smith</i>	435
Analysis of a vibrating structure as an airborne sound source by means of matrix inversion <i>Serafima Anisovich, Roland Sottek and Matthias Wegerhoff</i>	443
Can I trust my TPA results? <i>Frank Jürgens, Christian Nettelbeck and Philipp Sellerbeck</i>	451

Physics-Informed Transfer Path Analysis with Parameter Estimation using Gaussian Processes <i>Christopher Albert</i>	459
Obtaining method of high contributing body and frame vibration behavior to road noise using principal component contribution analysis <i>Hiroki Taguchi, Kanon Nukata and Junji Yoshida</i>	467
Monday, September 9	
10 K - Tyre/road noise simulation	
The influence of tyre cavity resonances on the exterior noise <i>Wolfgang Kropp</i>	475
Prediction of dynamic hub forces as a source of structure-borne tire/coarse road noise using a high-fidelity simulation approach <i>Daniel de Gregoriis, Frank Naets, Peter Kindt and Wim Desmet</i>	483
Use of waste and marginal materials for silent roads <i>Lily Poulidakos, Sahand Athari, Peter Mikhailenko, Zhengyin Piao, Muhammad Rafiq Kakar, Moises Bueno, Reto Pieren and Kurt Heutschi</i>	491
A LIFE NEREiDE test track with a poro-elastic pavement in Belgium <i>Luc Goubert</i>	499
CFD Modeling of Pressure Variation in a Road Cavity with Volume Variation <i>Marianne Bou Leba Bassil, Julien Cesbron and Philippe Klein</i>	506
Parametric Study of the Estimation of Indoor Trolley Wheel Stiffness for Use in a Rolling Noise Prediction Model <i>Matt Edwards, Fabien Chevillotte, François-Xavier Bécot, Luc Jaouen and Nicolas Totaro</i>	514
Monday, September 9	
11 C - Noise sensor networks	
Performance Analysis of the Acoustic Event Detector in the DYNAMAP's Rome suburban area <i>Rosa Ma Alsina-Pagès, Francesc Alías, Joan Claudi Socoró and Ferran Orga</i>	520
The Collation and Use of Data from Continuous Remote Monitoring Systems for the Control of Sound Emissions from a Large Industrial Noise Source <i>Tim Procter and Stephen Lyons</i>	528
Estimation of Noise Immission Directivity using Small Microphone Array <i>Jurij Prezelj, Luka Čurović, Tadej Novaković and Jure Murovec</i>	536
Travel times in complex environments <i>Adrien Dagallier, Sylvain Cheinet, Daniel Juvé, Aurélien Ponte and Jonathan Gula</i>	544
Monday, September 9	
11 F - Natural means for noise abatement	
A review of natural means for noise abatement <i>Keith Attenborough</i>	550
The influence of organic matter on acoustical properties of soil <i>Kamrun Suravi, Ho-Chul Shin, Keith Attenborough, Shahram Taherzadeh and Richard Whalley</i>	558
Acoustic absorption of a living green wall - Parametric transducer and XYZ gantry measurement method <i>Anna Romanova and Kirill Horoshenkov</i>	566
Sound Propagation in a Forest Based on 3D Multiple Scattering Theories <i>Vladimir Ostashev, David Keith Wilson, Michael Muhlestein and Keith Attenborough</i>	574

Sound Absorption by Tree Bark <i>Mengmeng Li, Timothy van Renterghem, Jian Kang and Dick Botteldooren</i>	582
--	-----

Monday, September 9

17 A - Aeroacoustics of fluid-structure interactions

An aeroacoustic investigation into the effect of self-oscillating trailing edge flaplets <i>Edward Talboys, Thomas Geyer and Christoph Bruecker</i>	588
The suppressed sound of inhomogeneous flapping airfoils <i>Michael Weidenfeld and Eran Arad</i>	596
Acoustic emission of aeroelastic vortex-gust interactions <i>Huansheng Chen and Justin Jaworski</i>	604
Analytic solutions for acoustic scattering by blade rows with complex boundaries: porosity, compliance and impedance <i>Peter Baddoo and Lorna Ayton</i>	612

Monday, September 9

17 B - Propagation of acoustic waves in solid waveguides surrounded by liquid

Digital micro-laboratory application using surface acoustic wave devices <i>Jun Kondoh, Tomohiko Fukaya, Yota Terakawa, Sota Tsunogaya and Ren Ikeda</i>	620
A study on the relationship between rock microstructure and wave dispersion in carbonates and sandstones <i>Wei Cheng, Jing Ba and Jose Carcione</i>	627
Acoustic waves in piezoelectric plates in contact with gasoline <i>Iren Kuznetsova, Boris Zaitsev, Andrey Teplykh and Anastasia Kuznetsova</i>	633
Study of shear-horizontal waves in structure "piezoelectric - viscous and conductive liquid" <i>Vladimir Kolesov, Iren Kuznetsova, Vladimir Anisimkin, Zhenghua Qian and Alena Gorbunova</i>	637
Microstreaming patterns induced by shape modes of acoustically trapped bubbles <i>Sarah Cleve, Gabriel Regnault, Cyril Mauger, Claude Inserra and Philippe Blanc-Benon</i>	641
Nonlinear shear wave propagation to assess biomechanical properties in soft tissue <i>Juan Melchor, Guillermo Rus, Antonio Callejas, Inas Faris, Javier Naranjo and Miguel Riveiro</i>	647

Monday, September 9

18 A - Physiologically inspired auditory processing models

Ray Meddis: A Model Scientist <i>Christian Sumner</i>	655
Application of a Computationally Efficient Coincidence Detector Model to Simulate Auditory Brainstem Neurons <i>Go Ashida, Mathias Dietz and Jutta Kretzberg</i>	663
A model of the prespike of the calyx of Held synapse in the auditory brainstem <i>Gerard Borst and Martijn C. Sierksma</i>	669
Detecting interaural incoherence based on variations in the hemispheric balance <i>Jörg Encke, Lucy Anderson, Werner Hemmert, David McAlpine and Torsten Marquardt</i>	677
Hearing-impaired sound perception: What can we learn from a biophysical model of the human auditory periphery? <i>Alejandro Osses, Frauke Ernst and Sarah Verhulst</i>	678

Table of Contents - ICA 2019 / EAA Euroregio

Phenotyping and Computational Modeling of Diverse Forms of Genetic Hearing Loss <i>Ian C. Bruce, Michael R. Wirtzfeld, Anne Griffin, Amanda K. Morgan, Matthew B. Lucas, Jill Lowther, Terry-Lynn Young and Susan G. Stanton</i>	686
Clustering in an array of nonlinear and active oscillators as a model of spontaneous otoacoustic emissions <i>Liv Moretto Sørensen, Peter Leer Bysted and Bastian Epp</i>	688
Simulation of cochlear response by bone conducted tone <i>Yasuki Murakami</i>	696
Pulse coding in the ensemble of peripheral fibres and auditory discrimination of the tone burst intensity <i>Liudmila Rimskaya-Korsakova</i>	704
Towards a model of electric-acoustic stimulation in cochlear implant subjects with residual hearing <i>Daniel Alrutz and Waldo Nogueira</i>	712

Monday, September 9

20 A - Virtual auditory reality for enclosed spaces

Environmental Audio Scene Description and Rendering Model for Virtual or Augmented Reality <i>Jean-Marc Jot, Rémi Audfray and Sam Dicker</i>	714
Attempt to Improve the Total Performance of Sound Field Reproduction System: Integration of Wave-Based Methods and Simple Reproduction Method <i>Hiroshi Kashiwazaki and Akira Omoto</i>	715
Design and simulation of a benchmark room for room acoustic auralizations <i>Fotis Georgiou, Baltazar Briere de la Hossieraye, Maarten Hornikx and Philip W. Robinson</i>	723
Individualized dynamic binaural Auralization of Classroom Acoustics using a Virtual Artificial Head <i>Mina Fallahi, Martin Hansen, Simon Doclo, Steven van de Par, Dirk Püschel and Matthias Blau</i>	731
Anechoic audio and 3D-video content database of small ensemble performances for virtual concerts <i>David Thery and Brian F. G. Katz</i>	739
Effects of the order of Ambisonics on localization for different reverberant conditions in a novel 3D acoustic virtual reality system <i>Hermes Sampedro Llopis, Finnur Pind and Cheol-Ho Jeong</i>	747
Binaural reproduction capability for multiple off-axis listeners based on the 3-channel optimal source distribution principle <i>Motoki Yairi, Takashi Takeuchi, Keith Holland, Dylan Morgan and Laurence Haines</i>	755

Monday, September 9

20 B - Wave-based room simulations

A locally implicit time-domain FEM for room acoustics simulation including permeable membrane absorbers <i>Takumi Yoshida, Takeshi Okuzono and Kimihiro Sakagami</i>	763
Modelling Boundary Conditions in High-Order, Nodal, Time-Domain Finite Element Methods <i>Finnur Pind, Cheol-Ho Jeong, Jan S. Hesthaven, Allan P. Engsig-Karup and Jakob Strømmand-Andersen</i>	771
Broadband Time-domain Impedance Boundary Modeling with the Discontinuous Galerkin Method for Room Acoustics Simulations <i>Huiqing Wang and Maarten Hornikx</i>	779

Monday, September 9

20 W - General 'Room acoustics'

Calculating the Speech Transmission Index in fluctuating noise: a data-driven approach in the short-term implementation <i>Nicola Prodi and Chiara Visentin</i>	787
Multidimensional Visual Cluster Analysis of Room Acoustical Parameter Values as Means to gain Scientific Insights and Design / Consulting Tool <i>Klaus-Hendrik Lorenz-Kierakiewitz, Benjamin Pfändner, Christoph Reuter and Stefan Ostrowski</i>	795
Acoustics of Multipurpose Halls in Croatia <i>Marko Horvat and Kristian Jambrošić</i>	803
Acoustics features of sports facilities on the example of FIFA 2018 football stadiums in Russia <i>Anton Peretokin, Anatoly Livshits, Alexey Orlov and Natalia Shirgina</i>	811
Echoidentification: Using reflected sound to identify objects and their characteristics <i>Dawn Anderson and Sarahelizabeth Baguhn</i>	819

Monday, September 9

21 D - Soundscape indicators and modeling

Evaluating Sound Environment in Shenzhen by Using Artificial Neural Networks <i>Chen Xing, Zhixiang Tao, Yu Lei and Jian Kang</i>	821
Towards a Soundscape Surround Index <i>Tin Oberman, Kristian Jambrošić, Francesco Aletta and Jian Kang</i>	829
Acoustic comfort evaluation in residential buildings: modeling associations of acoustic data to subjective responses. <i>Nikolaos-Georgios Vardaxis and Delphine Bard-Hagberg</i>	836
A widened array of metrics (WAM) approach to characterizing urban soundscapes - the example in SALVE <i>Bryce Timothy Lawrence, Robynne Sutcliffe, Salman Ahmed, Susanne Moebus and Dietwald Gruehn</i>	844
Ambient Soundscape Assessment of Wind Parks <i>Tianhong Yu, Holger Behm, Ralf Bill and Jian Kang</i>	852
Soundscape cost index: a case study in Aachen <i>Margret Sibylle Engel, Carmella Pfaffenbach and Janina Fels</i>	860
Soundscape Cognition for User Behavior in Urban Parks <i>Hyun In Jo, Jin Yong Jeon and Jean-Dominique Polack</i>	868
Investigation on the restoration effect of soundscape in parks in high- density cities: Taking Lu Xun Park in Shenyang, China as an example <i>Yuan Zhang, Ruining Zhang and Ling Zhu</i>	876
The Synthesis of Soundscape using Genetic Algorithm and Popular Songs <i>Mia Suhanek, Sanja Grubeša, Ivan Djurek and Antonio Petošić</i>	884

Monday, September 9

21 E - Urban Sound Planning

Dynamic approach for the study of the spatial impact of road traffic noise at peak hours <i>Arnaud Can, Pierre Aumond, Cécile Becarie and Ludovic Leclercq</i>	891
Interactive soundscape augmentation of an urban park in a real and virtual setting <i>Timothy van Renterghem, Kang Sun, Karlo Filipan, Kris Vanhecke, Toon de Pessemier, Bert de Coensel, Wout Joseph and Dick Botteldooren</i>	899

The Potential of Being the Quiet Place of the Khans Courtyards in Istanbul Historic Peninsula <i>Gülşen Akın Güler, Aslı Özçevik Bilen, Massimiliano Masullo and Luigi Maffei</i>	904
--	-----

Monday, September 9

21 K - Wind Turbine Noise

The use of Synthesised or Actual Wind Turbine Noise for Subjective Evaluation Purposes <i>Steven Cooper</i>	912
A Simplified Method for Determination of "Amplitude Modulation" of Audible and Inaudible Wind Turbine Noise <i>Steven Cooper</i>	920
A comparison of Inaudible Windfarm Noise and the Natural Environment Noise whilst Monitoring Brainwaves and Heart Rate <i>Steven Cooper</i>	928
Non-acoustic and acoustic variables associated with wind turbine noise annoyance <i>Jenni Radun and Valtteri Hongisto</i>	935

Monday, September 9

25 A - Sound fields for special purposes and transducer design

Study of the sound field in thin polymer films induced by High-Intensity Focused Ultrasound <i>Coralie Koo Sin Lin, Marko Liebler and Klaus-V. Jenderka</i>	941
Acoustic design principles for energy efficient excitation of a high intensity cavitation zone <i>Örjan Johansson, Taraka Rama Krishna Pamidi, Vijay Shankar and Torbjörn Löfqvist</i>	948
Small-Sized Acoustic Resonators for Ultrasound in Air <i>Tobias Merkel, Jürgen Harpain, Norbert Gorenflo and Jonas Stein</i>	956
Multifrequency ultrasonic transducers with spatially distributed stop band material <i>Johannes Henneberg, Simone Preuss, André Gerlach and Steffen Marburg</i>	962
Ultrasonic sensor based on phononic crystals <i>Paul Wasmer, Jannis Bulling and Jens Prager</i>	969
Design of Resonant Vacuum Pressure Sensor with CMUT for High Sensitivity and Linearity <i>Xiaoli Zhang, Lu Yu, Haixia Yu and Dachao Li</i>	977
Determination of frequency dependent Ultrasound Absorption by means of Radiation Force based Power Measurements <i>Tina Fuhrmann, Konrad Mehle, David Waltschew and Klaus-V. Jenderka</i>	985
Effective modeling of elastic waves for haptic surface interaction <i>Sebastian Wöckel, Michael Simon and Ulrike Steinmann</i>	993
Vibro-tactile displays for stimulating surface impressions <i>Andreas Sebastian Schmelt, Eike Christian Fischer, Viktor Hofmann, Jens Twiefel and Marc Christopher Wurz</i>	1000
Acoustic Holograms for Particle Assembly and Fabrication <i>Kai Melde, Zhichao Ma, Korbinian Pöppel and Peer Fischer</i>	1008
Precise airborne sound field characterization using a miniaturized laser interferometer of 1 MHz bandwidth <i>Ryan Sommerhuber</i>	1009

Monday, September 9

26 A - Metrology

Absorbing target for radiation force measurements below 1 MHz <i>Megan Jenkinson and Andrew Hurrell</i>	1010
Validation of Reflectance-Based Fiber-Optic Hydrophones <i>Sam Howard and Claudio Zanelli</i>	1018
Measurement Parameters for the characterization of unfocused Extracorporeal Pressure Pulse Sources - Standardization of Biomedical Equipment <i>Friedrich Ueberle</i>	1024
EURAMET EMPIR 18HLT06 RaCHy Project: Radiotherapy coupled with Hyperthermia (Induced by HITU) <i>Giovanni Durando, Piero Miloro, Volker Wilkens, Baki Karaboce, Jacco de Pooter, Gerard van Rhoon, Gail Ter Haar, Barbara Caccia, Antonello Spinelli, Antonia Denkowa and Roeland Dijkema</i>	1032

Tuesday, September 10

Tuesday, September 10

02 D - Loudspeaker arrays and sound field control

Audio Spotlight using Subdivided AM Sideband Wave Delivery from Separate Ultrasonic Array Speakers <i>Kazuhiro Kondo and Shinichiro Osanai</i>	1037
Evaluation of Thermal Runaway Control Based on Frequency Modulated Carrier Wave in Parametric Array Loudspeaker <i>Kairi Mori, Masato Nakayama and Takanobu Nishiura</i>	1045
Three-dimensional Resonance Control Based on Spatial Wave Synthesis with Parametric Array Loudspeaker <i>Shiori Sayama, Masato Nakayama and Takanobu Nishiura</i>	1053
Demodulation Distance Control Based on Analytic Model between Film Gas-lens Depth and Demodulation Distance for Parametric Array Loudspeaker <i>Toshihiro Fujii, Masato Nakayama and Takanobu Nishiura</i>	1061
Development of Multi-way Parametric Array Loudspeaker Using Multiplexed Double Sideband Modulation <i>Yuting Geng, Yusei Nakano, Masato Nakayama and Takanobu Nishiura</i>	1069
Design of a directive source using the radiation mode method and a sound zone algorithm <i>Manuel Melon, Maryna Sanalatii, Philippe Herzog, Régine Guillermin, Nicolas Poulain and Jean Christophe Le Roux</i>	1077
Models of spherical and rectangular cuboid loudspeaker arrays <i>Franz Zotter and Hannes Pomberger</i>	1085
Reproduction of Multichannel Audio by Frame Loudspeaker Array <i>Yuta Kakuzaki and Akio Ando</i>	1093
Three-Dimensional Spatial Active Noise Control Based on Kernel-Induced Sound Field Interpolation <i>Hayato Ito, Shoichi Koyama, Natsuki Ueno and Hiroshi Saruwatari</i>	1101
On in situ beamforming in an automotive cabin using a planar loudspeaker array <i>Martin Bo Møller and Martin Olsen</i>	1109
Minimum Trap Separation for Acoustical Levitation Using Phased Ultrasonic Transducer Arrays <i>Carl Andersson and Jens Ahrens</i>	1117
Spatial sound field reproduction using deep neural networks <i>Thushara Abhayapala and Hanchi Chen</i>	1124
2.5D Local Wave Field Synthesis of a Virtual Plane Wave Using a Time Domain Representation of Spherical Harmonics Expansion <i>Nara Hahn, Fieter Winter and Sascha Spors</i>	1132
How the distance and radius of two circular loudspeaker arrays affect sound field reproductions and directivity controls <i>Yi Ren and Yoichi Haneda</i>	1140
The EMPAC High-Resolution Modular Loudspeaker Array for Wave Field Synthesis <i>Johannes Goebel</i>	1148
A Field-Matching Method for Sound Field Synthesis for Large Scale Sound Reinforcement Systems <i>Elena Shabalina</i>	1156
Adjoint-based sound reinforcement in the time domain <i>Lewin Stein, Florian Straube, Jörn Sesterhenn, Stefan Weinzierl and Mathias Lemke</i>	1162
Full scale outdoor concert adaptive sound field control <i>Jonas Brunskog, Franz Maria Heuchel, Diego Caviedes Nozal, Minho Song, Finn T. Agerkvist, Efrén Fernandez-Grande and Enrico Gallo</i>	1170

Table of Contents - ICA 2019 / EAA Euroregio

Adapting transfer functions to changes in atmospheric conditions for outdoor sound field control <i>Franz Maria Heuchel, Diego Cavedes Nozal, Efren Fernandez-Grande, Jonas Brunskog, Finn T. Agerkvist and Peter Gerstoft</i>	1178
---	------

Tuesday, September 10

04 A - Prediction methods for sound insulations 2

Components of Variation in Reverberation Time Measurement - Part 2: Field Testing Rooms of Heavyweight Construction <i>Bill Whitfield</i>	1184
Airborne Sound Transmission Modeling of Walls based on Random Point Process Theory <i>Cédric van Hoorickx and Edwin Reynders</i>	1192
Prediction of the sound transmission loss of two-dimensional periodic structures with a hybrid framework <i>Carolina Decraene, Edwin Reynders and Geert Lombaert</i>	1200
Acoustic topology optimization of the material distribution on a simply supported plate <i>Jan van den Wyngaert, Mattias Schevenels and Edwin Reynders</i>	1208
Adaptation of the Equivalent-Fluid Model to the Additively Manufactured Acoustic Porous Materials <i>Kamil C. Opiela and Tomasz G. Zielinski</i>	1216
Sound Insulation of Monolithic or Laminated Single- and Double-Glazing Panels <i>Fangliang Chen, Yihe Huang and Tejav Deganyar</i>	1224

Tuesday, September 10

04 D - Structure-borne sources in buildings

Single rig two-stage method for characterizing structure-borne sound sources in buildings <i>Barry Marshall Gibbs</i>	1232
Experimental investigation of a single reception plate method to obtain two source quantities required to predict structure-borne sound transmission in buildings <i>Fabian Schöpfer, Andreas Mayr and Ulrich Schanda</i>	1240
Prediction of Maximum Fast Time-Weighted Sound Pressure Levels from Time-Varying Structure-Borne Sound Sources in Heavyweight Buildings <i>Steffi Reinhold, Carl Hopkins and Gary Seiffert</i>	1248
In-plane excitation of reception plates according to DIN EN 15657:2017 <i>Ulrich Schanda, Michael Hoßfeld, Fabian Schöpfer and Andreas Mayr</i>	1255
Extraction of high contributing sound of Air Handling Unit and noise reduction using transfer path analysis <i>Takuya Hirao, Yosuke Miyamoto and Junji Yoshida</i>	1263
Experimental Validation of a Finite Element Model for a Heavy Impact from the Standard Rubber Ball on a Timber Floor <i>Xiaoxue Shen and Carl Hopkins</i>	1271
Structure-borne sound sources in timber buildings - prediction of machinery noise using measured transmission functions <i>Fabian Schöpfer, Andreas Mayr and Ulrich Schanda</i>	1278

Tuesday, September 10

04 F - Advanced measurement techniques in building acoustics

Measurement of the bending stiffness of masonry walls by using time-frequency analysis: Practical considerations and validation <i>Charlotte Crispin and Christian Mertens</i>	1286
---	------

Table of Contents - ICA 2019 / EAA Euroregio

Benchmarking of Methods for the Identification of Flexural Wavenumbers in Wooden Plates <i>Federica Morandi, Olivier Robin, Luca Barbaresi, Massimo Garai, Noureddine Atalla, Nicolas Quaegebeur and Patrice Masson</i>	1294
Using near-field acoustic measurements to characterise mechanical and acoustic properties of lightweight building structures <i>Andrea Santoni, Patrizio Fausti and Paolo Bonfiglio</i>	1302
Structural reverberation time measurements on WOODSOL prototype <i>Simone Conta, Ulrich Simon and Anders Homb</i>	1310
Bending wave based characterization of viscoelastic materials <i>Max Miller, Sadeq Malakooti, Tahereh Taghvaei, Ning Xiang, Hongbing Lu and Nicholas Leventis</i>	1318
An indirect method for the measurement of impact sound insulation <i>Simon Bailhache, Stéphanie Colin and Michel Villot</i>	1323
Continuing Prediction of Heavy/Hard Impacts on Resilient Sports Floors in Existing Buildings <i>Matthew Golden and Faiz Musafere</i>	1329
Structure-Borne Sound Isolation of Acoustic Test Chambers: In-Situ Validation <i>Abhay Rajmane</i>	1336
Qualification of an Anechoic Chamber <i>Anthony Nash</i>	1343
Sound Absorption Measurement Method using Ensemble Averaging Technique: A Robust Method for Surface Impedance Including in-situ Applications <i>Otsuru Toru, Reiji Tomiku, Siwat Lawanwadeekul, Daiki Matsuoka and Ryota Yoshimoto</i>	1350
Measurement of Oblique-Incidence Absorption Coefficients of Various Types of Absorbing Materials in a Thin Chamber <i>Tetsuya Sakuma, Naohisa Inoue and Yuta Sakayoshi</i>	1358
Advanced Investigation Using The EApu Method on the Effect of Quantitation and Particle Size of Charcoal in Clay Bricks on Sound Absorption Coefficient <i>Siwat Lawanwadeekul, Otsuru Toru, Reiji Tomiku and Hiroyasu Nishiguchi</i>	1366
A Measurement Technique of Sound Absorption Coefficient and Impedance Using an Impedance Tube and Two Cardioid Microphones <i>Kazuma Hoshi and Toshiki Hanyu</i>	1373
A new technique for measuring sound particle velocity and sound pressure using face-to-face cardioid microphones <i>Toshiki Hanyu and Kazuma Hoshi</i>	1381
Airflow Resistance Measurements between Room Temperature and 800 C <i>Thamasha Samarasinghe, Carl Hopkins, Gary Seiffert and Jilly Knox</i>	1387

Tuesday, September 10

04 H - Insulating and absorbing materials made from renewables 1

Experimental characterisation of absorbing materials made from renewables <i>Volker Wittstock and Daniel Sgriess</i>	1394
Investigations regarding the Influence of Static Load and Airflow Resistance on the Measurement of Dynamic Stiffness <i>Heinrich Bietz, Martin Schmelzer, Volker Wittstock and Spyros Brezas</i>	1402
Insulation materials made of renewable raw materials for the sound insulation prognosis of building components <i>Simon Mecking, Andreas Rabold and Anton Huber</i>	1410

Tuesday, September 10

06 C - Philosophy in Acoustics

How does what we hear sound? The qualia problem in acoustics <i>Michael Haverkamp</i>	1418
Alexa, Siri and more: The impact of speech recognition on social behaviour and our responsibility as its creators <i>Andrea Ebner</i>	1426
The inner voice <i>Monika Gatt, Marcus Maeder and Steffen Marburg</i>	1430

Tuesday, September 10

09.1 C - Perception of and responses to infrasound and low-frequency sound including wind turbines

How do audio and visual characteristics of wind turbines contribute to noise annoyance? <i>Beat Schäffer, Reto Pieren, Ulrike Wissen Hayek, Nadine Biver and Adrienne Grêt-Regamey</i>	1437
Implementation Of The Issue Of Noise From Wind Turbines At Low Frequencies <i>Martino Marini, Costantino Carlo Mastino, Roberto Baccoli, Andrea Frattolillo and Antonino Di Bella</i>	1441
Pilot study on perceived sleep acceptability of low-frequency, amplitude modulated tonal noise <i>Kristy Lee Hansen, Phuc Nguyen, Branko Zajamsek, Gorica Micic and Peter Catcheside</i>	1447
Epidemiological study on long-term health effects of low-frequency noise produced by wind power stations in Japan <i>Tatsuya Ishitake, Yoshitaka Morimatsu and Kunio Hara</i>	1455
Perception of low-frequency components contained in general environmental noises including wind turbines <i>Sakae Yokoyama and Tomohiro Kobayashi</i>	1463
How to present pure-tone infrasound to the ear <i>Holger Joost, Björn Friedrich, Jesko Verhey and Thomas Fedtke</i>	1470
Frequency characteristics of oppressive and vibratory feeling to low-frequency sound <i>Makoto Morinaga, Ippei Yamamoto, Tomohiro Kobayashi, Koichi Makino, Hiroaki Ochiai and Hideki Tachibana</i>	1478
The effect of brown and black noise on persons suffering from a low frequency sound <i>Frits van den Berg and Karin de Boer</i>	1484
Equal annoyance contours at frequencies 4 - 1000 Hz <i>Ville Rajala, Jarkko Hakala and Valterti Hongisto</i>	1492
Portable Infrasound Monitoring Device with Multiple MEMS Pressure Sensors <i>Ryouichi Nishimura, Zhenglie Chi and Yôiti Suzuki</i>	1498
Infrasound research activities in Kochi University of Technology - Infrasound observation network by using multiple comprehensive infrasound sensors and its application for disaster mitigation as well as safe human life - <i>Masa-Yuki Yamamoto</i>	1506

Tuesday, September 10

09.1 F - Contribution of the number of events and other traffic conditions to annoyance

Short-term annoyance from nocturnal aircraft noise in children: The influence of acoustical and non-acoustical factors <i>Julia Quehl, Susanne Bartels, Rolf Fimmers and Daniel Aeschbach</i>	1511
--	------

Table of Contents - ICA 2019 / EAA Euroregio

Noise-induced Annoyance due to Nocturnal Road Traffic: Results of a Field Study <i>Sarah Weidenfeld, Eva-Maria Elmenhorst, Sarah Sanok, Uwe Müller and Daniel Aeschbach</i>	1513
Effects of The Number of Noise Events from SHINKANSEN Railway on Annoyance <i>Keiji Yagawa, Ayumi Shiotani, Toshihiko Matsui and Takashi Yano</i>	1515
Leq + X: Re-Assessment of exposure-response relationships for aircraft noise annoyance and disturbances to improve explained variance <i>Julia Haubrich, Mark Brink, Rainer Guski, Ullrich Isermann, Beat Schäffer, Rainer Schmid, Dirk Schreckenberger and Jean Marc Wunderli</i>	1523
Do we need different aircraft noise metrics to predict annoyance for different groups of people? <i>Jan Spilski, Kirstin Bergström, Ulrich Möhler, Thomas Lachmann and Maria Klatte</i>	1531

Tuesday, September 10

09.2 C - Cardiovascular effects

Aircraft noise exposure and saliva cortisol in a pooled-analysis from seven European countries <i>Clémence Baudin, Marie Lefevre, Jenny Selander, Wolfgang Babisch, Ennio Cadum, Marie-Christine Carlier, Patricia Champelovier, Konstantina Dimakopoulou, Danny Huithuijs, Jacques Lambert, Bernard Laumon, Goran Pershagen, Töres Theorell, Venetia Velonaki, Anna Hansell and Anne-Sophie Evrard</i>	1539
Association Between Transportation Noise and Cardio-metabolic Diseases: an Update of the WHO Meta-analysis <i>Danielle Vienneau, Ikenna Eze, Nicole Probst-Hensch and Martin Röösli</i>	1543

Tuesday, September 10

10 F - Railway noise

The Application of Dither for Suppressing Curve Squeal <i>Wolfgang Kropp, Arthur Aglat, Jannik Theysen and Astrid Pieringer</i>	1551
The Effects of Weather Conditions and Wheel Wear on Curve Squeal <i>Thomas Maly, Florian Biebl and Michael Ostermann</i>	1559
Another Halving of Rail Freight Traffic Noise by Wheel Absorber <i>Martin Fehndrich</i>	1567
Pass-By Noise Source Identification for Railroad Cars using Array Measurements <i>Hans Rudolf Graf and Christian Czolbe</i>	1574
Rail roughness surveys - a tool for effective environmental noise control <i>Lisette Mortensen and Stig Junge</i>	1582

Tuesday, September 10

10 G - Aircraft noise

Aircraft noise: Conversion of an existing to a desired number of subtracks with identical lateral dispersion to obtain smooth noise contours <i>Olivier Schwab</i>	1590
SonicBAT: Some Highlights and Subsequent Developments <i>Victor W. Sparrow, Trevor Stout, Kevin Bradley and Christopher Hobbs</i>	1592
Calculation of the Fan Rotational Speed Based on Flyover Recordings for Improving Aircraft Noise Prediction Models <i>Roberto Merino-Martinez, Mirjam Snellen and Dick G. Simons</i>	1600
Numerical and Experimental Investigation of the Turbofan First Booster Stage Tone Noise <i>Victor Mileshin, Sergey Pankov and Anton Rossikhin</i>	1608

Tuesday, September 10

11 D - Advances in noise mapping engineering methods

Quality assurance methods demonstrated with the calculation of sound propagation with ISO 9613-2 and with CNOSSOS-EU <i>Wolfgang Probst</i>	1616
Meta-Modeling for urban noise mapping <i>Antoine Lesieur, Pierre Aumond, Vivien Mallet and Arnaud Can</i>	1624
Global sensitivity analysis for urban noise modelling <i>Pierre Aumond, Arnaud Can, Vivien Mallet, Benoît Gauvreau and Gwenaël Guillaume</i>	1632
Estimating of dose-response relationship of Shinkansen railway noise using noise mapping <i>Yasuhiro Hiraguri, Akinori Fukushima, Takashi Morihara and Shigenori Yokoshima</i>	1639
Uncertainty analysis for the in situ sound power level determination using the substitution method <i>Spyros Brezas and Volker Wittstock</i>	1647

Tuesday, September 10

11 E - Environmental sound auralisation

Future Low-Noise Aircraft Technologies and Procedures - Perception-based Evaluation using Auralised Flyers <i>Reto Pieren, Lothar Bertsch, Demian Lauper and Beat Schäffer</i>	1654
Auralization of Aircraft Noise in an Urban Environment <i>Roalt Aalmoes, Maurits van der Veen and Henk Lania</i>	1659
Physically-Based Auralization of Railway Rolling Noise <i>Julien Maillard, Abbas Kacem, Nadine Martin and Baldrik Faure</i>	1667
A Parametric Method to Synthesize Wind Turbine Sounds <i>Pontus Thorsson</i>	1675
Analysing the Effectiveness of Approaches to Auralisation for Applications in Environmental Acoustics <i>Alex Southern, Frank Stevens and Damian Murphy</i>	1683
Auralisations for Outdoor Noise Sources <i>Per Finne, Erik Thysell and Christian Weirum Claumarch</i>	1691
Audiovisual simulation inside the residential rooms of roadside buildings <i>Asakura Takumi and Riku Hashimoto</i>	1697
Traffic Flow Auralisation based on Single Vehicle Pass-by Noise Synthesis <i>Yang Fu, Damian Murphy and Alex Southern</i>	1705
Progressive region-of-interest filtering for urban sound auralization applications with multiple reflected and diffracted propagation paths <i>Jonas Stienen and Michael Vorländer</i>	1713
Sound insulation auralization filters design for outdoor moving sources <i>Imran Muhammad, Anne Heimes and Michael Vorländer</i>	1721

Tuesday, September 10

12 C - Speech processing for normal-hearing and hearing-impaired listeners

Acoustically transparent sound presentation in hearing devices: algorithms, devices and models <i>Simon Doclo, Henning Schepker, Florian Denk, Reinhild Roden, Matthias Blau and Birger Kollmeier</i>	1729
Cochlear-Implanted Children's Perception of Mandarin Tones in Normal Speech and Whispered Speech <i>Xin Ding and Wentao Gu</i>	1731

Table of Contents - ICA 2019 / EAA Euroregio

How the temporal amplitude envelope of speech contributes to urgency perception <i>Masashi Unoki, Miho Kawamura, Maori Kobayashi, Shunsuke Kidani and Masato Akagi</i>	1739
Restoring Lost Speech Components with Generative Adversarial Networks for Speech Communications in Adverse Conditions <i>Nengheng Zheng, Yupeng Shi, Yuyong Kang and Qinglin Meng</i>	1745
Vocal Emotion Recognition in Mandarin-Speaking Cochlear Implanted Children <i>Haitao Guan and Wentao Gu</i>	1752
Intelligent background sound event detection and classification based on WOLA spectral analysis in hearing devices <i>Feifan Lai and Kaibao Nie</i>	1759
Maximum Expanded Measurement Uncertainty: Hearing Aids <i>Zemar Martins Defilippo Soares, Isabella Florêncio Cruz Da Silva and Nelson Mello Do Espírito-Santo</i>	1767
A pilot study of the relationship between mandarin chinese word and sentence recognition for the elderly <i>Jianxin Peng, Jiazhong Zeng and Jiamin Liu</i>	1775

Tuesday, September 10

13 B - Flow acoustics of the human phonation

Acoustic Source Term Interpolation in Hybrid Aeroacoustic Simulation of Human Phonation <i>Michael Weitz, Stefan Schoder, Paul Maurerlehner, Sebastian Falk, Michael Döllinger and Manfred Kaltenbacher</i>	1780
Acoustic characterization of an averaged vocal tract model based on the MRI data of professional tenors <i>Judith Probst, Alexander Lodermeier, Sahar Fattoum, Matthias Echternach, Stefan Becker and Stefan Kniesburges</i>	1788
Influence of the vocal tract on voice directivity <i>Rémi Blandin and Manuel Brandner</i>	1795
Finite Element Simulation of /asa/ in a Three-Dimensional Vocal Tract using a Simplified Aeroacoustic Source Model <i>Marc Arnela and Oriol Guasch</i>	1802
Glottal Opening Measurements in VCV and VCCV Sequences <i>Yves Laprie, Benjamin Elie, Angélique Amelot and Shinji Maeda</i>	1810
Modeling the pre-phonatory vocal fold posture in the larynx model SynthVOICE <i>Stefan Kniesburges, Reinhard Veltrup, Sahar Fattoum and Anne Schützenberger</i>	1816

Tuesday, September 10

13 C - Fan noise

Analysis of Sound Source Localization in an Axial Fan <i>Seyed Mohsen Alavi Moghadam, Matthias Meinke and Wolfgang Schröder</i>	1818
Prediction Methodology of Broadband Noise from a Cooling Fan <i>Soichi Sasaki</i>	1820
Numerical Investigation of Hydrodynamic/Acoustic Splitting Methods in Finite Volumes including Rotating Domains <i>Joscha Piepiorka and Otto von Estorff</i>	1827
Vortex sound based calculations for the aeroacoustic noise of a centrifugal fan <i>Hakan Dogan, Martin Ochmann, Chris Eisenmenger and Stefan Frank</i>	1835
Experimental Investigation of the Influence of different Leading Edge Modifications on the Sound Emission of Axial Fans downstream of a Heat Exchanger <i>Felix Czwielong, Florian Krömer, Chaitanya Paruchuri and Stefan Becker</i>	1843

Table of Contents - ICA 2019 / EAA Euroregio

Aeroacoustic Simulation and Experimental Validation of Sound Emission of an Axial Fan Applied in a Heat Pump <i>Andreas Lucius, Marc Schneider, Stefan Schweitzer-De Bortoli, Tom Gerhard and Thomas Geyer</i>	1851
Experimental investigation of the noise reduction of a plug fan with leading-edge serrations <i>Ignacio Zurbano-Fernandez, Alain Guedel and Mirela Robitu</i>	1859
Computational Aeroacoustics of an Axial Fan with Leading Edge Serrations <i>Stefan Schoder, Florian Krömer, Michael Weitz, Manfred Kaltenbacher and Stefan Becker</i>	1867
Aeroacoustic evaluation of the forward-curved fan inlet flow <i>Jurij Gostiša, Tadej Novaković, Jurij Prezelj and Marko Hočevar</i>	1874
Influence of the Mesh Size on the Aerodynamic and Aeroacoustics of a Centrifugal Fan using the Lattice-Boltzmann Method <i>Rebecca Schaefer and Martin Boehle</i>	1882
Research on Aerodynamic Noise Calculation and Noise Reduction Design of Multi-blade Centrifugal Fan <i>Jin An Huang, Yang Xiang and Chaojun Jiang</i>	1890

Tuesday, September 10

14 B - Sound propagation and Monitoring in Underwater Acoustics

Towards a Realistic Approach of Sound Propagation in EIAs: How to Represent Moving Sources and Moving Receivers <i>Uwe Stöber, Lars O. Mortensen and Frank Thomsen</i>	1898
A Computational Investigation into the Influence of the Shear Properties of the Seabed on Sound Propagation in Shallow Water. <i>Ray Kirby and Wenbo Duan</i>	1902
Three-dimensional acoustic parabolic equation model based on GPU processing <i>Keunhwa Lee, Woojae Seong and Youngnam Na</i>	1910
The Analysis of Parabolic Equation Model Solutions using Split-Step/ Finite Difference Method <i>Mustafa Aslan</i>	1913
Parallel implementation for Three-Dimensional Acoustic Field Computation in a Penetrable Wedge by Image Source Method <i>Wenbin Xiao, Yongxian Wang, Wei Liu, Qiang Lan, Xinghua Cheng, Zijie Zhu, Xin Wang, Ben Luo, Dezhi Wang, Jiani Wu and Lilun Zhang</i>	1921
Sound propagation experiments in a Norwegian fjord <i>Jan Abshagen and Volkmar Nejedl</i>	1929
An Underwater Vehicle Shape with Reduced Acoustic Backscatter <i>Tom Avsic</i>	1935
Development of Underwater Acoustic Transducers <i>Yang Liu, Houlin Fang, Liangyong Zhang, Fang Zhang and Deyu Sun</i>	1943
Analysis of Displacement Amplification Characteristics of Class IV Flextensional Shell Based on Elliptic Perimeter Approximation Formula <i>Houlin Fang, Difeng Sun, Fang Zhang, Yang Liu, Tianqing Zhao, Cheng Zhang, Liangyong Zhang, Xubin Liang and Deyu Sun</i>	1948
Passive Ship Localization in a Shallow Water Using Pre-trained Deep Learning Networks <i>Dezhi Wang, Lilun Zhang, Changchun Bao, Shuqing Ma and Yongxian Wang</i>	1956

Tuesday, September 10

15 B - Numerical methods for acoustic materials and metamaterials

Uncertain acoustic meta-atoms <i>Felix Kronowetter and Steffen Marburg</i>	1963
Modeling sound transmission through a periodic acoustic metamaterial grating of finite size <i>Xiang Yu, Fangsen Cui and Wei Hin Mark Wong</i>	1971
Development of a metamaterial for acoustic and architectural improvement of window design. <i>Gioia Fusaro, Xiang Yu, Fangsen Cui and Jian Kang</i>	1977
Prediction of oblique incidence sound absorption coefficient for microfiber sound absorber <i>Tatsuhiko Komito, Senji Kitahara and Toshimitsu Tanaka</i>	1984
Off-line Envelope Estimation for Acoustic Screens with Uncertain Properties <i>Mathieu Gaborit, Olivier Dazel and Peter GÖransson</i>	1992
Double Reflections from corrugated surfaces <i>Jorge Petrosino, Nicolas Casais Dassie, Damian Andres Fernández and Georgina Alejandra Lizaso</i>	2000
Finite element analysis on the surface characteristics of acoustic resonators with thermal and viscous boundary layers <i>Naohisa Inoue and Tetsuya Sakuma</i>	2005

Tuesday, September 10

16 C - Trends in health and safety in the musician's workplace with regard to sound exposure levels

Face the Music: A 12 year study of the sound of performance and hearing of classical music <i>Stephen Dance, Douglas John Shearer and Georgia Zepidou</i>	2013
The exposure of musicians to sound assessed by two-channel noise dosimetry <i>Agnieszka Pietrzak and Jan Zera</i>	2021
Symphony Orchestra Musicians: Reduction of Sound Exposure by Physical Measures <i>Remy Wenmaekers, Bareld Nicolai, Maarten Hornikx and Armin Kohlrausch</i>	2029
Discriminability of high-resolution audio with regard to the quantization accuracy <i>Masanobu Miura</i>	2030
Reducing the sound exposure level in an orchestra pit by a set of tailored measures <i>Anton Schlesinger, Martin Tschalkner, Martin Ochmann, Jan Michael Kimmich, Stefan Frank and Axel Schlicksupp</i>	2033

Tuesday, September 10

17 C - Aeroacoustics and noise control

Effect of Acoustic Treatment on Fan Flutter Characteristics <i>Yu Sun, Xiaoyu Wang and Xiaofeng Sun</i>	2041
An Immersed Boundary Method for Fluid-Structure-Acoustics Interaction at Low Reynolds Numbers <i>Li Wang, Fangbao Tian and Joseph C.S. Lai</i>	2049
Theoretical Model for the Prediction of Sound Radiated from Unbaffled Long Enclosure with Ground Effect <i>Weiping Yang and Yat-Sze Choy</i>	2057
Numerical and Experimental Investigation of the Generation of Wind Noise in Hearing Aids <i>Jörg Riedel, Florian Krömer, Hartmut Ritter, Kevin Bayer, Jonathan Tamil, Dietmar Lommel and Stefan Becker</i>	2065
Experimental Investigation of the oscillating flow dynamics at the exit of regenerator meshes with different configurations <i>Islam Ramadan, Helene Bailliet and Jean-Christophe Valiere</i>	2066

Tuesday, September 10

17 D - Acoustic Metamaterials 1

An Integration Strategy for Acoustic Metamaterials to Achieve Absorption by Design <i>Ping Sheng</i>	2074
Modeling and characterization challenges of multiple dynamics materials (also known as metamaterials) <i>Luc Jaouen, Fabien Chevillotte and François-Xavier Bécot</i>	2075
Random Incidence Transmission Loss of Miniature Helmholtz Resonator Embedded Acoustic Meta-material <i>Jhalu Gorain and Chandramouli Padmanabhan</i>	2083
An Analytical Model for Broadband Sound Transmission Loss of a Finite Single Leaf Wall Using a Two Degree of Freedom Resonant Metamaterial <i>Javier Hernan Vazquez Torre, Jonas Brunskog and Vicente Cutanda Henriquez</i>	2091
Topological bound states in mechanical graphene <i>Johan Christensen</i>	2099
Experimental Observation of Topological Fano Resonances for Audible Sound <i>Farzad Zangeneh-Nejad and Romain Fleury</i>	2100

Tuesday, September 10

17 E - Acoustics of holes and dampers with mean flow

Experimental investigation of intrinsic thermoacoustic instabilities in a combustion chamber terminated by a variable aperture <i>Manmohan Vishwakarma, Sathesh Mariappan and Maria Heckl</i>	2104
The acoustic absorption coefficient of short circular holes sustaining a high Reynolds number bias flow <i>Renaud Gaudron and Aimee Morgans</i>	2112
Characterization of the aeroacoustic instability in a T- junction <i>Claire Bourquard, Abel Faure and Nicolas Noiray</i>	2120
Acoustic scattering in arrays of orifices, slits and tube rows with mean flow: A comparison <i>Charles Boakes, Aswathy Surendran, Dong Yang and Aimee Morgans</i>	2126
Prediction of Acoustic Response of Tube-rows with Bias-flow Using Linearized Navier-Stokes Equations in Frequency Domain <i>Wei Na, Susann Boij, Aswathy Surendran, Dong Yang and Aimee Morgans</i>	2134
An impedance model for thin microperforated panels <i>Xianhui Li, Tuo Xing, Liying Zhu, Congshuang Jiang, Wenjiang Wang and Bin Zhang</i>	2142
Sound generation by entropy perturbations passing through short circular holes <i>Dong Yang, Juan Guzmán and Aimee Morgans</i>	2149

Tuesday, September 10

18 D - Binaural models: Algorithms and applications

A likelihood based decoding mechanism for two-channel localization models <i>Jörg Encke, Werner Hemmert and Mathias Dietz</i>	2157
Speech-in-noise performances in virtual cocktail party using different non-individual Head Related Transfer Functions <i>Lorenzo Picinali, Maria Cuevas-Rodriguez, Daniel Gonzalez-Toledo and Arcadio Reyes-Lecuona</i>	2158
Information-based Source Localization with Distinct Binaural Cues <i>Patrick Danes</i>	2160
Human Perception of Dichotic High-Frequency Complex Sounds simulated with a two-channel Count Comparison Model <i>Jonas Klug, Lisa Schmors, Go Ashida and Mathias Dietz</i>	2168

Table of Contents - ICA 2019 / EAA Euroregio

Predicting Externalization of Anechoic Sounds <i>Robert Baumgartner and Piotr Majdak</i>	2169
Effects of Target Speech Distance on Auditory Spatial Attention in Noisy Environment <i>Shuichi Sakamoto, Florent Monasterolo, Cesar Salvador, Zhenglie Cui and Yôiti Suzuki</i>	2177
Integrating interaural differences of time and level across frequencies and with each other in a precedence effect model <i>M. Torben Pastore and Jonas Braasch</i>	2182
On the evaluation of head-related transfer functions with probabilistic auditory models of human sound localization <i>Michele Geronazzo, Roberto Barumerli and Federico Avanzini</i>	2190
A Binaural Model Predicting The Effect of Hearing Impairment and Noise Level on Speech Intelligibility <i>Thibault Vicente, Mathieu Lavandier and Jörg M. Buchholz</i>	2197
Binaural Processing in a New Cochlear-Implant Paradigm Inserting Extra Pulses with Short Inter-Pulse Intervals <i>Martin Lindenbeck, Piotr Majdak and Bernhard Laback</i>	2202
Evaluation of an ILD-based hearing device algorithm using Virtual Sound Environments <i>Ruksana Giurda, Laurent S. R. Simon, Hannes Wüthrich and Norbert Dillier</i>	2210
The 3D Tune-In Toolkit: A C++ library for binaural spatialisation, and hearing loss/hearing aids emulation <i>Arcadio Reyes-Lecuona, Maria Cuevas-Rodriguez, Daniel Gonzalez-Toledo, Carlos Garre, Ernesto De-La-Rubia-Cuestas, Luis Molina-Tanco, Angel Rodriguez-Rivero and Lorenzo Picinali</i>	2217

Tuesday, September 10

18 F - Compensation strategies in cochlear implants

Improving ITD coding with bilateral cochlear implants through temporal enhancement <i>Bernhard U. Seeber, Monika-Maria Oster and Aswin Wijetillake</i>	2219
Electrophysiological and Psychophysical Measures of Amplitude Modulation Discrimination Interference in Cochlear Implant Users <i>Deborah Vickers, Brian C. J. Moore, Patrick Boyle, Josef Schlittenlacher, Lindsey van Yper and Jaime Undurraga</i>	2220
Spectral Blurring in Cochlear Implants: Association with Channel Interaction and Effects on Speech-in-Noise Perception <i>Tobias Goehring, Julie G. Arenberg and Robert P. Carlyon</i>	2227
Coding of Electrical Stimulation Patterns for Binaural Signal Processing in Cochlear Implants <i>Waldo Nogueira, Tom Gajecski, Reemt Hinrichs and Jörn Ostermann</i>	2235
Spatial Release From Masking in Bilateral Cochlear Implant Users listening to the Temporal Limits Encoder Strategy <i>Alan Kan and Qinglin Meng</i>	2236
Influence of asymmetric processing delays on the localization ability of bimodal CI/HA users <i>Stefan Zirn, Julian Angermeier and Thomas Wesarg</i>	2243
Benefits and Challenges of Bimodal Hearing in Children <i>Melissa Polonenko</i>	2249

Tuesday, September 10

18 L - How learning alters auditory processing: brainstem to cortex

Speech sound training alters auditory processing in rats <i>Crystal T Engineer</i>	2252
Effects of Short-term Training on Attentional Modulation of Neural Phase <i>Adam Tierney, Fred Dick and Aeron Laffere</i>	2258

Tuesday, September 10

20 C - Recent advances in sound absorption and diffusion of materials/devices

Design of a New Testing Chamber to Determine the Absorption, Diffusion and Scattering Coefficients <i>Peter D'Antonio, Mélanie Nolan, Efrén Fernandez-Grande and Cheol-Ho Jeong</i>	2259
3D Printed Quadratic Residue Metadiffuser - Design and Measurements of an Optimized Deep-Subwavelength Sound Diffuser <i>Eric Ballesteró, Vicente Romero García, Noé Jiménez, Jean Philippe Groby, Stephen Dance and Haydar Aygun</i>	2267
Beyond phase grating diffusers using locally-resonant metamaterials <i>Noé Jiménez, Trevor Cox, Jean Philippe Groby and Vicente Romero García</i>	2270
Perfect acoustic absorption in deep sub-wavelength structures for the ventilation problems with degenerate resonators <i>Vicente Romero García, Noé Jiménez, Olivier Richoux, Georgios Theocharis, Jean Philippe Groby and Vincent Pagneux</i>	2278
Pattern and Orientation of Diffusers in Rooms with an Absorbent Ceiling <i>Emma Arvidsson, Erling Nilsson, Delphine Bard-Hagberg and Ola Karlsson</i>	2281
Advances in diffusive surface design using 3D architectural parametric modeling programs <i>Louena Shtrepi</i>	2289
Application of multi-objective optimization techniques to the design of sound diffusers <i>Javier Redondo, Juan M. Herrero, Luís Godinho, Ricardo Patraquim and Trevor Cox</i>	2297
Room acoustic texture: a methodology for its quantification <i>Alejandro Bidondo and Leonardo Pepino</i>	2305
Anisotropic sound fields in reverberation-room measurements of sound absorption coefficients: Wavenumber spectrum theory <i>Mélanie Nolan</i>	2313
Sound Absorption of Thin Resonators including a Winding Neck Extension in Surface Panel <i>Shinsuke Nakanishi</i>	2320

Tuesday, September 10

20 D - Acoustics of cultural heritage buildings 1

Unveiling the acoustics of the Cathedral of Santiago de Compostela using 3D impulse responses <i>Francesco Martellotta, Angel Alvarez-Corbacho, Lidia Alvarez-Morales, Francesca Balestra, Federica Ciani, Miguel Galindo Del Pozo, Juan José Gomez Alfageme and Pedro Fernando Nogueira Lopez</i>	2327
Mapping the acoustics of Ripon cathedral <i>Lidia Alvarez-Morales, Mariana Lopez, Angel Alvarez-Corbacho and Pedro Bustamante</i>	2335
Acoustics of Portuguese Romanesque churches <i>Antonio Carvalho and Francisco Pereira</i>	2343
Acoustics Timeline of Hagia Sophia and Süleymaniye Mosque in Istanbul <i>Zuhre Su Gul</i>	2351
Acoustical and Architectural History of the Thomaskirche in Leipzig <i>Braxton Boren and Jack Anthony</i>	2359
A Virtual Acoustic Restitution of St John's Baptistery in Pisa <i>Anna Rovigatti, Elena Rossi, Giulia Fratoni, Dario D'Orazio and Massimo Garai</i>	2360

Tuesday, September 10

20 H - Open Plan offices

Physiological, psychological and performance effects of office noise <i>Jenni Radun, Valtteri Hongisto, Henna Maula, Ville Rajala, Darin Al-Ramahi and Mika Scheinin</i>	2368
A comparison of Cognitive Performance and Listening Effort test procedures <i>Alexander Markus Dickschen, Andreas Liebl and Stefan Bleeck</i>	2376
How Office Workers Cope with Distraction by Sounds in the Open Plan Office <i>Sven Steps, Rianne Appel-Meulenbroek, Theo Arentze and Remy Wenmaekers</i>	2383
Liveliness as a design parameter for open plan offices <i>Tom Bouwhuis and Theodoor Höngens</i>	2390
Harmonizing Different Metrics for Speech Privacy <i>Markus Müller-Trapet</i>	2398
Objective and subjective assessment of acoustics in open-plan offices <i>Karin Loh, Eric Kurz and Janina Fels</i>	2406
ISO 3382-3: Necessary But Not Sufficient. A New Approach To Acoustic Design for Activity-Based-Working Offices <i>Jack Harvie-Clark, Felix Larrieu and Cecilie Opsanger</i>	2407
Comparison of models to predict the effect of background speech on work performance in open-plan offices <i>Tobias Renz</i>	2415
Evaluation of Measurement Uncertainties of the D2S in Open-Plan Offices <i>Lucas Lenne, Patrick Chevret and Etienne Parizet</i>	2423
Effect of office screens on the spatial decay of sound pressure level in open-plan offices <i>Tobias Renz</i>	2429
How ISO 3382-3 Acoustic Parameter Values are affected by Furniture, Barriers and Sound Absorption in a Typical Open Plan Office <i>Remy Wenmaekers and Nicole van Hout</i>	2437
Variability in the ISO 3382-3 metrics based on repeated acoustic measurements in open-plan offices <i>Manuj Yadav, Densil Cabrera, James Love, Jungsoo Kim, Jonothan Holmes, Hugo Caldwell and Richard de Dear</i>	2445
Numerical and experimental evaluation of a working environment on the basis of a speech intelligibility mapping <i>Marcus Maeder and Steffen Marburg</i>	2453
A statistical analysis of noise sources in open plan offices <i>Dario D'Orazio, Elena Rossi, Domenico De Salvio and Massimo Garai</i>	2460
Influence of Active-Noise-Cancelling Headphones on Cognitive Performance and Employee Satisfaction in Open Space Offices <i>Benjamin Johannes Mueller, Andreas Liebl and Noemi Martin</i>	2468
If speech is the source of noise, how can the source be eliminated or reduced? <i>Andreas Liebl, Noemi Martin and Benjamin Johannes Mueller</i>	2475
Water-based sound masking - An experimental study in an open-plan office <i>Valtteri Hongisto and Annu Haapakangas</i>	2482

Tuesday, September 10

21 B - Soundscapes of public spaces

Towards soundscape indices <i>Jian Kang, Francesco Aletta, Tin Oberman, M Erfanian, M Kachlicka, M Lionello and A Mitchell</i>	2488
Prediction models of desirable levels of birdsong and water sound in a noisy environment: A laboratory experiment based on virtual reality <i>Zhen-Ting Ong, Jooyoung Hong, Bhan Lam, Kenneth Ooi, Woon-Seng Gan, Samuel Jeong, Irene Lee and Tse Tiong Tan</i>	2496
Evaluation of preferred levels of natural sounds in-situ environment through an augmented reality device <i>Bhan Lam, Jooyoung Hong, Zhen-Ting Ong, Kenneth Ooi, Woon-Seng Gan, Samuel Jeong, Irene Lee and Tse Tiong Tan</i>	2503
Passenger's Train Soundscape: Identification of Activities <i>Nurul Hidayah, Gumilang Paramarta Saniskara, Nurfitriana Muharami, Keysha Wellviestu Zakri, Anugrah Sabdono Sudarsono and Sugeng Joko Sarwono</i>	2509
The relationship between activities and human perception in urban area <i>Andini Hapsari, Helga Salim, Anugrah Sabdono Sudarsono and Sugeng Joko Sarwono</i>	2515
Characteristics of urban soundscapes worthy of preservation <i>Yihong Jia, Jian Kang and Hui Ma</i>	2521
VR Environment-based Evaluation of Impact Factors on the Urban Soundscape Recognition <i>Rosa Seo, Hyun In Jo and Jin Yong Jeon</i>	2528
Characterization of the urban sound environment from commercial pedestrian streets: a first approach in São Paulo- Brazil. <i>Bruno Xavier Rego, Haryadne Carniel, Marcos Holtz and Graziela Caruso</i>	2536
Acoustic Vehicle Alerting Systems (AVAS) of electric cars and its possible influence on urban soundscape <i>Felix Laib and J. Alexander Schmidt</i>	2544
Research on Soundscape Identification - A Case Study in Shenzhen, China <i>Yu Lei and Jian Kang</i>	2552

Tuesday, September 10

22 W - General 'Sound design'

Acoustic validation of calculation software for ducts, panels and room acoustics <i>Chris van Dijk</i>	2559
Scenarios for embedding AI in Acoustic Design. Exploiting applications at several design stages <i>Andrea Giglio and Ingrid Paoletti</i>	2567

Tuesday, September 10

24 C - Vibro-acoustic behavior of structure under multi-field environments

Vibro-acoustic Behavior of Plates Considering Static Load Effect <i>Yueming Li, Di Wang, Qian Geng, Xiongwei Yang and Lei Wu</i>	2575
Mode conversion of elastic waves by using anisotropic metamaterials <i>Xiongwei Yang, Yueming Li and Gang Chen</i>	2582
Assessing Engineered Materials via Non-Destructive Impact Acoustics <i>Yishan Dong, Shahram Taherzadeh, David Sharp and James Bowen</i>	2588
Acoustic cloud based approach for Corona early detection on Hydropower Equipment <i>Jose Manuel Nieto Diaz, Paulo Teixeira and Manuel A. Sobreira Seoane</i>	2596
Analysis of SPL Reduction Possibilities Inside the WFI ATHENA Filterwheel Assembly <i>Wojciech Binek, Adam Pilch, Szymon Polak, Mirosław Rataj and Tadeusz Kamisiński</i>	2604

Tuesday, September 10

27 B - Audio for Mobile VR/AR

The Use of Inertial Measurement Units in Virtual Reality Systems for Auralization Applications <i>Kristian Jambrošić, Miljenko Krhen, Marko Horvat and Tin Oberman</i>	2611
An Attention-Guided Algorithm for Improving the Performance of Acoustic Simulations <i>Hanna Autio and Delphine Bard-Hagberg</i>	2619
Evaluation and comparison of novel music experiences in augmented reality <i>Arto Juhani Lehtiniemi, Jussi Leppänen, Henri Toukoma and Antti Eronen</i>	2627
Evaluation of the effect of head-mounted display on individualized head-related transfer functions <i>Maria Cuevas-Rodriguez, David Lou Alon, Samuel Clapp, Philip W. Robinson and Ravish Mehra</i>	2635
Spatial Upsampling of Sparse Head-Related Transfer Function Sets by Directional Equalization - Influence of the Spherical Sampling Scheme <i>Johannes M. Arend and Christoph Pörschmann</i>	2643
Perceptual Relevance of Speaker Directivity Modelling in Virtual Rooms <i>Henning Steffens, Steven van de Par and Stephan D. Ewert</i>	2651
Subjective Performance Criteria for Mixed-Reality Immersive Audio <i>Jean-Marc Jot, Rémi Audfray, Justin Mathew and Dan Mauney</i>	2659

Tuesday, September 10

Topic 02 - Posters: Audio signal processing (measurement, sensors, arrays)

Design of Kronecker Product Beamformers with Cuboid Microphone Arrays <i>Xuehan Wang, Jacob Benesty, Gongping Huang, Jingdong Chen and Israel Cohen</i>	2660
Impulse source localization with background noise in a reverberant environment by multiple sensors <i>Tiangang Wang, Yat-Sze Choy and Jungang Zhang</i>	2668
On the detection quality of early room reflection directions using compressive sensing on rigid spherical microphone array data <i>Frank Schultz and Sascha Spors</i>	2676
Reducing Transfer Function Measurement in Local Sound Field Reproduction using Acoustic Modelling <i>Qiaoxi Zhu, Xiaojun Qiu, Philip Coleman and Ian Burnett</i>	2684
Control of Sound Pressure in Audible Spot using Parametric Speakers <i>Takumi Hakamata, Hiroyoshi Yamashita, Keisuke Watanabe, Kotaro Hoshiba, Takenobu Tsuchiya and Nobuyuki Endoh</i>	2690
Left-right sound localization outside loudspeaker positions in stereo reproduction with parametric loudspeakers <i>Shigeaki Aoki, Kouki Ito, Kazuhiro Shimizu and Suehiro Shimauchi</i>	2696
Pressure-matching-based 2D sound field synthesis with equivalent source array <i>Izumi Tsunokuni, Kurokawa Kakeru and Yusuke Ikeda</i>	2701
Determination of Optimal Parameters Using Metaheuristics for the Sound Zone Generation by the Least-Squares <i>Kazuya Yasueda, Daisuke Shinjo and Akitoshi Kataoka</i>	2708
Single-channel signal Features for Estimating Microphone Utility for Coherent Signal Processing <i>Michael Günther, Andreas Brendel and Walter Kellermann</i>	2716
On the Use of Spherical Microphone Arrays in a Classical Musical Recording Scenario <i>Johann-Markus Batke</i>	2724
A Target Direction Search Algorithm Based on Microphone Array <i>Xubin Liang, Difeng Sun, Tianqing Zhao, Liangyong Zhang, Houlin Fang and Fang Zhang</i>	2730

Table of Contents - ICA 2019 / EAA Euroregio

Automatic Choice of Microphone Array Processing Methods for Acoustic Testing <i>Ennes Sarradj, Gert Herold and Simon Jekosch</i>	2737
Wind noise removal from mixture with speech: Using Wiener filter and invariant frequency beamforming <i>Fan-Jie Kung</i>	2745
A Maximum-Achievable-Directivity Beamformer with White-Noise-Gain Constraint for Spherical Microphone Arrays <i>Xi Chen, Gongping Huang, Jingdong Chen and Jacob Benesty</i>	2752
Neural Network-based Broadband Beamformer with Less Distortion <i>Mitsunori Mizumachi</i>	2760
Estimating sound intensity from acoustic data captured by parallel phase-shifting interferometry <i>Fumihiko Imaeda, Risako Tanigawa, Kenji Ishikawa, Kohei Yatabe and Yasuhiro Oikawa</i>	2765
Investigation into Transaural System with Beamforming Using a Circular Loudspeaker Array set at Off-center Position from the Listener <i>Yu Ito and Yoichi Haneda</i>	2773
Subjective evaluation of Head-Related Transfer Functions reconstructed with Spatial Principal Component Analysis and their domain dependency <i>Shouichi Takane, Keisuke Sakamoto, Koji Abe, Kanji Watanabe and Masayuki Nishiguchi</i>	2781
Adhoc method to Invert the Reassigned Time-Frequency Representation <i>Shristi Rajbamshi, Peter Balazs and Nicki Holighaus</i>	2789
Detection of clean time-frequency bins based on phase derivative of multichannel signals <i>Atsushi Hiruma, Kohei Yatabe and Yasuhiro Oikawa</i>	2797
Column-Wise Update Algorithm for Independent Deeply Learned Matrix Analysis <i>Naoki Makishima, Norihiro Takamune, Daichi Kitamura, Hiroshi Saruwatari, Yu Takahashi and Kazunobu Kondo</i>	2805
Deep Clustering for Single-Channel Ego-Noise Suppression <i>Annika Briegleb, Alexander Schmidt and Walter Kellermann</i>	2813
A Study on the Data Augment Method considering Room Transfer Functions for Acoustic Scene Classification <i>Minhan Kim and Seokjin Lee</i>	2821
Real-Time Audio Processing on a Raspberry Pi using Deep Neural Networks <i>Fotios Drakopoulos, Deepak Baby and Sarah Verhulst</i>	2827
Underwater Acoustic Recognition System for Detection of Low-altitude Moving Source <i>Tianqing Zhao, Xubin Liang, Difeng Sun, Fang Zhang and Deyu Sun</i>	2835
A Study on Separation Method Combined Gamma-Process Non-negative Matrix Factorization and Deep Learning. <i>Jomae Satoru, Kenko Ota and Hideaki Yoshino</i>	2840
Detection of Boat Noise by a Convolutional Neural Network for a Boat Information System <i>Haruki Yamaguchi and Kenji Muto</i>	2848
Effective Method for Screening Discharged Battery Using Support Vector Machine and High- Resolution Acoustic Analysis <i>Tomoaki Magome and Kan Okubo</i>	2854
Gated convolutional neural network-based voice activity detection under high-level noise environments <i>Li Li, Kouei Yamaoka, Yuki Koshino, Mitsuo Matsumoto and Shoji Makino</i>	2862
Acoustic Remote Sensing for Irrigation Systems Control in Agriculture <i>Anna Radionova, Chandra Ghimire, Laura Grundy, Seth Laurensen, Stuart Bradley and Valerie Snow</i>	2870
Sound Capture from Rolling-shuttered Visual Camera Based on Edge Detection <i>Koichi Terano, Hiroki Shindo, Kenta Iwai, Takahiro Fukumori and Takanobu Nishiura</i>	2878
Designing Nearly Tight Window for Improving Time-Frequency Masking <i>Tsubasa Kusano, Yoshiki Masuyama, Kohei Yatabe and Yasuhiro Oikawa</i>	2885

Table of Contents - ICA 2019 / EAA Euroregio

Noise-reducing Sound Capture Based on Exposure-time of Still Camera <i>Hiroki Shindo, Koichi Terano, Kenta Iwai, Takahiro Fukumori and Takanobu Nishiura</i>	2893
Time-Variant Acoustic Front-End Measurements of Active Noise Cancellation Headphones <i>Johannes Fabry, David Hilkert, Stefan Liebich and Peter Jax</i>	2900
DFT-Filterbanks with Spectral Refinement and its Comparison with Polyphase Filterbanks <i>Mohammed Krini</i>	2908
Optimal Design of Symmetric and Asymmetric Beampatterns with Circular Microphone Arrays <i>Xudong Zhao, Gongping Huang, Jacob Benesty and Jingdong Chen</i>	2909

Tuesday, September 10

Topic 03 - Posters: Animal Bioacoustics

New Aspects in Birdsong Recognition utilizing the Gabor Transform <i>Sven Heuer, Pavel Tafo, Hajo Holzmann and Stephan Dahlke</i>	2917
Applying Convolutional Neural Networks to the Analysis of Mouse Ultrasonic Vocalizations <i>Reyhaneh Abbasi, Peter Balazs, Anton Noll, Doris Nicolakis, Maria Adelaide Marconi, Sarah M. Zala and Dustin J. Penn</i>	2925

Tuesday, September 10

Topic 04 - Posters: Building acoustics

Acoustic Performance of Soundproof Ventilation Units installed in Dwelling Walls <i>Sohei Nishimura, Yuya Nishimura and Thulan Nguyen</i>	2932
Acoustic regulations and design of the multipurpose hall and exhibition halls of the new Munch museum in Oslo <i>Jannicke Olshausen</i>	2938
Speech privacy as a harmonizing factor in rating the sound insulation between dwellings <i>Miomir Mijić, Dragana Šumarac Pavlović, Miloš Bjelić and Tatjana Miljković</i>	2946
Derivation of Frequency Dependent Time-Domain Boundary Conditions Based on In-Situ Surface Measurements and Model Fitting <i>Baltazar Briere de la Hossieraye, Huiqing Wang, Fotis Georgiou, Maarten Hornikx and Philip W. Robinson</i>	2951
Sound Absorption of Brazilian wooden panels and their use as Building Components <i>Rodrigo Scoczynski Ribeiro, Márcio Henrique Avelar Gomes, Rosemara Santos Deniz Amarilla, Fernando Jun Hattori Terashima, Luis Henrique Santana, Rodrigo Catai and Adalberto Matoski</i>	2959
Sound absorption provided by an impervious membrane/cavity/activated carbon arrangement <i>Veronica Marin and Jorge P. Arenas</i>	2967
Acoustic properties of façade fragments of historical monuments <i>Lukas Vargic, Jana Gregorova and Monika Rychtarikova</i>	2974
Experimental study on sound absorption characteristics of granular material: Influence of lateral constraints of casing <i>Tsuruha Takumasa, Yoshinari Yamada, Makoto Otani and Yasushi Takano</i>	2979
Cellular automata modeling of propagation and absorption of acoustic waves in impedance tube <i>Meng Wang, Bo Zhang, Qiqi Chen, Liheng Wang and Yutian Bai</i>	2984

Tuesday, September 10

Topic 09 - Posters: Health effects of noise

Influence evaluation of infrasonic/audible noise environment by using both of biological information and infrasound sensors in the vicinity of wind turbine facilities <i>Megumi Nagamatsu and Masa-Yuki Yamamoto</i>	2992
Investigation of the unpleasantness of infrasound combined with audio sound using psychoacoustic scaling methods <i>Elisa Burke, Euginia Steder, Stefan Uppenkamp and Christian Koch</i>	3000
A study on the influence of noise and vibration on the living environment along the Hokuriku Shinkansen railway <i>Takashi Morihara, Shigenori Yokoshima and Yasunao Matsumoto</i>	3007
Influence of nocturnal noise on non-restorative sleep: Gender effects <i>Daniel Fong, Sha Li, Janet Wong, Bradley McPherson, Esther Lau, Lixi Huang and Mary Ip</i>	3014
Finger pulse wave amplitude response during sleep to environmental noise <i>Branko Zajamsek, Gorica Micic, Kristy Lee Hansen and Peter Catcheside</i>	3018
Studying Individual Noise Disturbance Using Long Term Ear-EEG (Electroencephalography) Recordings In Everyday Life <i>Martin Georg Bleichner</i>	3026
Examination of the Causal Relationship between Aircraft Noise Exposure, Noise Annoyance and Diagnoses of Depression Using Structural Equation Modelling <i>Sarah Leona Benz and Dirk Schreckenber</i>	3033
Do ultrafine particles confound studies on noise and cardiovascular disease? <i>Anna Hansell, Anja Tremper, Jamie Soussan, Paolo Vineis, Gary Fuller and John Gulliver</i>	3040

Tuesday, September 10

Topic 12 - Posters: Electro-acoustics and (3D) audio signal processing

Spatial Principal Component Analysis of Head-Related Transfer Functions using their complex logarithms with unwrapping of phase <i>Shouichi Takane</i>	3048
Variability of Head Related Transfer Functions across subjects <i>Maciej Jasiński and Jan Zera</i>	3056
Active Control of Scattering Effects in 2.5D Multizone Reproduction <i>Junqing Zhang, Wen Zhang, Lijun Zhang and Mengyao Zhu</i>	3063
Dynamic local sound field synthesis with multi-channel 1-bit signal reproduction system <i>Kurokawa Kakeru, Izumi Tsunokuni, Yusuke Ikeda and Yasuhiro Oikawa</i>	3071
Design of a Constant Beamwidth Beamformer for the Parametric Array Loudspeaker <i>Chuang Shi and Ruyu Bai</i>	3077
Spectral-change Enhancement with prior SNR for the Hearing Impaired <i>Xiang Li, Xin Tian, Henry Luo, Jinyu Qian, Xihong Wu, Dingsheng Luo and Jing Chen</i>	3082
Impact of Amplification on Speech Enhancement Algorithms Using an Objective Evaluation Metric <i>Zhuohuang Zhang, Donald S. Williamson and Yi Shen</i>	3090
De-reverberation using CNN for Non-Reference Reverberant Speech Intelligibility Estimation <i>Kazushi Nakazawa and Kazuhiro Kondo</i>	3098
On Non-Reference Speech Intelligibility Estimation Using DNN Noise Reduction <i>Hiroto Takahashi and Kazuhiro Kondo</i>	3103
Reverberant speech recognition with actual cochlear implants: verifying a pulsatile vocoder simulation method <i>Fanhui Kong, Xianren Wang, Xiangbin Teng, Nengheng Zheng, Guangzheng Yu and Qinglin Meng</i>	3109

Relationship between Drive Signal and Stability in MIDS Modulator <i>Shigeto Takeoka</i>	3113
Measurements of Current Noise and Distortion in Resistors <i>Youhei Miyaoka and Minoru Kuribayashi Kurosawa</i>	3120
Robust Long-distance Aerial Audio Data Hiding: Comparison between Amplitude Modulation-based Hiding and Bilateral Time-spread Echo Hiding <i>Akira Nishimura</i>	3126

Tuesday, September 10

Topic 13 - Posters: Flow acoustics

Comparison of Acoustic and Laryngeal Parameters between Healthy and Disordered Subjects <i>Patrick Schlegel, Stefan Kniesburges, Michael Döllinger, Stephan Dürr and Anne Schützenberger</i>	3134
Characterization of turbulence noise in breathy human phonation <i>Philipp Aichinger</i>	3139
Aerodynamic and aeroacoustic optimization of a centrifugal fan with backward-curved blades by means of inverse design <i>Chris Eisenmenger, Stefan Frank, Hakan Dogan and Martin Ochmann</i>	3147
Predicting Cooling Fan Noise by Numerical Conditions Using Compressible Large Eddy Simulation <i>Kimihisa Kaneko and Tsutomu Yamamoto</i>	3155
Experimental Study on BTI Broadband Noise Reduction with Wavy Leading Edge for Sweep Blade <i>Weiyang Qiao, Xin Guo, Wenhua Duan, Fan Tong and Weijie Chen</i>	3163
Study on relationship between the geometry of Leading and Trailing Edges of Airfoil and their Aeroacoustics Parameters at low Reynolds number <i>Joanna Kopania</i>	3171
Methods of estimation of frequency spectrum and power of the sound generated by an unsteady flow through a sonic crystal <i>Viktor Hruska, Michal Bednarik and Milan Cervenka</i>	3179

Tuesday, September 10

Topic 14 - Posters: Underwater acoustics - Part B

DOA Estimation of Underwater Targets via Improved Monopulse Method with Sonar Array <i>Jiani Wu and Changchun Bao</i>	3185
--	------

Tuesday, September 10

Topic 15 - Posters: Numerical, computational and theoretical acoustics

Rotor Dynamics Analysis under Uncertainty in Lubricant Film <i>Xiaodong Sun, Kheirollah Sepahvand, Zhe Liu and Steffen Marburg</i>	3193
In-plane Vibration and Tire Force Transmissibility owing to Tire Non-uniformity Defects <i>Zhe Liu, Kheirollah Sepahvand, Yintao Wei and Steffen Marburg</i>	3200
Calculation of wave propagation characteristics in pre- deformed periodic lattice frame structures via Spectral Element Method <i>Marius Mellmann and Chuanzeng Zhang</i>	3205
Metaheuristic optimisation of sound absorption performance of multilayered porous materials <i>Vivek Thaminni Ramamoorthy, Ender Ozcan, Andrew Parkes, Luc Jaouen and François-Xavier Bécot</i>	3213

Table of Contents - ICA 2019 / EAA Euroregio

Study on Simulation of Steady-state Sound Field Matrix in Complex Undersea Environment and Detection Sensitivity <i>Jun Suo, Yangyang Zhang and Simi Tang</i>	3221
A new local boundary integral equation method for meshless acoustic computations <i>Hakan Dogan and Martin Ochmann</i>	3229
Physical realization of the radiation of complex multipoles <i>Rafael Piscoya and Martin Ochmann</i>	3235
Comparison of characterization methods for rigid porous materials <i>Ferina Saati, Christian A. Geweth and Steffen Marburg</i>	3242

Wednesday, September 11

Wednesday, September 11

01 B - Applications of active control of noise and vibration

Theoretical and Experimental Analysis of a Skyhook Damper for Active Control of Sound Transmission <i>Neven Alujević, Steven Claes, Martina Šimag and Paul Sas</i>	3245
Hybrid Mass Damper Using Electromagnetic Resonator: Application to a Helicopter <i>Simon Chesne, Guillaume Inquieté and Paul Cranga</i>	3253
Active Engine Mount <i>Stefan Loheide</i>	3257
Simulation-Based Multi-Objective Optimization of a Fuzzy Controller for Semi-Active Suspension <i>Louis Balzer, Valentin Mees, Jonathan Millitzer and Giovanni Lapicciarella</i>	3265
Design and applications of lean active resonator silencer cassettes <i>Jens Rohlfing, Karlheinz Bay and Peter Brandstät</i>	3273
A boundary virtual sound barrier system for sound radiation through openings with double-layer secondary sources and error microphones <i>Shuping Wang, Xiaojun Qiu and Jiancheng Tao</i>	3281

Wednesday, September 11

02 B - Acoustic and audiovisual source localization 1

Probabilistic Modeling for Learning-based Distance Estimation <i>Andreas Brendel, Andy Regensky and Walter Kellermann</i>	3289
Speaker Distance Estimation using Binaural Hearing Aids and Deep Neural Networks <i>Mehdi Zohourian, Jakob Stinner and Rainer Martin</i>	3297
Binaural Direction-of-Arrival Estimation in Reverberant Environments Using the Direct-path Dominance test <i>Hanan Beit-On and Boaz Rafaely</i>	3305
Data-driven Threshold Selection for Direct Path Dominance Test <i>Orhun Olgun and Huseyin Hacihabiboglu</i>	3313
Source Localization using a Spatial Kernel based Covariance Model and Supervised Complex Nonnegative Matrix Factorization <i>Antonio Jesús Muñoz Montoro, Violeta Montiel-Zafra, Julio José Carabias-Orti, Juan Torre-Cruz, Francisco Jesús Canadas-Quesada and Pedro Vera-Candeas</i>	3321

Wednesday, September 11

02 B - Acoustic and audiovisual source localization 2

Towards low cost acoustic cameras for the Internet of Things <i>Jose Javier Lopez, Maximilian Becker and Carlos Hernandez</i>	3329
Inference in Nonlinear Dynamical Systems with dynamic Stream Weights for Audiovisual Speaker Tracking <i>Christopher Schymura and Dorothea Kolossa</i>	3337
Audiovisual active speaker localization and enhancement for multicopter micro aerial vehicles <i>Daniele Salvati, Carlo Drioli, Andrea Gulli, Gian Luca Foresti, Federico Fontana and Giovanni Ferrin</i>	3338
Study on Large Scale Projectile Impact Point Positioning Method Based on Trajectory Shock Wave <i>Difeng Sun, Xubin Liang, Tianqing Zhao, Houlin Fang, Cheng Zhang, Hui Zheng, Liangyong Zhang, Fang Zhang, Deyu Sun and Yang Liu</i>	3346

Wednesday, September 11

02 F - Perceptual aspects in spatial audio processing

- Perceptual Aspects in Spatial Audio Processing 3354
Karlheinz Brandenburg, Bernhard Fiedler, Georg Fischer, Florian Klein, Annika Neidhardt, Christian Schneiderwind, Ulrike Sloma, Claudia Stirnat and Stephan Werner
- Perceived Quality and Plausibility of Room Reverberation in VR Reproduction from Measured Images and Acoustics 3361
Luca Remaggi, Hansung Kim, Adrian Hilton and Philip Jackson

Wednesday, September 11

02 G - Phase-Aware Time-Frequency Signal Processing

- On the Stability of Gabor Phase Retrieval 3369
Matthias Claus Wellershoff and Rima Alaifari
- Phase-Magnitude Relations and Phaseless Reconstruction for Time-Frequency and Time-Scale representations 3377
Nicki Holighaus, Zdenek Prusa and Günther Koliander

Wednesday, September 11

03 A - Acoustical Signal Processing in biological systems: Mathematical Methods and Algorithms

- A Localization Algorithm based on Head-Related Transfer Functions 3379
Maïke Gerhard, Patrick Schillberg, Hermann Wagner and Hartmut Führ

Wednesday, September 11

03 B - Evolution of the ear

- Why did Solid Otoliths evolve in the Ears of Modern Bony Fishes? 3387
Tanja Schulz-Mirbach, Martin Plath, Friedrich Ladich and Martin Heß

Wednesday, September 11

04 G - Low frequency sound and vibration in buildings

- Reducing ground-borne noise due to railways. Part I: assessing the problem 3395
Catherine Guigou-Carter, Guillaume Coquel, Philippe Jean and Alexandre Jolibois
- Reducing ground borne noise due to railways. Part II : mitigation measures 3403
Philippe Jean, Catherine Guigou-Carter and Alexandre Jolibois
- Correction of Sound Pressure Levels Calculated for Small Rooms Using Diffuse-Field Theory 3411
Kiyoshi Masuda and Hikari Tanaka
- Using realistic test signals to evaluate existing structures for low frequency sound transmission from clubs, live music venues, discos, and exercise facilities 3419
David Sage Woolworth
- Experimental Study on Low-Frequency Averaging of Indoor Sound Pressure Level in Façade Sound Insulation Measurement 3426
Jinyu Liu, Naohisa Inoue and Tetsuya Sakuma
- Additional sound insulation panels ZIPS-experience of 20 years of application 3434
Alexander Boganik and Anatoly Livshits

Noise from plants systems and Building Information Modeling: The Code Checking. <i>Costantino Carlo Mastino, Roberto Baccoli, Andrea Frattolillo and Martino Marini</i>	3442
--	------

Wednesday, September 11

04 H - Insulating and absorbing materials made from renewables 2

Preliminary investigation on the acoustic properties of absorbers made of recycled textile fibers <i>Chiara Rubino, María Angeles Bonet-Aracil, Stefania Liuzzi and Francesco Martellotta</i>	3450
Characterization of woven fabrics for development of micro perforated panel absorbers <i>. Gunawan, Iwan Prasetyo, B Yuliarto, K Anwar and D R Andhika</i>	3458
Sound Absorption Characteristics of a Back-Perforated Honeycomb Panel with an Air-Layer <i>Kyungsoo Kong, Tetsuya Sakuma and Naohisa Inoue</i>	3466
Architectural Acoustic Design using absorption materials: the case study 'Snooze Panel' <i>Livio Mazzarella and Maria Cairolì</i>	3474
Analysis of environmental and seasonal effects on sound absorption by green wall systems <i>Emmanuel Attal, Nicolas Côté, Takafumi Shimizu and Bertrand Dubus</i>	3482

Wednesday, September 11

04 K - Facade Sound Insulation

Facade Sound Insulation as Protection to Outdoor Noise <i>Chiara Scrosati, Fabio Scamoni, Michele Depalma and Matteo Ghellere</i>	3490
Measurements and prediction of sound insulation of innovative ventilated façade solutions <i>Francesca Di Nocco, Luca Barbaresi, Federica Morandi and Massimo Garai</i>	3498
Designing a Better Plenum Window or Balcony for Higher Noise Reduction Against Outdoor Noise <i>Liu Yee Louisa Cheung, David Bk Yeung, Ching Chan and Calvin Chiu</i>	3506
Sound Insulation of Fenestration Systems: A Comprehensive Web-Based Simulation Program and Validation <i>Tejav Deganyar, Fangliang Chen, Yihe Huang and Rebecca Grotemeyer</i>	3512
Adaptive acoustic comfort: Assessing noise with provisions for ventilation and overheating in dwellings <i>Jack Harvie-Clark, Anthony Chilton, Nick Conlan and David Trew</i>	3520
Requirements for the façade sound insulation for different types of outdoor noise <i>Steffen Körper</i>	3528
Ventilative cooling in noisy environments: practical options for the UK <i>Nick Conlan and Jack Harvie-Clark</i>	3534
Innovative Noise Mitigation Measure- Baffle Type Acoustic Window <i>Ching Chan, Liu Yee Louisa Cheung, David Bk Yeung, Calvin Chiu and Billy Fan</i>	3542

Wednesday, September 11

05 W - Education in Acoustics

MATLAB-based simulation software as teaching aid for physical acoustics <i>Jorge Petrosino, Lucas Fernando Landini, Georgina Alejandra Lizaso, Antonio Ian Kuri and Ianina Canalis</i>	3547
---	------

Wednesday, September 11

08 H - EUROREGIO SESSION: EPA Network-IGNA: Progress report on the impact, technology and regulations to abate noise in Europe

The EPA-Network Interest Group of Noise Abatement (IGNA) <i>Urs Walker, René Weinandy, Hans Boegli and Nina Mahler</i>	3555
Recommendations for Traffic Noise Abatement <i>René Weinandy, Hans Boegli and Urs Walker</i>	3561
Problems of Road Traffic Noise Annoyance and Sleep Disturbance in Some Slovakian Cities <i>Ladislav Mihalčík, Stanislav Sekretar, Jana Jurkovicova, Jan Simonovic and Lubica Argalasova</i>	3565
Overview of environmental noise limits in the European Region <i>Rosan Nusselder and Bert Peeters</i>	3572
Assessment of Quiet Areas in Europe <i>Eulalia Peris, Nuria Blanes Guardia, Jaume Fons-Esteve and Miquel Sáinz de la Maza</i>	3580
Noise Advocacy <i>Tony Paul Dolan</i>	3588
New trends in noise abatement <i>Hans Boegli, Urs Walker and René Weinandy</i>	3596

Wednesday, September 11

08 K - EUROREGIO SESSION: European harmonized calculation model for environmental noise CNOSSOS

Flaws in the Cnossos Calculation Method and Proposed Solutions <i>Arnaud Kok</i>	3601
Establishing noise emission for an electric road vehicle category in CNOSSOS-EU <i>Bert Peeters, Erik de Graaff, Hilary Notley, Simon Shilton and Matthew Muirhead</i>	3602
The determination of road surface corrections for CNOSSOS-EU model for the emission of road traffic noise <i>Fabienne Anfosso Ledee and Luc Goubert</i>	3603
Transposition of CNOSSOS-EU into German Law <i>René Weinandy and Thomas Myck</i>	3611
Implementation of CNOSSOS-EU method for road noise in Italy <i>Gonzalo de Leon, Francesco Fidecaro, Mauro Cerchiai, Marco Reggiani, Elena Ascari and Gaetano Licitra</i>	3614
Matching noise emission from French medium-heavy vehicles and CNOSSOS models <i>Marie-Agnès Pallas, Adrien Le Bellec and David Ecotiere</i>	3622
The First Agglomeration Noise Maps in Niš, Serbia, Using CNOSSOS-EU:2015 <i>Simon Shilton, Rafdouglass Tommasi, Jiri Michalik, Álvaro Grilo, Kristina Peric and Ivana Krstic</i>	3630

Wednesday, September 11

09.1 G - Response to transportation noise and vibration

Combined effect of vibrations on railway noise annoyance <i>Shigenori Yokoshima, Takashi Morihara and Yasunao Matsumoto</i>	3631
Experimental Investigation of Evaluation Method of Horizontal Vibration in Building Caused by External Vibration Sources <i>Kentaro Hayashi, Yasunao Matsumoto and Toyohiko Higashida</i>	3637

Case examples of the measurement of vibration and annoyance response in residential buildings beside roads and railways <i>Yasunao Matsumoto, Shigenori Yokoshima and Kentaro Hayashi</i>	3643
Annoyance reactions due to noise and vibrations caused by different train types in Sweden: results from the EpiVib study <i>Elise van Kempen, Mikael Ögren, Laura Maclachlan, Laith Hussain-Alkatheeb and Kerstin Persson Waye</i>	3651
Effects of changes in operational and residential factors on public health and reactions at the vicinity of Noi Bai International Airport <i>Thulan Nguyen, Bach Lien Trieu, Takashi Yano, Takashi Morihara, Yasuhiro Hiraguri and Makoto Morinaga</i>	3652

Wednesday, September 11

09.2 A - Sleep

Pilot Field Study on the Effects of Aircraft Noise on Sleep Around Atlanta International Airport <i>Mathias Basner, Michael Smith, Sarah Rocha and Maryam Witte</i>	3660
Effects of nocturnal aircraft noise on objective and subjective sleep quality in primary school children <i>Susanne Bartels, Julia Quehl and Daniel Aeschbach</i>	3664
The effect of road traffic noise spectrum on sleep <i>Valtteri Hongisto and Saana Myllyntausta</i>	3667
Traffic Noise and its Impact on Sleep Depth Measured by the Odds Ratio Product <i>Michael Smith, Magdy Younes, Daniel Aeschbach, Uwe Müller and Mathias Basner</i>	3671
Do characteristics of short term transportation noise exposure fluctuation better predict self-reported sleep disturbances than Leq-based average noise metrics? <i>Mark Brink</i>	3676

Wednesday, September 11

09.2 B - Cognitive effects

Comparing intentional switching of auditory selective attention in children and adults in an experiment suited for children <i>Karin Loh, Edina Fintor, Sophie Nolden and Janina Fels</i>	3677
Effects of irrelevant background speech on verbal working memory tasks <i>Maria Klatte, Kirstin Bergström and Thomas Lachmann</i>	3679
Remembering landmarks in a virtual maze: Does the disturbance impact of background speech depend on the spatial information inherent in the speech signal? <i>Sabine Schlittmeier and Edina Fintor</i>	3682

Wednesday, September 11

10 D - Road Traffic Noise Prediction Methods

Road Traffic Noise Prediction Model "ASJ RTN-Model 2018" Proposed by The Acoustical Society of Japan - Part 1: Outline of the calculation model <i>Shinichi Sakamoto, Yasuaki Okada, Akinori Fukushima, Toshio Matsumoto and Terutoshi Tajika</i>	3690
Road Traffic Noise Prediction Model "ASJ RTN-Model 2018" Proposed by The Acoustical Society of Japan - Part 2: Calculation Model of Sound Emission of Road Vehicles <i>Yasuaki Okada, Akinori Fukushima, Katsuya Yamauchi and Shinichi Sakamoto</i>	3696
Road Traffic Noise Prediction Model "ASJ RTN-Model 2018" Proposed by The Acoustical Society of Japan - Part 3: Calculation model of sound propagation <i>Akinori Fukushima, Shinichi Sakamoto, Yosuke Yasuda and Takatoshi Yokota</i>	3704

Table of Contents - ICA 2019 / EAA Euroregio

Road Traffic Noise Prediction Model "ASJ RTN-Model 2018" Proposed by The Acoustical Society of Japan - Part 4: Accuracy Verification of a Practical Method for Areas behind Buildings in Urban Districts <i>Ken Anai, Toshio Matsumoto, Takatoshi Yokota and Shinichi Sakamoto</i>	3712
Road Traffic Noise Prediction Model "ASJ RTN-Model 2018" Proposed by The Acoustical Society of Japan - Part 5: Study on Prediction Accuracy <i>Katsuya Yamauchi, Terutoshi Tajika, Akinori Fukushima and Ken Anai</i>	3720
Experimental Modelling of Tyre/Road Noise from Road Texture Spectra on Rubberized Road Surfaces <i>Alessandro Del Pizzo, Gonzalo de Leon, Luca Teti, Francesco Bianco, Antonino Moro, Luca Fredianelli and Gaetano Licitra</i>	3727
An Australian case study on the estimation of heavy vehicle noise emission on grade <i>Jeffrey Peng, Daipei Liu, Jeffrey Parnell and Nicole Kessissoglou</i>	3735
Vehicular traffic noise in bus station users modeling and prediction, based on the analysis of direct and specular paths <i>Dayane Cristina Lima Estercio and Paulo Fernando Soares</i>	3740

Wednesday, September 11

11 A - Outdoor sound propagation (including urban sound propagation)

Modelling reflections from single trees and entire forests <i>Jean Marc Wunderli</i>	3748
Applying the diffusion equation to urban scenarios: Computational analysis of the diffusion coefficient <i>Raúl Pagán Muñoz, Juan Miguel Navarro Ruiz and Maarten Hornikx</i>	3756
Solution of wide-angle parabolic equations for long-range sound propagation in a moving medium <i>David Keith Wilson, Michael Muhlestein, Vladimir Ostashev, Michael J. Shaw, Michelle Swearingen and Sarah McComas</i>	3764
Uncertainty Analysis of Environmental Sound: Analysis of a Series of Field Experiments <i>John Fenlon</i>	3772
Model Test Stand for Acoustic Scattering <i>Wolfram Bartolomaeus</i>	3780
A data bank of outdoor transfer functions <i>Sylvain Cheinet, Loic Ehrhardt, Matthias Cosnefroy and Adrien Dagallier</i>	3788
Comparison of ASJ RTN-Model 2013 and the Harmonoise Engineering Model under Thick Barrier Configurations <i>Takuya Oshima, Azusa Hoshikawa and Yumi Kurosaka</i>	3794
Managing the Uncertainty of Long-distance Sound Propagation from a Large Industrial Noise Source <i>Tim Procter, Deanna Tomerini and Alan Lex Brown</i>	3802
Propagation of Bird Vocalizations in the Alpine Environment <i>Didier Dragna, Loïc Berger, Sébastien Ollivier and Frédéric Sèbe</i>	3810
Prediction of atmospheric sound propagation subject to parameter variability of atmospheric turbulence <i>Jasmin Hörmeyer, Clemens Hübler, Tobias Bohne and Raimund Rolfes</i>	3818

Wednesday, September 11

11 B - Wind turbine noise: Generation and propagation

In Situ Measured Facade Sound Insulation of Wind Turbine Sound <i>Pontus Thorsson</i>	3826
Prediction of Broadband Noise Generated from Turbulent Boundary Layers of a Horizontal Axis Wind Turbine <i>Soichi Sasaki and Moe Htet Zaw</i>	3831

Wednesday, September 11

14 A - Signal processing and inversion in underwater acoustics 1

Extraction of Interface Wave Dispersion Curves from Ocean Ambient Noise <i>Hefeng Dong, Guoli Wu and Ganpan Ke</i>	3837
Underwater Acoustic Localization of Pulsed Sources with an Array of Three Hydrophones <i>Emmanuel Skarsoulis and Despoina Pavlidi</i>	3838
Bayesian Geoacoustic inversion for SBCEX17 Reflection, Dispersion, and Ship-noise Data <i>Stan Dosso, Charles Holland, Julien Bonnel, Dag Tollefsen, Josee Belcourt, Jan Dettmer and David Knobles</i>	3839

Wednesday, September 11

18 C - Rehabilitative audiology

A Clinical Test Battery for Better hEARing Rehabilitation (BEAR). Towards the prediction of individual auditory deficits and hearing-aid benefit <i>Raul Sanchez-Lopez, Silje Nielsen, Oscar Cañete, Michal Fereczkowski, Mengfan Wu, Tobias Neher, Torsten Dau and Sébastien Santurette</i>	3841
Assessing the interaction between different auditory profiles and benefit from six hearing aid processing strategies: Insights from the Better hEARing Rehabilitation (BEAR) project <i>Mengfan Wu, Raul Sanchez-Lopez, Mouhamad El-Haj-Ali, Silje Nielsen, Michal Fereczkowski, Torsten Dau, Sébastien Santurette and Tobias Neher</i>	3849
Evaluation of Objective Prediction Approaches for Aided Listening in Complex Acoustic Scenes <i>Florian Kramer, Marc René Schädler and Anna Warzybok</i>	3857
Effects of Personalising Hearing-Aid Parameter Settings Using a Real-Time Machine-Learning Approach <i>Niels Sjøgaard Jensen, Laura Winther Balling and Jens Brehm Bagger Nielsen</i>	3858
User behavior with EVOTION hearing aids <i>Niels H. Pontoppidan and Lars Bramsløw</i>	3866
Hearing aid benefit in everyday life <i>Inga Holube, Petra von Gablenz, Ulrik Kowalk, Markus Meis and Jörg Bitzer</i>	3869

Wednesday, September 11

18 H - Audio-visual (speech) perception

Audiovisual Speech Perception: Time for a paradigm shift <i>Nancy Tye-Murray</i>	3870
Audiovisual speech perception in cochlear implant recipients - examinations based on virtual reality <i>Hartmut Meister</i>	3875
Audiovisual Speech Perception in Children with Autism Spectrum Disorders <i>Julia Irwin, Trey Avery, Daniel Kleinman and Nicole Landi</i>	3876
Audio-visual stimuli for the evaluation of speech-enhancing algorithms <i>Giso Grimm, Gerard Llorach, Maartje Hendrikse and Volker Hohmann</i>	3883
Audio-visual scene analysis in reverberant multi-talker environments <i>Axel Ahrens, Kasper Duemose Lund and Torsten Dau</i>	3890
Loudness and distance estimates for noise bursts coming from several distances with and without visual cues to their source <i>Gauthier Berthomieu, Vincent Koehl and Mathieu Paquier</i>	3897
Auditory perception of distance to rattlesnakes in an audio-visual virtual environment <i>Michael Schutte, Michael Forsthofer, Boris Chagnaud and Lutz Wiegrebe</i>	3905

Wednesday, September 11

18 K - Influences of multisensory processing on auditory perception

Reaction times in multisensory localization tasks <i>Yi Zhou and Colton Clayton</i>	3906
Relatively Speaking: Spatial Discrimination Tasks As Tools for Studying Multisensory Integration <i>Ross Maddox</i>	3913
Visual Recalibration of Auditory Spatial Perception Decays at Different Time Scales <i>Patrick Bruns and Brigitte Röder</i>	3915
Sensory integration in parietal but not auditory cortex mediates multisensory integration and recalibration <i>Hame Park and Christoph Kayser</i>	3921
Temporal attention and comodulation in multisensory causal inference <i>Virginie van Wassenhove, Daria La Rocca, Denis Alexander Engemann and Philippe Ciuciu</i>	3922
The Role of Audiovisual Temporal Coherence in Auditory Scene Analysis <i>Jennifer Bizley, Huriye Atilgan and Ana Isabel Sanchez Jimenez</i>	3930
Multisensory Influences on Human Auditory Communication <i>Katharina von Kriegstein</i>	3932
Ageing increases the impact of audiovisual synchrony on speech comprehension in adverse listening situations <i>Giulio Degano, Samuel Jones and Uta Noppeney</i>	3933

Wednesday, September 11

18 N - Parcellating the functions of human auditory cortex

Mapping auditory specialization within human frontal cortex <i>Abigail Noyce, Sean Tobyne, Ray Lefco, James Brissenden, David Somers and Barbara Shinn-Cunningham</i>	3934
Spectral Properties of Primary and Non-primary Auditory Cortical Activity <i>Alexander J Billig, Björn Herrmann, Ariane E Rhône, Phillip E Gander, Kirill V Nourski, Beau F Snoad, Christopher K Kovach, Hiroto Kawasaki, Matthew A Howard and Ingrid S Johnsrude</i>	3935
Spatial processing in the auditory cortex for stream segregation and localization <i>Martha M Shiell and Elia Formisano</i>	3936
Assessing Perinatal Maturation of Human Primary and Nonprimary Auditory Cortex <i>Brian B. Monson</i>	3942

Wednesday, September 11

20 D - Acoustics of cultural heritage buildings 2

The Teatro Colón in Buenos Aires as a Double-Function Hall <i>Gustavo Basso</i>	3943
Physical measurements vs. auditory assessment of a concert hall by different groups of users: a case study <i>Tadeusz Fidecki, Jan Zera, Andrzej Miśkiewicz, Barbara Okoń-Makowska, Tomira Rogala, Teresa Rościszewska, Ewa Więckowska-Kosmala, Maciej Jasiński and Maciej Łukaszewicz</i>	3951
Acoustical Conservative Rehabilitation of St. Roque Church, Tollecantto - Goa <i>Menino Allan S. M. Peter Tavares</i>	3959
Analysis of the Acoustic characteristics of a Museum of Modernist Architecture - Art Museum São Paulo Assis Chateaubriand <i>Marselle Nunes Barbo and Eric Brandão</i>	3967
Acoustic suitability of heritage-listed buildings using BRASS software: a case study of Armando Gonzaga Theater, Rio de Janeiro, Brazil <i>Guilherme Coutinho Fagerlande, Maria Lygia Niemeyer and Julio Cesar Boscher Torres</i>	3975

Determination of the characteristics of contemporary Turkish mosque and its acoustical properties <i>Elma Alic and Aslı Özçevik Bilen</i>	3983
--	------

Wednesday, September 11

20 F - Sound absorption including the reverberation room issues, new trends revision ISO 354

On the Revision of ISO 354, Measurement of the Sound Absorption in the Reverberation Room <i>Martijn Vercammen</i>	3991
Design Principles of the Italian Round Robin Test on Reverberation Rooms <i>Chiara Scrosati, Diego Annesi, Luca Barbaresi, Roberto Baruffa, Filippo D'Angelo, Giuseppe De Napoli, Michele Depalma, Antonino Di Bella, Sabato Di Filippo, Dario D'Orazio, Massimo Garai, Nicola Granzotto, Valter Lori, Francesco Martellotta, Antonio Moschetto, Francesco Pompoli, Andrea Prato, Pietro Nataletti, Fabio Scamoni, Alessandro Schiavi and Fabio Serpilli</i>	3998
Some comments on using a reference absorber for absorption measurements in reverberation rooms <i>Volker Wittstock, Heinrich Bietz and Sylvia Stange-Kölling</i>	4004
The effect of absorber placement on absorption coefficients obtained from reverberation chamber measurements <i>Jamilla Balint and Florian Muralter</i>	4012
Measurement of Diffuse-Field Sound Absorption Coefficient of Materials Using the Two Microphones Method <i>Paulo Medeiros Massarani, Ricardo Villela and Daniel Pazos</i>	4020
Design of a New Testing Chamber to Measure the Absorption Coefficient Down to 25 Hz <i>Peter D'Antonio, Mélanie Nolan, Efren Fernandez-Grande and Cheol-Ho Jeong</i>	4027
Experimental characterization of the decaying sound field in a reverberation room <i>Mélanie Nolan, Marco Berzborn and Efren Fernandez-Grande</i>	4035
On the Directional Properties of Energy Decay Curves <i>Marco Berzborn, Mélanie Nolan, Efren Fernandez-Grande and Michael Vorländer</i>	4043
A case study on the new reverberation room built in University of Technology Sydney <i>Xiaojun Qiu, Qiaoxi Zhu, Shuping Wang and Jiaxin Zhong</i>	4051
Practical aspects related to the measurement of the diffuse field absorption coefficient in scaled reverberation rooms <i>Louena Shtrepi, Francesca Latorella, Andrea Prato, Alessandro Schiavi, Marco Masoero and Arianna Astolfi</i>	4059
Prediction of the Sound Absorption of Micro-Perforated Panels whose Holes are Extended in Length by Tubes <i>John Laurence Davy, Mohammad Fard, Qian Zhang, Yadong Lyu and Jun Yang</i>	4067
Some notes about low frequency measurements in a reverberation room <i>Dario D'Orazio, Luca Barbaresi and Massimo Garai</i>	4075
Building FEM Low Frequency Room Models through Modal Decay Time Measurements <i>Roberto Magalotti and Valentina Cardinali</i>	4081
On the Use of Geometrical Acoustic Models of a Reverberant Chamber to Improve the Reliability of Sound Absorption Measurements <i>Francesco Martellotta, Ubaldo Ayr and Chiara Rubino</i>	4088

Wednesday, September 11

20 M - Effects of noise and room acoustics on communication among occupational voice users

- A pilot study in primary school on the effect of a noise monitoring system with lighting feedback on teachers' voice parameters, noise levels and subjective assessments 4096
Sonja Di Blasio, Giuseppina Emma Puglisi, Chiara Gervasi, Antonella Castellana, Silvia Murgia, Greta Minelli, Giuseppe Vannelli, Simone Corbellini, Alessio Carullo and Arianna Astolfi
- Performance Evaluation of Autocorrelation Technique for Automatic Speaker Identification in Various Environments 4104
Noha Korany
- Semantic Coherence and Speech Production in Adverse Listening Conditions 4109
Carine Signoret, Emil Holmer and Mary Rudner
- The potential of restorative spaces on noise-related wellbeing in schools 4115
Ingrid Verduyck, Rachel Bouserhal, Adriana Lacerda, Cécilia Borges and Annelies Bockstael
- Improvement of the sound environment for supporting communication at nursery facilities: Approaches for changing room acoustics and users' minds 4122
Saki Noguchi and Kanako Ueno
- Acoustic Quality of University Classrooms: a Subjective Evaluation of the Acoustic Comfort and Conditions at the University of Sharjah Classrooms 4130
Hussein Elmehdi

Wednesday, September 11

21 F - Indoor soundscaping and acoustic comfort

- Designing spaces and soundscapes. Integrating sonic previews in architectural modelling applications. 4138
Alessia Milo and Joshua Reiss
- The role of indoor soundscape methodology: From architectural design process to establishment of regulations 4146
Ugur Beyza Ercakmak and Papatya Nur Dokmeci Yorukoglu
- Characterization of the indoor kitchen soundscape 4154
Pieter Thomas, Luc Dekoninck, Stephanie van Hove, Anissa All, Peter Conradie, Lieven de Marez, Henk Huisseune, David Plets and Dick Botteldooren
- Correlations between sound level and loudness, intimacy, reverberation, clarity, spaciousness in sequential spaces 4158
Tingting Yang and Jian Kang
- Towards Understanding Healthy and Supportive Acoustic Environments: the Case of a Nursing Home 4164
Paul Devos, Pieter Thomas, Francesco Aletta, Tara Vander Mynsbrugge, Patricia de Vriendt, Dominique van de Velde and Dick Botteldooren
- Pleasantness of Typical Acoustic Environments inside a Living Room in a European Residential Context. 4170
Romain Dedieu, Catherine Lavandier, Cédric Camier and Sylvain Berger
- Acoustic Comfort in Multi-group Conversation Space: a Field Experiment in an Actual Cafe with Different BGM Levels 4178
Naoya Maruyama, Yasuhiro Hiraguri, Keiji Kawai and Mari Ueda
- Searching the Industrial Soundscape of The Urban Past of An Anatolian City: Eskişehir 4186
Özlem Gök Tokgöz, Aslı Özçevik Bilen and Özlem Kandemir
- The soundscape dimensions of third-class hospital ward in Indonesia 4194
Anugrah Sabdono Sudarsono, Sugeng Joko Sarwono, Aisyah Shabrina and Laudita Natasha Tamrin

Wednesday, September 11

21 N - Trends on the use of technology in soundscape analysis, design and planning

- New Trends in Sound Planning using Immersive Virtual Reality Technology 4200
Andy Chung, Terence Tsang and W M To
- Design for quiet living: tracing the development of projects in noise-affected areas with software-based data analysis and visualization 4206
Cristina Calleri, Louena Shtrepi, Alessandro Armando and Arianna Astolfi

Wednesday, September 11

21 O - Sound as part of digitalization of the Unesco and Unique sites

- Digitalizing the sounds of the past: the soundscapes of World Heritage rock art landscapes from Spain and Mexico 4214
Angelo Farina, Margarita Díaz-Andreu, Enrico Armelloni, Mathieu Picas, Leslie Zubieta and Tommaso Mattioli

Wednesday, September 11

24 B - Numerical analysis and experiment on structural acoustics

- Measurement and Simulation of Vibration Acceleration of a High-Voltage Three-Phase Gapped-Core Reactor 4219
Bart van der Aa, Bart Wijnhoven, Timo Overboom and Luc Dorpmanns
- Increased Radiation Efficiency Using Band Gap Effect 4227
Jaesoon Jung, Cheol-Ho Jeong and Jakob S. Jensen
- Numerical simulation of vibration damping by granular materials 4233
Masao Takeshima and Asakura Takumi
- On the estimation of DLF of highly damped structures 4241
Julio A. Cordioli, José V. Monteiro, Mathias Hinz, Guido T. Santos and Israel Pereira
- Assessing the similitude of vibrating plates 4249
Christian Adams, Joachim Bös and Tobias Melz
- Robust Virtual Sensing of the Exterior Noise Radiation from a Complex Structure in Different Acoustic Environments 4257
Sjoerd van Ophem, Elke Deckers and Wim Desmet
- The Effect of the Weld Type on Ensemble Average in SEA 4265
Paweł Nieradka and Sebastian Szarapow
- Vibration damping capabilities of treatments with frequency and temperature dependent viscoelastic material properties 4273
Martin Gröhlich, Marc Böswald and René Winter

Wednesday, September 11

24 G - Human Vibration

- A parameter study on measuring hand-arm vibrations of an impulsive vibrating tool applying the international standard 4281
Magdalena Scholz, Leopold Winter and Steffen Marburg
- Perceived discomfort for tri-axial helicopters vibrations 4289
Laurianne Delcor, Etienne Parizet, Julien Caillet and Julie Ganivet-Ouzeneau
- Comfort Evaluation on the drivers using Transfer Path Analysis 4295
Nihlatul Falasifah and Dhany Arifianto

Wednesday, September 11

Topic 01 - Posters: Active acoustic systems

Acoustic radiation modes and active structural acoustic control of coupled enclosure <i>Haichao Zhu, Rongfu Mao, Jinlong Liao and Changwei Su</i>	4303
Assessment of vibrations and structural noise at environmental impact studies: Current practices in Portugal and aspects to be improved for railway traffic in tunnels <i>Jorge V. Patrício and Sónia Antunes</i>	4311
Nonlinearities in Sound Field Control Systems <i>Eliás D. Lumpert, Finn T. Agerkvist, Franz Maria Heuchel and Jonas Brunskog</i>	4319
Acoustic Path Database for ANC In-Ear Headphone Development <i>Stefan Liebich, Johannes Fabry, Peter Jax and Peter Vary</i>	4326
Construction of IIR Filter for Adaptive Noise Control System of Boat Noise Reduction <i>Haruki Fukatsu and Kenji Muto</i>	4334
Numerical acoustic modelling of a ventilation unit by 3D FEM and application to the design of an ANC feedforward system. <i>Stéphane Lesoinne, Jean-Jacques Embrechts, Guillaume Vatin, Bastien Ganty and Yves Detandt</i>	4340

Wednesday, September 11

Topic 05/06 - Posters: History and Education

Acoucou Platform to Acquire Professional Skills and Knowledge in the Field of Acoustics <i>Karolina Maria Jaruszewska, Filip Baranski, Magdalena Piotrowska, Manuel Melon, Olivier Dazel, Michael Vorländer, Lukas Aspöck, Marko Horvat, Kristian Jambrošić, Monika Rychtarikova, Léopold Kritly and Andreas Herweg</i>	4348
--	------

Wednesday, September 11

Topic 08 - Posters: Noise and vibration policy and assessment

Construction noise management and control policy in Hong Kong and innovative quieter methods for renovation work <i>Joe Siu Cheong Mok, Cheung-Lam Wong, Chi-Wing Law and C.K. Lee</i>	4356
---	------

Wednesday, September 11

Topic 10 - Posters: Vehicle acoustics (air, road, rail, water, ...)

Numerical simulation of in-vehicle sound field under conditions of open or closed car windows <i>Liang Linda, Guangzheng Yu and Le Yu</i>	4364
Sound field reproduction in a cabin using loudspeakers <i>Dong Wang, Guosong Feng, Gongbo Ma and Xinming Li</i>	4370
Artificial Neural Network predicts noise transfer as a function of excitation and geometry <i>Dimitrios Ernst Tsokaktsidis, Timo von Wysocki, Frank Gauterin and Steffen Marburg</i>	4378
Effect of temperature variation on the perceived annoyance of rattle sounds in the automotive industry <i>Mohsen Bayani, Casper Wickman and Rikard Söderberg</i>	4383

Wednesday, September 11

Topic 11 - Posters: Environmental sound (sources, propagation)

Noise Distribution Change of the Backside Urban Blocks depending on the Plans of the Roadside Buildings <i>Chan Hoon Haan and Yong Seong Kim</i>	4391
Estimation of Infrasound Source Positions using Multipoint Observation <i>Zhenglie Cui, Ryosuke Sasahara, Ryouichi Nishimura and Yôiti Suzuki</i>	4399
Urban canyon noise assessment: sound incidence on façade and mitigating actions <i>Jessica de Almeida Xavier, Aline Lisot and Paulo Fernando Soares</i>	4406
Analysis of Low-Frequency Noise from Wind Turbines using a Temporal Noise Code <i>Franck Bertagnolio, Helge Madsen and Andreas Fischer</i>	4414
Environmental noise event classification based on self-organizing map using psychoacoustic features and spatial filtering <i>Jure Murovec, Luka Čurović, Tadej Novaković and Jurij Prezelj</i>	4422
Prediction of quiet side levels in noise map calculations - an initial suggestion of methodology <i>Jens Forssén, Andreas Gustafson, Laura Estévez-Mauriz, Marie Haeger-Eugensson and Meta Berghauser Pont</i>	4430
Effect of handy microphone movement in Mixed Reality visualization system of sound intensity <i>Yuta Kataoka, Wataru Teraoka, Yasuhiro Oikawa and Yusuke Ikeda</i>	4438

Wednesday, September 11

Topic 14 - Posters: Underwater acoustics

An effective method for measuring the thickness of Cobalt-rich Manganese Crust based on the neighborhood information and dual-channel information <i>Feng Hong, Haihong Feng, Minyan Huang and Binxian Wang</i>	4446
A Study of Acoustic Characteristics at Sea Bottom Sediment Including Organic Matter <i>Hanako Ogasawara, Kazuyoshi Mori and Hiroshi Yagi</i>	4454
Snapping shrimps sound in Black sea <i>Nikolay Grigorievich Bibikov, Andrey Ninelovich Serebryany, Michail Pavlovich Ivanov and Oleg Borisovich Ovchinnikov</i>	4459
Time Arrival Structures of the Empirical Green's Function Extracted from Ambient Noise in Shallow Water <i>Xishan Yang and Fenghua Li</i>	4465
Upwelling Effect on Acoustic Propagation in the Cabo Frio Island Bay <i>Vicente Junior Barroso, Rogério Calazan, Marcus Simões and Sérgio Jesus</i>	4472

Wednesday, September 11

Topic 17 - Posters: Physical acoustics

The use of Nested Helmholtz Resonators for Broadband Low Frequency Sound Absorption <i>Alexander James Dell</i>	4480
Investigation of Elastic Surface and Edge Modes in Finite-Size Three-Dimensional Phononic Crystals <i>Tian-Xue Ma, Quan-Shui Fan, Chuanzeng Zhang and Yue-Sheng Wang</i>	4486
Chessboard Design of Pyramid-Core Sandwich Structures <i>Zhengyang Li, Tian-Xue Ma, Fengming Li and Chuanzeng Zhang</i>	4490
A monostable acoustic metamaterial for broadband low frequency sound absorption <i>Xianhui Li, Tuo Xing, Junjuan Zhao and Xiaoling Gai</i>	4491
Validity Assessments of Optical Transfer Function Measurements for Technically Premixed Flames <i>Audrey Blondé, Giacomo Bonciolini and Nicolas Noiray</i>	4497

Wednesday, September 11

Topic 20 - Posters: Room acoustics

Fourier Spectral Method for Acoustic Simulation with Domain Enclosed by Curved Boundary <i>Yu Kohase, Tsubasa Kusano, Kohei Yatabe and Yasuhiro Oikawa</i>	4498
Differences in Sound Absorption of Samples with Periodic Porosity Produced using Various Additive Manufacturing Technologies <i>Tomasz G. Zielinski, Kamil C. Opiela, Piotr Pawlowski, Nicolas Dauchez, Thomas Boutin, John Kennedy, Daniel Trimble and Henry Rice</i>	4505
Drinking Straws as a Broadband Sound Absorber <i>Ioanna Christia, Martin Tenpierik, Foteini Setaki and Marcel Bilow</i>	4513
Study on the Acoustic Environment of Tibetan Buddhist Temples in Han Region <i>Ziqing Tang, Hui Xie and Fenghua Lu</i>	4521
Crossover Frequency Estimation From Statistical Features of a Room Transfer Function <i>Marcio Henrique de Avelar Gomes, Paulo Bonifacio, Eric Brandão, Luis Henrique Santana, Elvis Bertoti, Rodrigo Catai and Hilbeth Azikri de Deus</i>	4529
The effect of reverberated speech on working memory: Toward an optimal balance of calmness and liveliness in libraries <i>Kazuma Shamoto, Hiroko Terasawa and Hiroshi Itsumura</i>	4537
Acoustic simulation of the sound quality of standardized classrooms in higher education institutions in Natal / RN <i>Luciana Da Rocha Alves and Bianca Carla Dantas de Araújo</i>	4545
Audible room acoustic differences of public preschools in the Gothenburg area <i>Julia Winroth, Denice Perkhed, Erling Nilsson, Kerstin Persson Waye and Ann-Charlotte Thysell</i>	4553
On the production mechanisms of the singer's formant <i>Bernd Kröger</i>	4554
Audio-visual Mutual Effect of Spatial Impression in Architectural Space <i>Chiharu Hiraoka, Takane Terashima, Ayumi Ishikawa, Yasunobu Tokunaga and Xue Gong</i>	4562
Experiment on Audio-visual Mutual Effect on Subjective Impression in Architectural Space by HMD VR Display <i>Takane Terashima, Chiharu Hiraoka, Xue Gong, Yasunobu Tokunaga and Ayumi Ishikawa</i>	4570
Sound Field Evaluation by using Closely Located Four-point Microphone Method and Mixed Reality Technology <i>Wataru Teraoka, Yuta Kataoka, Yasuhiro Oikawa and Yusuke Ikeda</i>	4576
A Study on Discrimination of Acoustic Conditions in an Audience Area of an Auditorium <i>Yasunobu Tokunaga, Ryo Inoue and Takane Terashima</i>	4583
Comparison between sound absorption coefficients of resonant membrane panels laminated bamboo tested in reverberant chamber and virtual simulation <i>Brunno Guilherme Barbosa de Sa, Jaime Gonçalves de Almeida, Maria Luiza de Ulhôa Carvalho and Rafael Caetano Cardoso Boaventura</i>	4590
Acoustic adjustment of large sports halls - case study: correction of the acoustic response of an Ice Arena for uses other than skating <i>Alberto Piffer and Elena Resenterra</i>	4598
The acoustical assessment of the commercial buildings - design assumptions <i>Elżbieta Nowicka</i>	4606
Visualization of Distribution of Room Acoustic Parameters by Using Mobile Robot <i>Masashi Uehara, Naoki Ishikawa and Shigeki Okawa</i>	4611
Reverberation Time Estimation through Neural Networks <i>Antonio Petraglia, Rodrigo Prates, Mariane Rembold Petraglia and Julio Cesar Boscher Torres</i>	4617
Fluttering Reverberance: Real Life Examples of Chaotic Billiards with Convex Sections <i>Trevor Cox, Richard Hughes and Dominic Parry-Merrell</i>	4625

Table of Contents - ICA 2019 / EAA Euroregio

In-situ Sound Absorption Measurement Method of Materials Using Ensemble Averaging - Comparison of Proposed Method with Tube Method or Reverberation Room Method - <i>Noriko Okamoto, Otsuru Toru, Reiji Tomiku and Kaho Ito</i>	4633
A Ray tracing algorithm developed at the Acoustical engineering course of UFSM in Brazil <i>Eric Brandão, Rodrigo Dal Fiume, Gonçalo Morgado, William D'Andrea Fonseca and Paulo Mareze</i>	4638
The Importance of Several Room Acoustic Descriptors in Operation Rooms <i>Mai-Britt Beldam</i>	4646
Acoustic conditions of clinic rooms for sound field audiometry <i>Valentina Zapata-Rodriguez, Cheol-Ho Jeong, Ida Hoffmann, Wan-Ho Cho, Mai-Britt Beldam and James Michael Harte</i>	4654

Wednesday, September 11

Topic 24 - Posters: Structure-borne sound and vibration engineering

Piecewise Bilinear Characteristics of Acoustic Mode In Dual Pulse Solid Rocket Motor Combustion Chamber <i>Hao Le, Yingchen Wang, Jun Chen and Xiaoming Shi</i>	4660
Verification of Accuracy Using Measured Values of Low Frequency Noise Numerical Analysis Generated from Expressway Bridge <i>Hiroshi Iwabuki, Osamu Funahashi, Masayuki Shimura and Noboru Kamiakito</i>	4668
Resonance modes for exterior vibro-acoustic problems, application to a dielectric elastomer loudspeaker <i>Emil Garnell, Olivier Doaré and Corinne Rouby</i>	4676
Study on the sound transmission loss of a truncated conical shell excited by an incident plane acoustic wave <i>Masoud Golzari and Ali Ashgar Jafari</i>	4684
Study on the influence of kinetic parameters of propeller on acoustic and vibration characteristics of propulsion shafting <i>Yangyang Zhang and Jun Suo</i>	4692
Investigation of the applicability of acoustic emission and vibration analysis to describe the thermo-mechanical mechanism during ultrasonic metal welding <i>Elie Abi Raad, Isabel Balz, Uwe Reisgen and Michael Vorländer</i>	4700
Influences on structural intensity for injection-moulded thermoplastic parts <i>Dennis Netzband, Andreas Ujma and Elmar Moritzer</i>	4708
Field test of resonant frequency monitoring utilizing background vibration in various buildings <i>Yoshinori Takahashi, Naru Sato and Yasutaka Nakajima</i>	4712
Identification of dominant noise sources in a diesel power group <i>Hasan Hassoun, Jaafar Hallal, Mohammad Hammoud and Denis Duhamel</i>	4720
An adaptive structural excitation system as a tool for structure-borne noise research <i>Marco Norambuena and René Winter</i>	4726
Research on Structural Vibration Control Based on Local Stiffness Reinforcement and Local Constrained Damping <i>Simi Tang</i>	4734
Classification of operating conditions of machinery combined with transmissibility function method <i>Peidong Jia, Jing Wang, Mingmei Han, Xun Wang, Xiaobin Cheng and Jun Yang</i>	4740

Wednesday, September 11

Topic 25 - Posters: Ultrasound

3-D numerical simulation of nonlinear elastic wave propagation in locally damaged materials <i>Benjamin Ankey and Chuanzeng Zhang</i>	4746
Temperature dependence of a propagation speed of longitudinal waves in different solids for use as a wedge material in an extreme-temperature-resistant ultrasonic transducer <i>Oleg Shapovalov, Mate Gaal, Gerald Hönig, Thomas Gradt and Sabine Weiß</i>	4754
Use of Higuer-Harmonic Generation To Detecting Cracks due To Steel Corrosion In Reinforced Concrete <i>Jaime Ramis, Marina Miró, Jesus Carbajo, Pedro Poveda, Guillem de Vera and Miguel A. Climent</i>	4761
Numerical Analysis of the Nonlinear Restoring Force Based on Near- field Acoustic Levitation <i>Yuanyuan Liu, Minghui Shi, Kheirollah Sepahvand and Steffen Marburg</i>	4769
3D Imaging Method for an Air-Coupled 40 kHz Ultrasound Phased-Array <i>Gianni Allevato, Jan Hinrichs, Dominik Großkurth, Matthias Rutsch, Jan Adler, Axel Jäger, Marius Pesavento and Mario Kupnik</i>	4775
The Effect of 40 kHz Ultrasonic Noise Exposure on Human Hearing <i>Andrew Di Battista</i>	4783
Agglomeration of aerosol using intense standing wave field of cylindrical shape <i>Rintaro Motoi, Takuya Asami and Hikaru Miura</i>	4789
Development of aerial ultrasonic source with cylindrical radiation surface for ultrasonic agglutination <i>Takuya Asami and Hikaru Miura</i>	4795
Removal of extraneous matter by ultrasonic washing in running water <i>Hosaka Hidenobu, Takuya Asami and Hikaru Miura</i>	4803
DNA amplification by sound and ultrasound frequency vibration <i>Ryu Kobayashi, Seiji Yoneda and Shigeo Yamaguchi</i>	4808
Light scattering observation of oscillation of a bubble in acoustic cavitation cloud <i>Takanobu Kuroyama</i>	4813
Development of longitudinal-torsional vibration source with a helical slits transmission rod <i>Shinya Oishi, Takuya Asami and Hikaru Miura</i>	4821

Wednesday, September 11

Topic 27 - Posters: Virtual Acoustics

A study on the relationship between speed of sound image and evaluation value of moving sound image <i>Mika Kurabayashi and Kenji Muto</i>	4827
A Physically Motivated Approach for Binaural Simulation of Moving Sound Sources and Receivers <i>Christoph Urbanietz and Gerald Enzner</i>	4833
Tournament Formats as Method for Determining Best-fitting HRTF Profiles for Individuals wearing Bone Conduction Headphones <i>Tray Minh Voong and Michael Oehler</i>	4841
Spatial Upsampling of Individual Sparse Head-Related Transfer Function Sets by Directional Equalization <i>Christoph Pörschmann, Johannes M. Arend and Fabian Brinkmann</i>	4848

Thursday, September 12

Thursday, September 12

01 C - Metamaterials for active and passive acoustic control

Active Poro-elastic Acoustic Meta Materials <i>Christopher Fuller</i>	4856
Analysis and Optimisation of an Active Noise Control System as a Potential Acoustic Metamaterial Building Block <i>Joe Tan, Jordan Cheer and Stephen Daley</i>	4862
Design of Acoustic Partitions with Thin Plate-like Acoustic Metamaterials <i>Felix Langfeldt and Wolfgang Gleine</i>	4870
Non-linear Metamaterial Structures: Array of Particle Dampers <i>Sifa Gul Demiryurek, Anton Krynkin and Jem Rongong</i>	4878

Thursday, September 12

02 A - Microphone array methods in room acoustics

Acquisition of Bi-Directional Reflectance Functions by Nearfield Acoustical Holography - a preliminary study <i>Jonathan Hargreaves</i>	4885
Improving in-situ sound absorption measurements using sparse multichannel blind deconvolution <i>Bruno Masiero, Stelamaris Bertoli and Alvaro Pais</i>	4893
An application of multi-scale directional dictionaries to RIR interpolation <i>Elias Zea</i>	4901
Higher-order processing of spatial impulse responses <i>Leo McCormack, Archontis Politis, Oliver Scheuregger and Ville Pulkki</i>	4909
Deep Learning Applied to Dereverberation and Sound Event Classification in Reverberant Environments <i>Mingsian R. Bai and Wen-Chuan Chen</i>	4917
Binaural Dereverberation Based on Delayed Widely Linear Prediction in the Time Domain <i>Xin Leng, Jingdong Chen and Jacob Benesty</i>	4924
Dereverberation Based on Deep Neural Networks with Directional Feature from Spherical Microphone Array Recordings <i>Jeongmin Liu, Byeongho Jo and Jung-Woo Choi</i>	4932
Acousto-optic sensing - spatial reconstruction of the sound field enclosed in a room <i>Samuel Arturo Verburg and Efren Fernandez-Grande</i>	4940
A High Order Rigid Spherical Microphone Array Design Using MEMS Microphones <i>Marco Berzborn and Michael Vorländer</i>	4948
Robust localization of early reflections in a room using semi real-valued EB-ESPRIT with three recurrence relations and Laplacian constraint <i>Byeongho Jo and Jung-Woo Choi</i>	4949
Double Tetrahedral Intensity Probes for Reducing the Spatial Bias Error of Source Localization <i>In-Jee Jung and Jeong-Guon Ih</i>	4957
Sound field reconstruction in a room from spatially distributed measurements <i>Efren Fernandez-Grande</i>	4961

Thursday, September 12

02 W - General 'Audio signal processing (measurement, sensors, arrays)'

Measurement of the four pole matrix of a sample in a transmission tube <i>Rene Boonen</i>	4969
Ultrasonic Remote Sensing for Precision Agriculture <i>Stuart Bradley and Mathew Legg</i>	4977
PyTTa: Open Source Toolbox for Acoustic Measurements and Signal Processing <i>William D'Andrea Fonseca, João Vitor Paes, Matheus Lazarin, Marcos Vinicius Reis, Paulo Mareze and Eric Brandão</i>	4983
A Theory for Stethoscope Acoustics <i>Maximilian Nussbaumer, Leyre Troyas Martinez and Anurag Agarwal</i>	4991
Noise Intensity Prediction from Video Frames using Deep Convolutional Neural Networks <i>Leonardo Oliveira Mazza, José Gabriel Rodríguez Carneiro Gomes and Julio Cesar Boscher Torres</i>	4999

Thursday, September 12

04 B - Sound insulation in wooden construction

Floor Impact Sound Insulation of the Six-story Wood-frame Model Building <i>Atsuo Hiramitsu, Ryuta Tomita, Hiraikawa Susumu and Masayoshi Sato</i>	5007
Hybrid joist floor constructions. Evaluation of measurement results. <i>Anders Homb</i>	5013
Application of elastic interlayers at junctions in massive timber buildings <i>Stefan Schoenwald, Niko Kumer, Sebastian Wiederin, Norbert Bleicher and Bernhard Furrer</i>	5021
Numerical simulation of CLT floors and comparison with empirical predictive models <i>Marco Caniato, Federica Bettarello and Andrea Gasparella</i>	5029
Development of a quick and non-invasive measurement method for the extraction of the dispersion relation in CLT plates for the evaluation of the elastic parameters <i>Arved Thies, Federica Morandi, Luca Barbaresi, Massimo Garai, Jörn Hübelt and Niko Kumer</i>	5036

Thursday, September 12

04 C - Acoustic regulations and quality classes for buildings 1

Survey method for rubber ball impact sound <i>Jeong Jeongho</i>	5044
Rain Noise <i>Brian Donohue and John Pearse</i>	5050
Ratings and classifications for high-frequency impact noise isolation <i>Wayland Dong, John Loverde and Jochen Scheck</i>	5057
Airborne sound insulation in dwellings - single numbers weighted from 50-3150 Hz correlated to Swedish questionnaire surveys <i>Christian Simmons and Fredrik Ljunggren</i>	5063
Is noise annoyance from neighbours in multi-storey housing associated with fatigue and sleeping problems? <i>Birgit Rasmussen and Ola Ekholm</i>	5071
Perceived noises in your residence: which one annoys the most? <i>Talita Pozzer, Rodrigo Silva Motta, Elaine Lemos, Débora Leite and Iara Cunha</i>	5079
Subjective Evaluation of Acoustic Quality Classes in Dwelling <i>Seda Kulak and Nurgun Bayazit</i>	5087

Table of Contents - ICA 2019 / EAA Euroregio

Comparison of Acoustical Performance and Subjective Evaluation in Residential Buildings <i>Ayca Sentop and Nurgun Bayazit</i>	5094
Sound insulation between dwellings - Comparison of national requirements in Europe and interaction with acoustic classification schemes <i>Birgit Rasmussen</i>	5102
Acoustic regulation in hospitals - Interior acoustics improving the recovery of patients <i>Georg Schöner</i>	5110

Thursday, September 12

04 L - Evaluation of floor impact sound insulation

Development of a modified impact testing method for simultaneously evaluating multiple floor toppings <i>Wayland Dong and John Loverde</i>	5112
New single-number quantities for evaluation of impact sound insulation <i>Mikko Kylliäinen, Petra Karoliina Virjonen and Valterri Hongisto</i>	5119
Efficient numerical prediction and experimental validation of impact sound radiation by timber joist floors <i>Pengchao Wang, Cédric van Hoorickx, Geert Lombaert and Edwin Reynders</i>	5126
The preliminary study on subjective rating of different floors characterised by $L_{n,w+Cl,50-2500}$ <i>Vojtech Chmelík, Jakub Benklewski, Monika Rychtarikova, Dominik Kisić, Kristian Jambrošić, Marko Horvat and Herbert Muellner</i>	5134
Perception of Combined Indoor Noise Sources in Lightweight Buildings <i>Alessia Frescura and Pyoung Jik Lee</i>	5140
Influence of suspended ceiling type of residential building on heavyweight floor impact sound <i>Song Hansol, Jongkwan Ryu, Inho Kim and Yong Hee Kim</i>	5147

Thursday, September 12

08 W - General 'Noise and vibration policy and assessment'

Model for total noise assessment under consideration of source specific exposure-response relationships <i>Manfred Liepert, Johannes Lang, Ulrich Möhler and Dirk Schreckenberger</i>	5153
Infrasound and low-frequency noise immission. Structural Vibrations Induced by industrial noise. Improving the ISO 1996- 2:2017 in order to propose a plausible standardized procedure for using in Legal noise assessment <i>Walter Alfredo Montano and Elena Gushiken</i>	5159
A New Approach for Road Traffic Noise Mapping Using Big Data <i>Gaetano Licitra, Antonino Moro, Luca Teti, Alessandro Del Pizzo and Francesco Bianco</i>	5167

Thursday, September 12

10 C - Design and control of the sound environment in a vehicle cabin

Evaluation of Independent Sound Zones in A Car <i>Ji-Ho Chang and Wan-Ho Cho</i>	5174
Sounds for Enhancing Energy Efficient Driving: A Simulator Pre-Study <i>Arne Nykänen, Johan Fagerlönn, Stefan Lindberg, Roger Johnsson and Sathish Kumar Ramanathan</i>	5182
Investigation of Effect on the Acoustic Transfer Function in a Vehicle Cabin According to Change of Configuration <i>Wan-Ho Cho and Ji-Ho Chang</i>	5190
Factors Analysis of Gear Sound by Using Numerical Simulation <i>Chengfeng Pu, Takafumi Takeda, Toru Hama and Takeshi Toi</i>	5196

Design of Optimal Car Interior Sound Improving Driving Feeling <i>Su-Ho Cha, Sung-Hwan Shin and Jae-Ho Yang</i>	5204
--	------

Thursday, September 12

12 A - Spatial audio: Reproduction techniques and signal processing 1

Investigating Uncertainties in Fast HRTF Measurements <i>Shaima'A Doma, Hark Braren and Janina Fels</i>	5211
Independent modes and dimensionality reduction of head-related transfer functions based on tensor decomposition <i>Tong Zhao and Bosun Xie</i>	5212
Objective Differences between Individual HRTF Datasets of Children and Adults <i>Hark Braren and Janina Fels</i>	5220
Rendering virtual source at various distances using binaural Ambisonics scheme in dynamic virtual auditory display <i>Bosun Xie and Jianliang Jiang</i>	5225
Local Ambisonics panning method for creating virtual source in the median plane <i>Kailing Yi and Bosun Xie</i>	5233
The limitation of static transaural reproduction with two frontal loudspeakers <i>Lulu Liu and Bosun Xie</i>	5240
Effect of individualized near-field head-related transfer functions on distance perception in dynamic virtual auditory display <i>Guangzheng Yu, Liliang Wang, Liang Linda, Bosun Xie, Jianliang Jiang and Chengyun Zhang</i>	5247
3-D Sound Image Localization in Reproduction of 22.2 Multichannel Audio Based on Room Impulse Response Generation with Vector Composition <i>Kaige Zheng, Misaki Otsuka and Takano Nishiura</i>	5252
Evaluation of Moving Sound Image Localization for Reproduction of 22.2 Multichannel Audio Using Up-mix Algorithm <i>Hiromu Suzuki and Takano Nishiura</i>	5260
Digital Cinema: Analysis of Multi-Channel Systems to Control Sound Levels <i>Peter Houtave</i>	5268

Thursday, September 12

13 A - Flow duct acoustics

Generalized Method of Describing Acoustic Duct-Like System as a Multiport <i>Anna Snakowska and Jerzy Jurkiewicz</i>	5276
Characterization of the centrifugal fan noise generated in residential HVAC systems using in-duct measurements <i>Sarah van Tricht, Pieterjan Broos, Hervé Denayer, Maarten Vanierschot and Wim de Roeck</i>	5284
Trained Algorithms for Mode Decomposition in Ducts <i>Stefan Sack and Mats Åbom</i>	5292
Prediction of the nonlinear response of an acoustically forced flow with linearized Navier-Stokes equations <i>Abel Faure, Claire Bourquard and Nicolas Noiray</i>	5299
Self-Excited Vibration of Valve Caused by Hydrodynamic Force <i>Xiangdong Liang</i>	5307

Thursday, September 12

13 D - Computational flow-generated hydroacoustics

- Simulation of flow noise generated by the interaction of inflow turbulence with the leading edge of a foil 5312
Mattias Liefvendahl
- Noise from a blunt edged flat plate in a reverberant water tunnel 5320
Paul Croaker, James Venning, Mahmoud Karimi, Paul Brandner, Con Doolan and Nicole Kessissoglou

Thursday, September 12

13 E - Aeroacoustics and Flow Controls

- Aerofoil trailing edge self-noise reduction by Surface Mounted Attenuation Devices 5327
Edvard Schroeder, Tze Pei Chong, M. Kamruzzaman, Jeremy Hurault and Phillip Joseph
- The Effect of flow-permeable material on the Flow Field and the Aerodynamic Noise of Cylinders 5335
Thomas Geyer and Richard Peschel
- On the Effects of Leading Edge Serrations on Aeroacoustic Properties during Stall 5343
Yannick D. Mayer, Bin Zang and Mahdi Azarpeyvand
- Optimisation of Leading-edge Undulations of a NACA 65(12)-10 Aerofoil for Noise Reduction and Aerodynamic Enhancement 5351
Kwing-So Choi, Jung-Hoon Kim, Giovanni Lacagnina, Phillip Joseph, Seyed Mohammad Hasheminejad, Tze Pei Chong, Muhammad Farrukh Shahab, Mohammad Omidyeganeh and Alfredo Pinelli
- Leading- and trailing-edge noise reduction using serrations of new geometry 5359
Benshuai Lyu, Lorna Ayton and Chaitanya Paruchuri
- Aeroacoustic and Aerodynamic Study of Trailing-edge Serrated Airfoils in Tandem Configuration 5367
Xiao Liu, Syamir Alihan Showkat Ali, Mahdi Azarpeyvand and Yannick D. Mayer
- Numerical and experimental investigation on effects of blade tip-rake on vortex structure and aerodynamic noise of axial-flow fans in an outdoor unit of air-conditioners 5375
Seo Yoon Ryu, Cheolung Cheong, Jong-Uk Kim, Byeong Il Park and Se Min Park
- Near-field Aeroacoustic Characteristics of a Stalled NACA 0012 Aerofoil 5383
Yannick D. Mayer, Bin Zang and Mahdi Azarpeyvand
- An Experimental study on Aeroacoustics and Shock Dynamics Associated with Hartmann Whistle 5391
Sonu K Thomas and K Srinivasan

Thursday, September 12

14 A - Signal processing and inversion in underwater acoustics 2

- Acoustic Signal Characterization using Hidden Markov Models with applications in Acoustical Oceanography. 5399
Costas Smaragdakis and Michael Taroudakis
- Target Detection Method for Reverberant Environments in Continuous-wave Active Sonar System based on Group Multichannel Nonnegative Matrix Factorization 5400
Seokjin Lee
- Estimation of bottom parameters using measurement and analysis of sound intensity fluctuations in the presence of moving nonlinear internal waves in shallow water. 5408
Boris Katsnelson, Valery Grigorev, Yanyu Jiang and Yun Ren
- Method to determine far-field beam pattern of long array from subarray beam pattern measurements 5416
Donghwan Jung, Jeasoo Kim, Hongju Gu and Sungyong Moon

Thursday, September 12

15 A - Uncertainty Quantification in Aero- and Vibro-Acoustics

- | | |
|--|------|
| Reliability of experimentally determined damping values
<i>Christian A. Geweth, Simon Boche, Kheirollah Sepahvand and Steffen Marburg</i> | 5422 |
| Lumped parameter model and Monte Carlo Simulation to study middle ear uncertainties
<i>Julio A. Cordioli, Lucas Lobato and Stephan Paul</i> | 5426 |

Thursday, September 12

15 D - Boundary and finite element methods in acoustics and vibration 1

- | | |
|--|------|
| Numerical Investigation of Indirect Combustion Noise Mechanisms in a Nozzle
<i>Thomas Deconinck, Antoine Vallon, Alexis Appel de Gardane, Yves Detandt and César Legendre</i> | 5434 |
| Air Flow Computations for Helmholtz Resonators in a Sound Field
<i>Norbert Gorenflo, Tobias Merkel and Jonas Stein</i> | 5442 |
| The Time-Explicit Nodal Discontinuous Galerkin Method Applied to Acoustic-Structure Interaction Problems
<i>Kirill Shaposhnikov, Mads J. Herring Jensen and Elin Svensson</i> | 5450 |
| Fast Algorithms Applied to the Acoustical Energy Boundary Element Method
<i>Matthias Ram and Otto von Estorff</i> | 5457 |
| Efficient Evaluation of Flow Induced Sound Sources at Low Frequency by Fast Multipole BEM
<i>Takayuki Masumoto, Yosuke Yasuda, Naohisa Inoue and Tetsuya Sakuma</i> | 5465 |
| Efficient Evaluation of Sound Radiation of an Electric Motor Using Model Order Reduction
<i>Martin Eser, Caglar Gürbüz, Lennart Moheit, Marold Moosrainer and Steffen Marburg</i> | 5473 |

Thursday, September 12

15 W - General 'Numerical, computational and theoretical acoustics'

- | | |
|--|------|
| Numerical simulation of nonlinear viscothermal acoustic wave propagation
<i>Jan Albertus de Jong and Erwin Kuipers</i> | 5481 |
| Adjoint-based computation of shape sensitivity in a Rijke-Tube
<i>Georg A. Mensah, Alessandro Orchini and Jonas P. Moeck</i> | 5489 |
| Exploration of the pseudospectral method for auralizations
<i>Jorge Petrosino, Lucas Fernando Landini, Andres Bonino Reta and Georgina Alejandra Lizaso</i> | 5497 |

Thursday, September 12

16 A - Articulation and other transients

- | | |
|--|------|
| Assessing the role of onsets for musical instrument identification in an auditory modeling framework
<i>Kai Siedenburg, Marc René Schädler and David Hülsmeier</i> | 5505 |
| The Role of Attack Transients in Timbral Brightness Perception
<i>Charalampos Saitis, Kai Siedenburg, Paul M. Schuladen and Christoph Reuter</i> | 5506 |
| Non-iterative, conservative schemes for geometrically exact nonlinear string vibration
<i>Michele Ducceschi and Stefan Bilbao</i> | 5507 |
| Numerical simulation of transients in single-reed woodwind instruments
<i>Sebastian Schmutzhard, Montserrat Pàmies-Vilà, Alex Hofmann and Vasileios Chatziioannou</i> | 5515 |
| The effect of fast trombone slide glissandi on the mechanics of artificial lips
<i>Amaya Lopez-Carromero, Jonathan Kemp and Donald Murray Campbell</i> | 5522 |

A Survey of Recent Studies on Initial Transients in Free Reed Oscillation <i>James Cottingham</i>	5530
A Sustained Vowel Replacing algorithm based on Iterative Formant Filtering <i>Chun-Tang Hsu and Yi-Wen Liu</i>	5536
Thursday, September 12	
16 W - General 'Musical acoustics'	
Spectral and Mathematical Music Theory Analyses of the Ikoro Drum Using Visualizations and Sonifications of Beat-Class Theory. <i>Stephen G. Onwubiko, Neilsen Tracianne and Andrea M. Calilhanna</i>	5543
Ikorodo Music Analyzed Through Visualizations and Sonifications of Beat-Class Theory <i>Andrea M. Calilhanna, Stephen G. Onwubiko and Tobi Kemewerigha</i>	5551
Procedure for arranging backing score for ensemble music by evaluating ease of playing on instrumentalists <i>Nozomiko Yasui and Masanobu Miura</i>	5559
Anti-phase synchronization between the oscillation in the pipe and that in the foot of a flue organ pipe <i>Kin'Ya Takahashi, Sho Iwagami, Shuhei Tateishi, Genki Tsutsumi, Taizo Kobayashi and Toshiya Takami</i>	5565
Reproducibility of Mode Transition of Edge Tone with DNS and LES <i>Sho Iwagami, Taizo Kobayashi, Kin'Ya Takahashi and Yuji Hattori</i>	5573
Thursday, September 12	
17 D - Acoustic Metamaterials 2	
Non-reciprocity in discrete and continuous lattice systems via mechanical modulation <i>Michael R. Haberman, Benjamin Goldsberry and Samuel Wallen</i>	5580
Sound Insulation using Metaatoms with Willis Coupling <i>Anton Melnikov, Sebastian Oberst, David Powell and Steffen Marburg</i>	5588
Design of a Resonator-Based Metamaterial for Broadband Control of Transverse Cable Vibration <i>Lawrence Singleton, Jordan Cheer and Stephen Daley</i>	5589
Airborne and ultrasonic characterisation of acoustic surface waves on structured plates <i>Tim Starkey, Alastair Hibbins, J Roy Sambles and John Smith</i>	5597
Design Of Multi-directional Acoustic Cloaks Using Two-dimensional Shape Optimization And The Boundary Element Method <i>Peter Risby Andersen, Vicente Cutanda Henriquez, Lorenzo Sanchis and José Sánchez-Dehesa</i>	5600
Thursday, September 12	
17 F - Acoustic propagation and flames in combustors	
Background-oriented Schlieren of entropy waves advected in straight duct <i>Markus Weilenmann, Yuan Xiong and Nicolas Noiray</i>	5607
Study of the Relation between Entropy Flux Density Production and Thermal Efficiency of a Thermoacoustic Engine <i>Mariko Senga and Shinya Hasegawa</i>	5615
Experiments on self-excited thermoacoustic oscillations in an air-filled closed tube <i>Nobumasa Sugimoto and Keisuke Minamigawa</i>	5619
Amplitude Death in Coupled Thermoacoustic Oscillators with Frequency Detuning <i>Hiroaki Hyodo and Tetsushi Biwa</i>	5627

A semi-analytical solution for acoustic wave propagation in varying area ducts with mean flow <i>Saikumar Reddy Yeddula and Aimee Morgans</i>	5633
--	------

Thursday, September 12

18 B - Objective measures of auditory function

Selective attention in the brainstem and speech-in-noise comprehension <i>Marina Saiz Alia, Antonio Elia Forte and Tobias Reichenbach</i>	5641
Intelligibility of Filtered Speech and its Relation to Electrophysiological Markers of Supra-threshold Hearing Deficits <i>Markus Garrett, Viacheslav Vasilkov and Sarah Verhulst</i>	5647
The ORN component as an objective measure of concurrent sound segregation <i>Alexandra Bendixen</i>	5651
Sensory resolution drives auditory responses in lateral frontal cortex <i>Antje Ihlefeld and Min Zhang</i>	5659
Investigating the Cortical Representation of Speech Melody using Near-infrared Spectroscopy <i>Kurt Steinmetzger, Martin Andermann, Esther Megbel, Zhengzheng Shen, Mark Praetorius and Andre Rupp</i>	5664
Audiovisual speech processing and listening effort in untreated age-related hearing loss: evidence from functional magnetic resonance imaging <i>Christiane Thiel and Stephanie Rosemann</i>	5671
Acoustic input impedance of infants with normal and pathological middle ear <i>Tobias Sankowsky-Rothe, Andreas Becker, Karsten Plotz, Rüdiger Schönfeld, Andreas Radeloff, Steven van de Par and Matthias Blau</i>	5675

Thursday, September 12

18 M - Statistics in auditory scenes

Neural Mechanisms of Temporal Processing in the Central Auditory System: A Theory of Gap Detection <i>Jennifer F. Linden</i>	5681
Functional segregation of Ferret Auditory Cortex probed with natural and model-matched sounds <i>Agnès Landemard, Célian Bimbard, Shihab Shamma, Sam Norman-Haignere and Yves Boubenec</i>	5682
Theoretical Underpinnings of Statistical Processing of Complex Sounds <i>Benjamin Skerritt-Davis and Mounya Elhilali</i>	5683
Temporal Integration Windows for Auditory Statistical Estimation <i>Richard McWalter and Josh H. McDermott</i>	5684
Foreground-background decomposition in complex auditory scenes <i>Sabine Thomassen and Alexandra Bendixen</i>	5685
Emergence of deviance detection along the auditory neuroaxis and beyond: A neuronal correlate for predictive coding? <i>Manuel S. Malmierca</i>	5692
Short-term Statistics and Lexical Experience Drive Predictions and Prediction Errors Along the Auditory Pathway <i>Carles Escera and Jordi Costa-Faidella</i>	5693
How the brain tracks the unfolding statistics of rapid sound sequences - evidence from brain imaging and pupillometry <i>Maria Chait</i>	5694
Assessing the level of consciousness for individual patients using complex, statistical stimuli <i>Urszula Gorska and Bernhard Englitz</i>	5696

Thursday, September 12

18 O - Speech enrichment: listening effort and intelligibility (POSTER SESSION)

Speech enrichment: Listening effort and intelligibility <i>Anna Exenberger and Paul Iverson</i>	5700
Fundamental research on the verbal transformation effect in Japanese <i>Seiya Funatsu and Masako Fujimoto</i>	5703
Talker intelligibility and listening effort: The role of speaking rate <i>Maximillian Paulus, Valerie Hazan, Anita Wagner and Patti Adank</i>	5708
Differences between Native and Non-Native Lombard Speech in terms of pitch range <i>Katherine Pearl Marcoux and Mirjam Ernestus</i>	5713
Benefits of the WaveNet-Based Speech Intelligibility Enhancement for Normal and Hearing Impaired Listeners <i>Muhammed Shifas Padinjaru Veettil, Carol Chermaz, Theognosia Chimona, Vassilis Tsiaras and Yannis Stylianou</i>	5721
Individual Articulatory Control in Speech Enrichment <i>Chen Shen, Martin Cooke and Esther Janse</i>	5726
Near End Listening Enhancement in Realistic Environments <i>Carol Chermaz, Cassia Valentini-Botinhao, Henning Schepker and Simon King</i>	5731
Listeners' Speech Rate Preferences in Stationary and Modulated Maskers <i>Olympia Simantiraki and Martin Cooke</i>	5736
A Multifaceted Enrichment of Oesophageal Speech <i>Sneha Raman, Inma Hernaez, Eva Navas and Luis Serrano</i>	5739
Weighted Generative Adversarial Network for many-to-many Voice Conversion <i>Dipjyoti Paul, Yannis Pantazis and Yannis Stylianou</i>	5742
Towards a Neural-Based Single Channel Speech Enhancement Model for Hearing-Aids <i>Muhammed Shifas Padinjaru Veettil, Claudio Santelli and Yannis Stylianou</i>	5745
Word error and confusion patterns in an audiovisual German matrix sentence test (OLSA) <i>Gerard Llorach and Volker Hohmann</i>	5749
EEG alpha power as a measure of listening effort reduction in adverse conditions <i>Amy Jane Hall, Axel Winneke and Jan RENNIES-Hochmuth</i>	5752
Differences in Processing Speech-on-Speech Between Musicians and Non-musicians: The Role of Prosodic Cues <i>Elif Canseza Kaplan, Deniz Baskent and Anita Wagner</i>	5756
Evaluating Cognitive Load of Text-To-Speech (TTS) synthesis <i>Avashna Govender, Simon King and Cassia Valentini-Botinhao</i>	5759
Directional selectivity of auditory spatial attention in multi-talker environment. <i>Ryo Teraoka, Shuichi Sakamoto, Zhenglie Cui, Yôiti Suzuki and Satoshi Shioiri</i>	5764
Ocular Correlates of Auditory Emotion Recognition in Hearing-Impaired Listeners <i>Julie Kirwan, Anita Wagner and Deniz Baskent</i>	5771

Thursday, September 12

19 B - Binaural Phenomena in Psychoacoustics

Improved binaural speech intelligibility by adding reverberation to the target speaker <i>Julian Grosse and Steven van de Par</i>	5773
Modeling binaural detection of a Gaussian noise target in the presence of a lead/lag masker <i>Jonas Braasch, M. Torben Pastore and Yi Zhou</i>	5779

Table of Contents - ICA 2019 / EAA Euroregio

Reconsidering binaural phenomena in terms of interaural neural fluctuation differences <i>Laurel H. Carney</i>	5786
Binaural masking level difference as a function of noise bandwidth and noise delay <i>Mathias Dietz, Kristin Bracklo and Stephan D. Ewert</i>	5793
Spatial unmasking of circular moving sound sources in the free field <i>Norbert Kolotzek and Bernhard U. Seeber</i>	5794
Understanding auditory motion perception: the role of temporal fine structure and envelope cues <i>Michaela Warnecke and Ruth Litovsky</i>	5799
Hearing protections: effects on HRTFs and localization accuracy <i>Lorenz Kroener, Alexandre Garcia, Véronique Zimpfer and Christophe Langrenne</i>	5807

Thursday, September 12

19 E - Metrics and Modeling Perception of Sound Attributes

The loudness detection of the first and last pulse of a periodic sequence: role of temporal integration and masking. <i>Liudmila Rimskaya-Korsakova and Dmitriy Nechaev</i>	5814
Progress in Tonality Calculation <i>Julian Becker, Roland Sottek and Thiago Lobato</i>	5820
Spectral prominence influencing the perceived strength of psychoacoustic measures <i>Arne Oetjen and Steven van de Par</i>	5828
Expression of the Feelings to Noise using Cepstral Parameters <i>Masanori Akita, Wataru Saito, Satoshi Ito and Yoichi Midorikawa</i>	5836
Modelling Monaural and Binaural Audio Quality <i>Stephan D. Ewert, Jan-Hendrik Fleßner and Thomas Biberger</i>	5842

Thursday, September 12

19 W - General Psychoacoustics

Simulated Transfer Path Accuracy vs. Sound Perception <i>Giorgio Pulvirenti, Nicolas Totaro and Etienne Parizet</i>	5843
Modulation masking patterns for complex-shaped envelopes <i>Arne Oetjen, Julian Schiller and Steven van de Par</i>	5848
Audibility of Spectral Dips and Peaks in Broadband Noise <i>Léopold Kritly, Vojtech Chmelík, Yannick Sluyts, Christ Glorieux and Monika Rychtarikova</i>	5856
Effects of Length of Carrier Phrase on Release from Masking in Multi-talker voice guidance <i>Hayato Sato, Masayuki Morimoto, Kazuhiro Iida and Hiroshi Sato</i>	5862
Influence of Full-Body Vibration Adapted to Foreground Components on High-Level Perception of Reality <i>Shota Abe, Zhenglie Cui, Shuichi Sakamoto, Yôiti Suzuki and Jiro Gyoba</i>	5869

Thursday, September 12

20 G - Acoustical needs for comfortable and inclusive learning spaces

Qualitative Evaluation of a Classroom Redesign <i>Ana M Jaramillo, Bruce C Olson, Peggy Nelson, Sarah Bochat and Michael Doing</i>	5877
Signal-to-noise ratio in university lecture halls with low intelligibility <i>Dario D'Orazio, Domenico De Salvio, Laura Anderlucci and Massimo Garai</i>	5882

Table of Contents - ICA 2019 / EAA Euroregio

Adaptation to Room Acoustics and Its Effect on Speech Understanding <i>Pavel Zahorik</i>	5890
Acoustic treatment of school spaces and its impact on students and teachers. Users' self-assessment. <i>Mikolaj Jarosz and Irena Polewczyk</i>	5896
Association between measurement and modeling results of room acoustics in open-plan learning spaces <i>Joose Takala, Jesse Lietzén, Saveli Valjakka, Henry Niemi and Mikko Kylliäinen</i>	5904
Well-being and noise annoyance outcomes from first graders and relationships with classroom acoustics <i>Arianna Astolfi, Giuseppina Emma Puglisi, Andrea Prato, Silvia Murgia, Greta Minelli and Tiziana Sacco</i>	5910
The sound environment of German preschools and preschool teachers' thoughts about sound generated by children <i>Saki Noguchi, Hisako Yoshizawa, Masayuki Sato and Tadashi Konishi</i>	5918
Children's perception of degraded speech at normal vs. fast speech rate <i>Isabel S. Schiller, Dominique Morsomme, Malte Kob and Angélique Remacle</i>	5926
Studying for an exam in an open-plan study environment: Does background noise impair performance? <i>Ella Braat-Eggen, Jikke Reinten, Maarten Hornikx and Armin Kohlrausch</i>	5933
Exploring the effect of ventilation type on the acoustics of primary and secondary school classrooms <i>Kieren Smith and Lily M. Wang</i>	5939
Speech comprehension and intelligibility in noise in 11 to 13 years old children: what is the relationship? <i>Nicola Prodi, Chiara Visentin, Erika Borella, Irene Mammarella and Alberto Di Domenico</i>	5944
Optimising the Acoustic Design for Multi-purpose Rooms used for a Variety of Speech Communication Activities <i>Colin Campbell, Helene Sallenhag, Erling Nilsson and Emma Arvidsson</i>	5952
Background Noise and Phonological Processing in Second Language Learners <i>Emil Holmer, Thaisy Costa and Mary Rudner</i>	5960
Towards Accessible Acoustic Criteria for Inclusion in Mainstream Classrooms <i>Emma Greenland and Bridget Shield</i>	5966
Room acoustic conditions of schools, a church, and a residential premise for hearing impaired people <i>Cheol-Ho Jeong, Wan-Ho Cho, Ji-Ho Chang, Seong-Hyun Lee, Chang Wook Kang and Jin Gyun Park</i>	5974
The need for comfortable and inclusive acoustical learning spaces for children with autism spectrum disorder <i>Hidetoshi Takahashi and Kanako Ueno</i>	5981

Thursday, September 12

20 P - Room acoustical simulation methods for high and low frequencies

Sensitivity analysis for hybrid room acoustic simulation regarding spatial data of receiver <i>Philipp Schäfer and Michael Vorländer</i>	5982
Preliminary results of scattering surface modeling and perceptual aspects in wave-based acoustic simulations <i>Louena Shtrepi, Brian Hamilton, Arianna Astolfi and Marco Masoero</i>	5990
Numerical simulations of Italian Opera Houses using geometrical and wave-based acoustics methods <i>Dario D'Orazio, Giulia Fratoni, Anna Rovigatti and Brian Hamilton</i>	5994
Combining Image and Equivalent Sources for Room Acoustic Simulations <i>Boris Mondet, U. Peter Svensson, Jonas Brunskog, Cheol-Ho Jeong, Claus Lynge Christensen and Jens Holger Rindel</i>	5997
Study of DIF Boundary Model with Rectilinear FDTD Scheme in Voice Booths <i>Vito Romanelli Tricanico, Marcel Borin, Carolina Monteiro and Rännely Araújo</i>	6004
Lower Bound on Frequency Validity of Energy-Stress Tensor Based Diffuse Sound Field Model <i>Aidan Meacham, Roland Badeau and Jean-Dominique Polack</i>	6012

Table of Contents - ICA 2019 / EAA Euroregio

Single versus multi-domain analysis in diffusion equation modeling for sound field analysis of distinct room shapes <i>Zuhre Su Gul, Erinc Odabas and Mehmet Caliskan</i>	6020
Pertinence of a Simplified Plane Wave Model for Reverberation Energy Decays in Rooms with a Pair of Parallel Surfaces. <i>Jean-Jacques Embrechts</i>	6028
Dispersion-Reduced Time Domain FEM for Room Acoustics Simulation <i>Takeshi Okuzono, Kimihiro Sakagami and Otsuru Toru</i>	6035
Comparison of sound pressure levels and reverberation times computed by the boundary element method and the radiosity method <i>Christian Steuck and Uwe Stephenson</i>	6043
Numerical Simulation Round Robin of a Coupled Volume Case as Compared to Scale Model Measurements <i>Antoine Weber and Brian F. G. Katz</i>	6051
Open-source platforms for fast room acoustic simulations in complex structures <i>Matthieu Aussal and Robin Gueguen</i>	6059
Estimation of the background noise levels in large atria with known room acoustic properties and function <i>Richard Šimek, Vojtech Chmelík, Jarmila Húsenicová and Monika Rychtarikova</i>	6067
Boundary element methods for acoustic simulations in the time domain <i>Heiko Gimperlein</i>	6073
Acoustics inside a gypsum sphere with 7 m of diameter <i>Ernesto Accolti and Fernando Di Sciascio</i>	6074

Thursday, September 12

21 A - Towards standardized soundscape methodologies

Soundscape - from Noise reduction to Perception-based Decisions for Livable Environments <i>Brigitte Schulte-Fortkamp</i>	6080
Soundscape standardization dares the impossible - Case studies valuing current soundscape standards <i>André Fiebig</i>	6081
A pilot study on the analysis of soundwalk data <i>Koji Nagahata, Tomoki Manabe and Shuto Okada</i>	6088
The Implementation of Acoustic Environment Simulator to Improve The Soundscape of Iconic Space <i>Ranti Dwi Tassia, Anugrah Sabdono Sudarsono and Sugeng Joko Sarwono</i>	6094
Classifying urban public spaces according to their soundscape <i>Kang Sun, Karlo Filipan, Francesco Aletta, Timothy van Renterghem, Toon de Pessemier, Wout Joseph, Dick Botteldooren and Bert de Coensel</i>	6100
A soundscape study in New York. Reflections on the application of standardized methods to study everyday quiet areas <i>Antonella Radicchi</i>	6106
Soundscape reproduction using headphones for web-based listening test <i>Anugrah Sabdono Sudarsono and Sugeng Joko Sarwono</i>	6114
A review of regression analysis methods: Establishing the quantitative relationships between subjective soundscape assessment and multiple factors <i>Ming Yang</i>	6122

Thursday, September 12

23 B - From audio and speech quality to Quality of Experience and Aesthetic Appeal

Methodologies for Assessment of Speech and Audio for Optimized Quality of Experience <i>Dan Darcy</i>	6129
Evaluation of an immersive audio experience using questionnaire and interaction data <i>Jon Francombe and Kristian Hentschel</i>	6137
A Methodology and a Tool for Interchangeable Reproduction of Sound Samples in Listening Tests Through Different Sound Reproduction Systems <i>Dominik Kisić, Marko Horvat and Kristian Jambrošić</i>	6145
Parallel task contexts in QoE testing. Can EEG help to understand the results? <i>Jan Holub and David Panek</i>	6150
Pupil Dilation Reveals Changes in Listening Effort due to Energetic and Informational Masking <i>James Woodcock, Bruno Fazenda, Trevor Cox and William Davies</i>	6158
Prediction of speech and noise quality for super- wideband and fullband transmission <i>Jan Reimes</i>	6164
A System for Instrumental Evaluation of Audio Quality <i>Magnus Schäfer</i>	6172

Thursday, September 12

23 W - General 'Speech'

RTF-Steered Binaural MVDR Beamforming Incorporating an External Microphone for Dynamic Acoustic Scenarios <i>Nico Gößling and Simon Doclo</i>	6180
Comparison of Ideal Mask-Based Speech Enhancement Algorithms for White Noise and Low Mixture Signal-to-Noise Ratios <i>Simone Graetzer and Carl Hopkins</i>	6182
Reverberation-induced speech improves intelligibility in reverberation: Effects of taker gender and speaking rate <i>Nao Hodoshima</i>	6190
Madurese Speech Synthesis using HMM <i>Roudhotul Rouf and Dhany Arifianto</i>	6195
HMM-Based Speech Synthesis System with Expressive Indonesian Speech corpus <i>Elok Anggrayni and Dhany Arifianto</i>	6203

Thursday, September 12

24 A - Shape and topology optimization of vibroacoustic structures

Radiation optimization of piezoelectric plates <i>Olivier Doaré, Emil Garnell and Corinne Rouby</i>	6211
Optimization of Realistic Loudspeaker Models With Respect to Basic Response Characteristics <i>Daniel Gert Nielsen, Finn T. Agerkvist and Jakob S. Jensen</i>	6219
Design of damping layer by topology optimization and Non-Negative Intensity <i>Wenchang Zhao, Haibo Chen and Steffen Marburg</i>	6227
Reducing Offshore Pile Driving Noise: Shape Optimization of the Impact Hammer <i>Elin Klages, Jonas von Pein, Stephan Lippert and Otto von Estorff</i>	6231

Structural topology optimization for repeated eigenvalues with the adjoint sensitivity analysis <i>Gil Ho Yoon, David Ruiz, Alberto Donoso and Jose Carlos Bellido</i>	6239
---	------

Thursday, September 12

24 D - Inverse problems in vibration and acoustics

Attempt to Classify the Microphone Array Deconvolution Methods in Aeroacoustics <i>Christophe Picard and Quentin Leclere</i>	6245
Extensions of the orthogonal beamforming to identify multiple multipole sources <i>Xingjian Pan and Wei Kang Jiang</i>	6253
Acoustic source detection inside a pipe using vibroacoustic beamforming: assessment of the array gain from virtual experiments <i>Souha Kassab, Sanae Serbout, Frédéric Michel and Laurent Maxit</i>	6261
Blind identification using inverse Patch Transfer Function (iPTF) method <i>Emmanuel Manu Dabankah, Nicolas Totaro and Jerome Antoni</i>	6269
Bayesian Inference to Damping Identification of Fiber-Reinforced Composites from Experimental Modal Data <i>Sourav Chandra, Kheirollah Sepahvand, Christian A. Geweth, Ferina Saati and Steffen Marburg</i>	6277
Selective identification of structural force distribution <i>Nicolas Totaro</i>	6285
High Frequency Structure-borne Sound Simulations using a hybrid Dynamical Energy Analysis / Advanced Transfer Path Analysis Approach <i>Gregor Tanner, Satoshi Morita, Timo Hartmann and Martin Richter</i>	6290
Estimation method of input power from road to tire based on experimental SEA <i>Hiroki Nakamura, Kaito Sawada, Atsushi Kitahara and Toru Yamazaki</i>	6298
Vibration modelling of an elastic body of arbitrary shape subjected to mixed excitation <i>Goran Pavic</i>	6306
Vibro-acoustic Rendering Methods to Radiate a Uniform Sound Field from a Panel Speaker <i>Jung-Han Woo and Jeong-Guon Ih</i>	6312
HiFi Panel Speaker by Controlling the Vibration Field Using Array Actuators <i>Ki-Ho Lee and Jeong-Guon Ih</i>	6316
Bending Waves focusing in Arbitrary Shaped Plate-like Structures: Application to Spatial Audio <i>Nassim Benbara, Marc Rébillat and Nazih Mechbal</i>	6320

Thursday, September 12

25 C - High-frequency and ultrasonic emissions in air: Applications, measurement and human well-being

Ultrasound in Air: New applications need improved measurement methods and procedures, and appreciation of any adverse effects on humans <i>Timothy Leighton</i>	6328
Airborne ultrasound noise at workplaces <i>Christoph Kling, Robert Schöneweiß, Andrea Wolff, Christian Ullisch-Nelken and Christian Koch</i>	6333
Quantitative Characterization of High-Intensity Focused Airborne Ultrasonic Fields <i>Marko Liebler, Christoph Kling, Benjamin Best, André Gerlach and Christian Koch</i>	6338
Completing the Traceability Chain for Airborne Ultrasound <i>Salvador Barrera-Figueroa</i>	6346
Understanding Extended High-Frequency Hearing Thresholds <i>Chris Plack, Hannah Guest and Samuele Carcagno</i>	6354

Table of Contents - ICA 2019 / EAA Euroregio

Exposure levels for parametric arrays in light of guideline ambiguities <i>Craig N Dolder, Mark Fletcher, Sian Lloyd Jones, Ben Lineton and Timothy Leighton</i>	6359
Electrostatically Driven Airborne Ultrasound Transducer with Perforated Backplate for Nonlinear Acoustic Applications <i>Takaaki Kamigaki, Yuki Ninomiya and Hiroyuki Shinoda</i>	6363
Auditory evaluation of very-high-frequency sounds radiated from the Japanese trains part 2 <i>Mari Ueda, Shunsuke Hanazaki, Hironobo Takahashi and Masaaki Hiroe</i>	6370

Thursday, September 12

27 C - Sound field rendering in Virtual Reality

Reconstruction of binaural room impulse responses using spherical harmonics <i>Maarten Hornikx</i>	6376
Local Directional Source Modeling in Wave-based Acoustic Simulation <i>Stefan Bilbao, Jens Ahrens and Brian Hamilton</i>	6377
Room acoustics modeling using a hybrid method with fast auralization with artificial neural network techniques <i>Roberto A. Tenenbaum, Filipe O. Taminato and Viviane S.G. Melo</i>	6385
Sound field reproduction with exterior field cancellation using variable-directivity loudspeakers <i>Bokai Du, Michael Kohnen, Michael Vorländer and Xiangyang Zeng</i>	6393
Auralization of interactive virtual scenes containing numerous sound sources <i>Lukas Aspöck, Lucas Mösch, Jonas Stienen and Michael Vorländer</i>	6401
Rendering of scattering effects from finite objects using neural network-controlled parametric digital filters <i>Ville Pulkki and U. Peter Svensson</i>	6409
A real-time virtual reality building acoustic auralization framework for psychoacoustic experiments with contextual and interactive features <i>Anne Heimes, Imran Muhammad and Michael Vorländer</i>	6417
Rendering Environmental Noise Planning Models in Virtual Reality <i>Arne Nykänen, Roger Johnsson and Jonas Aråker</i>	6424
Simplification of Reflection Orders in Virtual Soundscapes through a Subjective Evaluation <i>Chunyang Xu and Jian Kang</i>	6432

Thursday, September 12

Topic 16 - Posters: Musical acoustics

Influence of orthotropic properties on vibration of violin top plates <i>Masao Yokoyama, Riccardo Roberto De Lucia, Fabio Antonacci and Augusto Sarti</i>	6438
Direct and inverse Hopf bifurcation in a neutral delay differential equation model of reed conical instrument <i>Tom Colinot, Louis Guillot and Jean Kergomard</i>	6446
On the cutoff frequency of conical woodwind instruments <i>Jean Kergomard, Erik Petersen, Tom Colinot, Philippe Guillemain and Michael Jousserand</i>	6452
Reconsidering the method of evaluation for tempo estimation <i>Madoka Okemoto and Masanobu Miura</i>	6456
Differences and similarities in the production mechanism of reeds, brass, and voice: the source-filter viewpoint <i>Bernd Kröger</i>	6459
Sparse Modeling of Musical Instruments Sounds in Time-frequency Domain <i>Hiromu Ogi, Kohei Yatabe, Yasuhiro Oikawa, Yusuke Miyagi and Koji Oishi</i>	6467
Effects of classical, film and video game music on creativity <i>Tomohiro Murata and Nao Hodoshima</i>	6475

Table of Contents - ICA 2019 / EAA Euroregio

Numerical Approach for Aerodynamics around a tone hole with a moving pad: an example solving moving boundary problems with topological change <i>Taizo Kobayashi, Daiki Wakasa, Sho Iwagami, Toshiya Takami and Kin'Ya Takahashi</i>	6483
Mridangam shell-cavity analytical acoustic model for shape sensitivity studies <i>Harikanth Mohandas and Chandramouli Padmanabhan</i>	6490
Reproduction of shakuhachi from X-ray CT images by additive manufacturing <i>Arisa Kuramoto, Yoshinori Takahashi and Akisato Mizuno</i>	6497

Thursday, September 12

Topic 18 - Posters: Physiological, psychological and audiological acoustics

Meniere's Disease Prognosis by Learning from Transient- Evoked Otoacoustic Emission Signals <i>Sheng-Lun Kao, Han-Wen Lien, Tzu-Chi Liu, Hau-Tieng Wu, Te-Yung Fang, Pa-Chun Wang and Yi-Wen Liu</i>	6505
Tonotopic Sensitivity to Supra-Threshold Hearing Deficits of the Envelope Following Response Evoked by Broadband Stimuli <i>Sarineh Keshishzadeh, Viacheslav Vasilkov and Sarah Verhulst</i>	6513
Influence caused by placement of a bone-conducted vibrator on sound transmission <i>Xiuyuan Qin, Sho Otsuka and Seiji Nakagawa</i>	6519
The Pitch of Synchronized Spontaneous Otoacoustic Emission Does Not Sound Familiar to Ears that Emit It <i>Tsung-Tai Liao, Ching-Yun Hsu, Han-Wen Lien and Yi-Wen Liu</i>	6523
Assessment of adjustment to electrical threshold (T) level and electrical stimulation rate on IDL and AM detection at soft presentation level in adult CI users <i>Terry Nunn, Tim Green, Dan Jiang, Patrick Boyle and Deborah Vickers</i>	6529
Binaural Sound Localisation Directly From The Raw Waveform <i>Ning Ma, Paolo Vecchiotti and Guy Brown</i>	6536
Spatial cue distortions within a virtualized sound field caused by an additional listener <i>Sergio Luiz Aguirre, Lars Bramsløw, Thomas Lunner and William Mcallister Whitmer</i>	6537
Evaluation of Auditory Reality and Hearing Aids Using an Ecological Momentary Assessment (EMA) Approach <i>Niels Sjøgaard Jensen, Ole Hau, Dina Lelic, Petra Herrlin, Florian Wolters and Karolina Smeds</i>	6545
3D Localization of Speech by Mildly and Moderately Hearing-Impaired Persons in Ecological Environments <i>Laurent S. R. Simon, Andrea Kegel, Hannes Wüthrich and Norbert Dillier</i>	6553
Integration of speech information (or not) across electric and acoustic modes in hearing impaired listeners. <i>Bob McMurray and Michael Seedorff</i>	6561
Glimpsed Periodicity Features and Recursive Bayesian Estimation for modeling attentive voice tracking <i>Joanna Luberadzka, Hendrik Kayser and Volker Hohmann</i>	6569
Prediction of Speech Intelligibility Based on Deep Machine Listening: Influence of Training Data and Simulation of Hearing Impairment <i>Jana Roßbach, Birger Kollmeier and Bernd T. Meyer</i>	6577
Effects of Audiovisual Expression of Emotion on Age Perception <i>Sumi Shigeno</i>	6581
Reinforced statistical learning of auditory categories: A preliminary report of cognitive, cortical and computational mechanisms <i>Bob McMurray, Samantha Chiu and John Freeman</i>	6587
Effects of vibrator placement in the auricle on cartilage- conduction hearing: Assessments of detection threshold and ear canal sound pressure <i>Toru Jitsukawa, Sho Otsuka and Seiji Nakagawa</i>	6595

Table of Contents - ICA 2019 / EAA Euroregio

Reversing Degraded Auditory Processing Using Targeted Plasticity <i>Yuko Tamaoki, Jonathan Riley, Michael Borland, Seth Hays, Crystal T Engineer and Michael Kilgard</i>	6598
Demodulation Characteristics in Propagation Process of Amplitude-modulated Bone-conducted Ultrasound Presented to the Neck, Trunk and Arms <i>Koichiro Doi, Ogino Riki, Sho Otsuka and Seiji Nakagawa</i>	6604
Targeted Neuroplasticity in Rat Primary Auditory Cortex with Vagus Nerve Stimulation and Near-Threshold Tones <i>Alan Michael Carroll</i>	6607
Evaluation of Propagation Characteristics of Bone- conducted Ultrasound Presented to the Neck, Trunk and Arms <i>Ogino Riki, Sho Otsuka and Seiji Nakagawa</i>	6613
Correlative changes of medial olivocochlear bundle reflex and electroencephalographic activity during sleep <i>Yuto Suzuki, Sho Otsuka and Seiji Nakagawa</i>	6616
On the frequency limit of interaural time difference sensitivity for pure tones <i>Helen Theresa Heineremann, Jonas Klug, Sven Herrmann, Go Ashida, Jörg Encke and Mathias Dietz</i>	6619
Multivariate Statistical Analysis for Acoustical Characteristics of the Onomatopoeic Expression on Tinnitus <i>Takahiro Tamesue</i>	6620
Effects of a preceding sound on medial olivocohlear bundle reflex as a function of the preceding time interval <i>Sho Otsuka, Seiji Nakagawa and Shigeto Furukawa</i>	6626
Voice conversion model for estimation of transmission characteristics in auditory feedback <i>Shota Morita, Daiki Kawamoto and Teruki Toya</i>	6630

Thursday, September 12

Topic 19 - Posters: Psychoacoustics

Spatial sound segregation in monaural listening condition <i>Daisuke Morikawa, Daiki Kojima and Tatsuya Hirahara</i>	6637
Acuity of Spatial Stream Segregation along the Horizontal Azimuth with Non-individualized Head-Related Transfer Functions <i>Martha M Shiell and Elia Formisano</i>	6644
HRTF and panning evaluations for binaural audio guidance <i>Sylvain Ferrand, François Alouges and Matthieu Aussal</i>	6650
Feature Analysis of Sound Direction Perception Using Frequency Band-Limited Stimuli: Extension of a Directional Band Model <i>Michika Yamada, Fumikazu Saze, Toshiharu Horiuchi and Kan Okubo</i>	6657
Parametric measurement of the effects of relative loudness on the relative weights <i>Alexander Fischenich, Jan Hots, Jesko Verhey and Daniel Oberfeld-Twistel</i>	6665
Evaluation of Frequency Resolution Characteristic of Cartilage- conduction Hearing using Physiological and Psychological Measurement <i>Gaik Sean Yap, Sho Otsuka, Masato Yumoto and Seiji Nakagawa</i>	6668
A preliminary study of desirable sound environments in hospital wards <i>Junko Matsumoto</i>	6670

Thursday, September 12

Topic 21 - Posters: Soundscape and Urban Sound Planning

On the Dimension and Scaling Analysis of Soundscape Assessment Tools: a case study about the "Method A" of ISO/TS 12913-2:2018 <i>M Lionello, Francesco Aletta and Jian Kang</i>	6673
Sound and Weather - A Complex Relationship <i>Jan Lordieck and Bryce Timothy Lawrence</i>	6681
The effect of spectral centroid on perceived birdsong in urban forests <i>Xinchen Hong, Chen Yan, Guangyu Wang and Siren Lan</i>	6689
Soundscape engineering of a promenade on Namsan Mountain Park by noise, sound and preference maps <i>Jisu Yoo, Jae Kwan Lee and Seo Il Chang</i>	6693
Using 3D City model platform for the analysis of Andorra's Soundscape <i>Rosa Ma Alsina-Pagès, Marc Vilella, Marc Pons and Robert Garcia Almazan</i>	6700
Noise and Soundscape Mapping in a Taebaeksan Mountain National Park of South Korea <i>Kyong Seok Ki, Jisu Yoo, Hunjae Ryu and Seo Il Chang</i>	6708
Investigation on the impact of traffic noise on the acoustic environment of urban parks in high-density cities: Taking Shenyang City, China as an example <i>Yuan Zhang, Xinhao Yang and Siyang Guo</i>	6713
Spatial Analysis of the Impact of Urban Forms to Road-traffic Noise in a Highly Populated City <i>Taeho Park, Minho Kim, Phillip Kim and Seo Il Chang</i>	6721
The Importance of An Urban Interpretation of Environmental Noise. The case of Mexico City <i>Fausto E Rodriguez Manzo, Elisa Garay-Vargas, Laura Lancon-Rivera, Dulce Ponce-Patron and Silvia Garcia-Martinez</i>	6727
Artificial neural network analysis of the relationship between road-traffic noise and air pollutants and urban form indicators <i>Phillip Kim, Hunjae Ryu, Jong June Jeon, Seo Il Chang and Nokil Park</i>	6735
Sustainable Resources to Improve on Living Green Walls Acoustics: Supply Chain Study <i>Ghofran Salah and Anna Romanova</i>	6743
Perception of auditory-visual simultaneity changes by ambient illumination <i>Masaaki Tezuka, Mariko Tsuruta-Hamamura and Hiroshi Hasegawa</i>	6751
Digitization of cultural heritage of the UNESCO site - Lipnica Murowana <i>Pawel Malecki, Jerzy Wiciak, Katarzyna Sochaczewska and Natalia Krygowska</i>	6757
Acoustic quality and health in urban environments - First methodological experiences of the pilot study SALVE <i>Robynne Sutcliffe, Bryce Timothy Lawrence, Salman Ahmed, Timo Haselhoff, Dietwald Gruehn and Susanne Moebus</i>	6762
Comparison of Direction of Arrival Methods for Separation of Vehicle Sound Sources <i>Gabriela Dantas Rocha, Felipe Petraglia, Julio Cesar Boscher Torres and Mariane Rembold Petraglia</i>	6766

Thursday, September 12

Topic 22 - Posters: Sound quality of fans and HVAC-systems

Relationship between Subjective Responses and Physical Parameters of Air-Conditioner Noises in a Car <i>Yoshiharu Soeta, Hiroko Kagawa and Yoshisada Sakamoto</i>	6774
Psychoacoustical assessment of thermal impression of automotive HVAC noise <i>Seiji Nakagawa, Takuya Hotehama and Masaru Kamiya</i>	6781

Thursday, September 12

Topic 23 - Posters: Speech

Active control and passive consequence of vowel devoicing in Japanese: Evidence of highspeed movies and PGG <i>Masako Fujimoto, Seiya Funatsu and Ichiro Fujimoto</i>	6787
Investigation of Acoustic Models for Emotion Recognition using a Spontaneous Speech Corpus <i>Tetsuo Kosaka, Yuka Haneda, Daisuke Makabe and Masaharu Kato</i>	6795
Opening the Black Box: Real-Time Speech Perturbation Experiments Reloaded <i>Bahne Hendrik Bahners, Sebastian Heidelberg, Joseph Baader, Ruben van de Vijver, Markus Butz and Julian Rohrhuber</i>	6801
Detection of Anchors' Utterances in Broadcast News Using I-vector-based Speaker Similarity and Temporal Information <i>Daichi Nozaki, Masaru Yamashita, Hiroyuki Takada and Matsunaga Shoichi</i>	6808
Using partial a priori knowledge of Relative Transfer Functions to design an MVDR beamformer for a Binaural Hearing Assistive Device with External Microphones <i>Randall Ali, Toon van Waterschoot and Marc Moonen</i>	6815
Discrimination of Mono-syllables in Sentence Context: the Case of Japanese Listeners' Perception of /ba/-/da/ Continuum <i>Kanako Tomaru</i>	6823
Speech Enhancement by Bit-Rate Extension Based on Time-Frequency Simultaneous-Constrained Griffin-Lim Algorithm <i>Haonan Wang and Takanobu Nishiura</i>	6828
Comparative Acoustic - Phonetic Analysis of Retroflex Consonants of Some Indian Languages <i>Shyam Sunder Agrawal, Shweta Bansal and Shweta Sinha</i>	6836
Acoustic Evaluation of Simplifying Hypotheses Used in Articulatory Synthesis <i>Ioannis Douros, Yves Laprie, Pierre-André Vuissoz, Benjamin Elie and Angélique Amelot</i>	6844
Inverse Estimation of the Vocal Tract Shape from Speech Sounds Including Consonants Using a Vocal Tract Mapping Interface <i>Kohichi Ogata and Takayuki Tanaka</i>	6852
Acoustic and Subjective Evaluation of Brazilian Portuguese Speech Recordings Made in Critical Listening Environments <i>Ticiano Matar De Lello, Stephan Paul and Luiz Wagner Pereira Biscainho</i>	6860
A Simple Strategy for Natural Mandarin Spoken Word Stretching via the Vocoder <i>Yi-Jhe Lee, Ting-Chun Liao and Yi-Wen Liu</i>	6868
A Study on English Speech Acclimatization Based on Accent Conversion for Non-native Speaker <i>Yutao Zhang, Takuro Sasaki, Yukoh Wakabayashi, Takahiro Fukumori and Takanobu Nishiura</i>	6876

Friday, September 13

Friday, September 13

01 D - Signal processing and systems for active control of noise and vibration

Comparisons of Two Virtual Sensing Methods for Broadband Noise <i>Reo Maeda and Yoshinobu Kajikawa</i>	6883
Virtual Sensing Technique for a Multi-Reference and Multi-Error Active Noise Control System <i>Rong Xie, Chuang Shi and Huiyong Li</i>	6891
A Method for Detecting Convergence Completion of Adaptive Filter Cancelling Feedback Path Appeared in Active Noise Control Systems <i>Kensaku Fujii and Mitsuji Muneyasu</i>	6898
Practical consideration and implementation for avoiding Saturation of large amplitude Active Noise Control <i>Shi Dongyuan, Woon-Seng Gan, Bhan Lam and Shulin Wen</i>	6905
Empirical Study of Decentralized Multi-Channel Active Noise Control Based on the Genetic Algorithm <i>Guoqiang Zhang, Jiancheng Tao and Xiaojun Qiu</i>	6913
Design and Construction of Loudspeakers with Low-BI Drivers for Low-frequency Active Noise Control Applications <i>Marios Giouvanakis, Konstantinos Kasidakis, Christos Sevastiadis and George Papanikolaou</i>	6921

Friday, September 13

02 H - Machine learning for audio signal processing

Source Localization in Reverberant Rooms using Deep Learning and Microphone Arrays <i>Hadrien Pujol, Éric Bavu and Alexandre Garcia</i>	6929
Sound Quality Improvement for Speech Acquisition Based on Deep Learning and Harmonic Reconstruction with Laser Microphone <i>Shoji Ueda, Kenta Iwai, Takahiro Fukumori and Takanobu Nishiura</i>	6937
Performance Analysis of Audio Event Classification Using Deep Features under Adverse Acoustic Conditions <i>Irene Martin-Morato, Maximo Cobos, Francesc Ferri and Javier Naranjo-Alcázar</i>	6945
Joint Separation, Dereverberation and Classification of multiple Sources Using Multichannel Variational Autoencoder with Auxiliary Classifier <i>Shota Inoue, Hirokazu Kameoka, Li Li and Shoji Makino</i>	6953
A Neural Network Approach to Broadband Beamforming <i>Yugo Kuno, Bruno Masiero and Nilesh Madhu</i>	6961

Friday, September 13

04 C - Acoustic regulations and quality classes for buildings 2

The New Italian standard UNI 11532 on acoustics for schools <i>Arianna Astolfi, Linda Parati, Dario D'Orazio and Massimo Garai</i>	6969
New Finnish building acoustic regulation <i>Mikko Kylliäinen and Ari Saarinen</i>	6977
Acoustic requirements vs experienced sound in wood structures <i>Klas Hagberg</i>	6983
The increment in cost and other parameters to upgrade quality classes in sound insulation <i>Bilge San Ozbilen and Nurgun Bayazit</i>	6989

Friday, September 13

06 A - Modern history of acoustics

From Noise Control to Intelligibility: a history of office acoustics <i>Joeri Bruyninckx</i>	6997
Sound & Science: Digital Histories: Navigations through the History of Acoustics <i>Viktoria Tkaczyk</i>	6998
The Consolidation of Engineering Acoustics as an Example of Contextual History of Science <i>Joachim Scheuren</i>	7002
The History of Acoustics in Breslau/Wroclaw before and after 1945: A Bridge over Time <i>Andrzej Dobrucki and Peter Koeltzsch</i>	7007
The Church building secularization through its sound Sound in a contemporary case study <i>Maria Cairoli and Livio Mazzarella</i>	7015

Friday, September 13

08 D - Policy and regulation for noise in urban planning and urban soundscapes

Acoustic noise maps - exchange / integration of data within various database systems - problems, needs, new possibilities, interoperacy <i>Tomasz Malec</i>	7022
Noise Low Emission Zone implementation in urban planning: results of monitoring activities in pilot area of LIFE MONZA project <i>Rosalba Silvaggio, Salvatore Curcuruto, Manlio Maggi, Antonio Fasanella, Giorgio Cattani, Alessandro Di Menno Di Bucchianico, Alessandra Gaeta, Gianluca Leone, Enrico Mazzocchi, Raffaella Bellomini, Sergio Luzzi, Francesco Borchi, Chiara Bartalucci, Monica Carfagni, Giulio Arcangeli, Nicola Mucci, Carlo Casati and Giulia Pessina</i>	7027
Soundscape Planning as a Tool for Urban Planning <i>Moritz Lippold and Bryce Timothy Lawrence</i>	7035
Noise complaints and its relation to socio-economic factors at city/region scale in England <i>Huan Tong and Jian Kang</i>	7043

Friday, September 13

08 E - EUROREGIO SESSION: Policy and regulation for noise and vibration in workplaces

Noise emission data as a prerequisite for Buy Quiet: Challenges related to the European Machinery and Outdoor Noise Directive <i>Fabian Heisterkamp</i>	7049
Admissible Values and Methods of Measurement of Noise, Ultrasonic Noise and Infrasonic Noise at Workplaces in Poland <i>Dariusz Pleban</i>	7057
Ultrasound Noise Policy and Assessment: Canada Safety Code - 24, a Canadian Perspective <i>Lixue Wu</i>	7064
Noise exposure of employees in retail trade <i>Jan Selzer, Florian Schelle, Andrea Wolff, Frank Rokosch and Anne Gehrke</i>	7072

Friday, September 13

09.2 E - Noise and health in children

Noise and health in children with autism spectrum disorder <i>Hidetoshi Takahashi</i>	7079
Effects of aircraft noise and living environment on children's well-being and health <i>Jan Spilski, Martin Rumberg, Martin Berchtold, Kirstin Bergström, Ulrich Möhler, Thomas Lachmann and Maria Klatte</i>	7080
Restorative soundscapes and stress recovery in Children <i>Shan Shu and Hui Ma</i>	7088
Associations of traffic noise and air pollution with birth outcomes in Alpine areas: Results from the UIT and BBT surveys <i>Angel Mario Dzhambov, Iana Markevych and Peter Lercher</i>	7096
Effect of Sound Absorption on Children's Behavior in Daycare rooms: a Field Experiment with Installation of Temporary Sound Absorption. <i>Keiji Kawai, Shota Masumoto and Ryuichiro Yamane</i>	7104

Friday, September 13

09.2 F - EUROREGIO SESSION: Implication WHO Guidelines

Study on methodology to perform an environmental noise and health assessment - a guidance document for local authorities in Europe <i>Irene van Kamp, Dirk Schreckenberg, Elise van Kempen, Mathias Basner, Alan Lex Brown, Charlotte Clark, Danny Houthuijs, Oscar Breugelmans, Annemarie van Beek and Brigit Janssen-Stelder</i>	7110
Case study of an environmental noise and health assessment in the City of Düsseldorf, Germany <i>Dirk Schreckenberg, Irene van Kamp, Sarah Leona Benz, Stephan Grossarth, Elise van Kempen, Mathias Basner, Alan Lex Brown, Charlotte Clark, Danny Houthuijs, Oscar Breugelmans, Annemarie van Beek and Brigit Janssen-Stelder</i>	7118
Environmental Noise Guidelines Implementation in Poland <i>Anna Preis</i>	7126
A critical review of the basis for WHO's new recommendations for limiting annoyance due to environmental noise <i>Truls Gjestland</i>	7129
Valuing impacts of noise on health - exposure response relationships in current UK guidance and the WHO Environmental Noise Guidelines 2018 <i>Benjamin Fenech and Georgia Rodgers</i>	7137
Reviewing the Current Guidance in England for the Valuation of Noise Impacts in light of the Publication of the WHO Environmental Noise Guidelines 2018 and other Relevant Evidence <i>Hilary Notley, Alisha Iyer and Emma Powell</i>	7145

Friday, September 13

10 B - Design of warning sound - from honking impact to sound quality in electric vehicles

Analysis of vehicle horn use and factors at intersections in an urban area of Taiwan <i>Takada Masayuki, Shoki Tsunekawa, Kazuma Hashimoto, Tamaki Inada, Yoshinao Oeda, Katsuya Yamauchi, Ki-Hong Kim and Shin-Ichiro Iwamiya</i>	7153
Electric and Autonomous Vehicle: from Sound Quality to Innovative Sound Design <i>Nicolas Misdariis, Andrea Cera and William Rodriguez</i>	7161
Design of Acoustic Vehicle Alerting System Sound Assuming Listening Situation of Pedestrians <i>Hiroshi Matsuda, Masato Suzuki and Nobuo Machida</i>	7169

Table of Contents - ICA 2019 / EAA Euroregio

Relationship between acoustic characteristics and impression for warning sounds on electric vehicles <i>Nozomiko Yasui</i>	7176
Pedestrian awareness of the approach of quiet vehicles: Effect of approach informing sound and designing awareness <i>Takahiro Kosuge, Tomoya Tsujinaga, Toki Kobayashi, Mariko Tsuruta-Hamamura and Hiroshi Hasegawa</i>	7180
Effects of localization control of warning sound combined with visual information in vehicle cockpit <i>Kiichi Naka, Katsuya Yamauchi, Nobuaki Tanoue and Ayumu Kawata</i>	7187

Friday, September 13

10 W - General 'Vehicle acoustics (air, road, rail, water, ...)'

Asphalt-surface defects detection, based on Tyre/Road noise analysis and geo-processing <i>Carlos Andrés Ramos Romero and César Asensio</i>	7195
Investigation on Abnormal Gear Rattle Noise in Automated Manual Transmission (AMT) after Gear Upshifting <i>Abhishek Lakhanlal Vaishya, Archan Sunilbhai Pujara, Devendra Kumar Khare, Kingshuk Satpathy and Vivek Singh</i>	7200
Study for Whoop Noise Reduction in passenger vehicle with Clutch Hydraulic System <i>Devendra Kumar Khare, Anant Saran Pandey and Abhishek Lakhanlal Vaishya</i>	7208
A Study of the Interaction Between Vehicle Exterior Noise Emissions and Vehicle Energy Demands for Different Drive Cycles <i>Johan Nygren, Susann Boij, Romain Rumpler and Ciarán O'Reilly</i>	7216
Development of a Thermally Insulating Vibration Damping Compound <i>Alexander Rasa</i>	7224

Friday, September 13

12 A - Spatial audio: Reproduction techniques and signal processing 2

Estimation of Cross-Talk Compensation Filter using Bone Conduction Ear Microphone <i>Irwansyah Irwansyah and Tsuyoshi Usagawa</i>	7232
Primary ambient extraction for random sign Hilbert filtering decorrelation <i>Lu Chen, Chuang Shi and Huiyong Li</i>	7239
Analysis of Head Rotation Trajectories During a Sound Localization Task <i>Yukio Iwaya and Brian F. G. Katz</i>	7247
Real time audio encoding/decoding system using MPEG-H 3D Audio toward advancement of terrestrial broadcasting technology <i>Takehiro Sugimoto, Shuichi Aoki, Satoshi Oode, Tomomi Hasegawa, Hiroki Kubo and Hiroyuki Okubo</i>	7252
Machine-learning-based estimation of reverberation time using room geometry for room effect rendering <i>Ricardo Falcon Perez, Georg Götz and Ville Pulkki</i>	7258
The Perceptual Effect of Reflective Surfaces on Acoustic Crosstalk Cancellation Using an 8-Channel Linear Loudspeaker Array <i>Karim Bahri and Jens Ahrens</i>	7266

Friday, September 13

12 D - Measurement and modelling of electro-acoustic transducers

Evaluation of Non-linear Distortion in Compression Chamber of a Low Frequency Horn <i>Tomasz Nowak, Andrzej Dobrucki and Romuald Bolejko</i>	7272
Modelling of a Compression Driver using Lumped Elements <i>Joerg Panzer</i>	7280
Acoustic simulation for high intensity sound source with Helmholtz resonator <i>Zinan Li, Bo Zhang, Qiqi Chen, Liheng Wang and Yutian Bai</i>	7288
Measurement of Loudspeaker Parameters: A Pedagogical Approach <i>Antonin Novak</i>	7294
Effective Radiation Area (Sd) for Axisymmetric Loudspeakers Radiating in an Infinite Baffle Using a Near Field Analysis <i>Luis Angelo Velarde Criado and Jorge N. Moreno</i>	7302
Measurement of the Back Loading of a Loudspeaker Mounted on a Closed Enclosure - A First Approach <i>Jorge N. Moreno, Richard Rivera and Luis Angelo Velarde Criado</i>	7310
Measurement of the Acoustic Impedance of Multi Resonant Systems - A Prior Step to Determine Parasitic Resonances in Magnetic Circuits of Loudspeakers <i>Cesar Arthur Castro and Jorge N. Moreno</i>	7317
On the relevance of transducer measurements for real-world applications <i>Martin Schneider</i>	7324
Comparison of numerical methods for miniature loudspeaker modelling <i>Juha Backman</i>	7332
Electrostatic All-Silicon MEMS Speakers for In-Ear Audio Applications - Acoustic Measurements and Modelling Approach <i>Lutz Ehrig, Hermann Schenk, Franziska Wall, Anton Melnikov, Michael Stolz, Sergiu Langa, Bert Kaiser and Holger Conrad</i>	7339
Prediction of acoustic emission of a rigid electrodes DEAP loudspeaker <i>Emiliano Rustighi, William Kaal and Sven Herold</i>	7345
Sensorless Measurement of the Acoustic Impedance of a Loudspeaker <i>Romain Boulandet</i>	7353
Modelling of a MEMS transducer using approximate eigenfunctions of a square clamped plate <i>Karina Abramova, Petr Honzík, Nicolas Joly, Stéphane Durand and Michel Bruneau</i>	7361
Temperature effects on the mechanical-acoustic properties of condenser microphones: experimental characterization <i>Cécile Guianvarc'h, Thomas Lavergne, Lara Risegari, Petr Honzík, Dominique Rodrigues and Roberto M. Gavioso</i>	7369
Analytical modelling of a MEMS transducer composed of a rigid micro-beam attached at one end to a flat spring moving against a reduced-size backplate <i>Petr Honzík, Antonin Novak, Stéphane Durand, Nicolas Joly and Michel Bruneau</i>	7375

Friday, September 13

14 C - Radiated Noise of Ships and Offshore Structures

Innovative solutions to reduce the transfer of structure borne noise in couplings <i>Lothar Kurtze</i>	7382
Application of the Energy based Finite-Element-Method to determine the sound emission of vibrating ship structures in the High Frequency Domain <i>Henning Lohmann, Boris Dilba, Olgierd Zaleski and Otto von Estorff</i>	7389

Table of Contents - ICA 2019 / EAA Euroregio

Analysis Methods and Design Measures for the Reduction of Noise and Vibration Induced by Marine Propellers <i>Julian Kimmerl, Paul Mertes, Vladimir Krasilnikov, Kourosh Koushan, Luca Savio, Mario Felli, Moustafa Abdel-Maksoud, Ulf Götttsche and Nils Reichstein</i>	7397
Measurements of Underwater Noise from Pile Driving in Southwest Coast of Korea <i>Dong-Gyun Han, Daehyeok Lee and Jee Woong Choi</i>	7405
Shipping noise propagation at the shallow sea <i>Eugeniusz Kozaczka and Grażyna Grelowska</i>	7409
Uncertain Parameters of the Propagation Path in 3D Pile Driving Noise Modelling <i>Jonas von Pein, Johannes Seidel, Elin Klages, Stephan Lippert and Otto von Estorff</i>	7417
Evaluation of range standards for underwater radiated noise of ship's in beam aspect. <i>Hans Hasenpflug, Anton Homm, Layton Gilroy and Stefan Schäl</i>	7425
Structure-borne Noise Reduction of Gearboxes in Maritime Application <i>Robin Daniel Seiler</i>	7431

Friday, September 13

15 D - Boundary and finite element methods in acoustics and vibration 2

Model Order Reduction with Krylov Subspaces of exterior Acoustic BEM Systems <i>Dionysios Panagiotopoulos, Elke Deckers and Wim Desmet</i>	7439
Evaluating acoustic properties based on sound energy for interior problems <i>Caglar Guerbuez and Steffen Marburg</i>	7447
Relation between Convergence Tolerance for Iterative Solvers and Calculation Results in Rooms Using BEM <i>Yosuke Yasuda, Kota Saito and Hidehisa Sekine</i>	7454
Integration of FEM shell elements as a "boundary condition" in BEM calculations using different solution methods <i>Ralf Burgschweiger, Ingo Schäfer and Martin Ochmann</i>	7462
Numerical investigation of acoustic radiation damping in sandwich structures <i>Suhaib Koji Baydoun and Steffen Marburg</i>	7470
Moving sources and the 2.5D Helmholtz Boundary Element Method <i>Christian Kasess and Holger Waubke</i>	7475
Simulation of vibrations from railway tunnels <i>Holger Waubke, Wolfgang Kreuzer, Tomasz Hrycak and Sebastian Schmutzhard</i>	7483
Fundamental solutions in modeling of vibrations radiated from tunnels with 2.5D - BEM <i>Sebastian Schmutzhard, Tomasz Hrycak, Wolfgang Kreuzer and Holger Waubke</i>	7490
A Domain Decomposition Method with Fast Convergence for the Helmholtz Equation <i>Denis Duhamel</i>	7496
On the impact of the shape of the artificial boundary in exterior Helmholtz problems <i>Nick Wulbusch, Reinhild Roden, Alexey Chernov, Matthias Blau and Andrea Moiola</i>	7504
BEM Simulation of tube acoustics using thin elements <i>Wolfgang Kreuzer and Veronika Weber</i>	7512
Flexible multi-level fast multipole BEM with Direct Solver for Industrial Acoustic Problems <i>Yue Li, Onur Atak and Wim Desmet</i>	7518
FEM-BEM applications in vibro-acoustics using GypsiLab <i>Mathieu Aussal, François Alouges, Marc Bacry and Gilles Serre</i>	7526

Friday, September 13

16 B - Measurement, modelling and perception of string instruments

Sympathetic vibration in a piano <i>Jin Jack Tan, Armin Kohlrausch and Maarten Hornikx</i>	7534
Predictive simulation of mechanical behavior from 3D laser scans of violin plates <i>Mirco Pezzoli, Riccardo Roberto De Lucia, Fabio Antonacci and Augusto Sarti</i>	7542
Measurement and Modelling of the Japanese koto: Problems and Solutions <i>Kimi Coaldrake</i>	7549
Study of Ivory Alternatives for Koto Bridges: Correlation between Sensory Evaluation and Amplitude Modulation of Fundamental Spectrum <i>Shuichi Sakamoto, Shunsuke Watanabe, Taku Watanabe, Yuki Sato, Shuma Ito, Ryota Kominami and Yuki Akiba</i>	7557

Friday, September 13

17 W - General 'Physical acoustics'

Extensions of the Born Approximation for Acoustic Radiation Force and Torque to Inhomogeneous Objects and Progressive Spherical Waves <i>Thomas S. Jerome and Mark F. Hamilton</i>	7565
Impact of roughness on shock wave reflection phenomena <i>Thomas Lechat, Sébastien Ollivier, Didier Dragna and Maria Karzova</i>	7572
Analytical and computational modeling of viscothermal acoustic damping in perforated microstructures <i>Vahid Naderyan, Richard Raspert, Craig Hickey and Mohammad Mohammadi</i>	7580
On some properties of magnetoacoustic waves in acoustically active non-adiabatic plasma <i>Dmitrii Zavershinskii, Nonna Molevich and Igor Zavershinskii</i>	7586
Statistical Characteristics of gas metal arc welding (GMAW) sound <i>Sipei Zhao, Xiaojun Qiu, Ian Burnett, Malcolm Rigby and Anthony Lele</i>	7594
Predicting the noise level during sawing of carbonate rocks from the P-wave velocity <i>Sair Kahraman, M. Suat Delibalta and Ramazan Comakli</i>	7602

Friday, September 13

18 E - Assessment of hearing ability in realistic environments

LEAP, a new laboratory test for evaluating auditory preference <i>Karolina Smeds, Martin Dahlquist, Josefina Larsson, Petra Herrlin and Florian Wolters</i>	7608
Realistic Audiovisual Listening Environments in the Lab: Analysis of Movement Behavior and Consequences for Hearing Aids <i>Maartje Hendrikse, Gerard Llorach, Giso Grimm and Volker Hohmann</i>	7616
Speech Intelligibility in a Realistic Virtual Sound Environment <i>Naim Mansour, Marton Marschall, Adam Westermann, Tobias May and Torsten Dau</i>	7623
Evaluating potential EEG-indicators for auditory attention to speech in realistic environmental noise <i>Ehsan Eqlimi, Dick Botteldooren and Annelies Bockstael</i>	7631
Assessment of acoustical properties and subjective perception in everyday life <i>Inga Holube, Petra von Gablenz, Ulrik Kowalk and Jörg Bitzer</i>	7639
Behavior and Speech Intelligibility in a Changing Multi-talker Environment <i>Lubos Hladek and Bernhard U. Seeber</i>	7640
Effect of test realism on speech-in-noise outcomes with bilateral cochlear implant users <i>Jörg M. Buchholz, Javier Badajoz Davila and Richard van Hoesel</i>	7646

Spatial release from masking assessment in virtual reality for bilateral cochlear implants users <i>Lorenzo Picinali, Marina Salorio-Corbetto and Deborah Vickers</i>	7647
--	------

Friday, September 13

18 G - Machine learning based approaches to model auditory perception

Auditory Models Comparison for Horizontal Localization of Concurrent Speakers in Adverse Acoustic Scenarios <i>Roberto Barumerli, Michele Geronazzo, Andrea Almenari, Giorgio Maria Di Nunzio and Federico Avanzini</i>	7651
Decoding the neural processing of selective attention to speech <i>Tobias Reichenbach</i>	7659
Prediction of Human Listeners' Speech Recognition Performance Based on Automatic Speech Recognition <i>Mahdie Karbasi and Dorothea Kolossa</i>	7663
Modelling of Binaural Speech Intelligibility for Hearing Impaired Listeners Using Intrusive and Non-Intrusive Binaural Speech Intelligibility Models <i>Christopher Hauth, Marc René Schädler and Anna Warzybok</i>	7664

Friday, September 13

19 A - Application of Psychoacoustics in Noise Evaluation

Binaural Modeling for Complex Environments <i>Jonas Braasch and Jens Blauert</i>	7665
Limits of Mixing Background Sounds to Foreground Sound Samples in Psychoacoustic Laboratory Experiments on Noise Annoyance <i>Eduardo Pelizzari and Armin Taghipour</i>	7673
Annoyance modeling of construction noise using acoustical features, noise sensitivity and health condition <i>Jae Kwan Lee, Seo Il Chang, Soo Il Lee and Jae Woong Jang</i>	7681
Loudness of ramped and damped sounds that are temporally shifted across ears <i>Josef Schlittenlacher, Robbie Zhao and Brian C. J. Moore</i>	7688
Annoyance penalty of amplitude-modulated sound <i>Valtteri Hongisto and Petra Karoliina Virjonen</i>	7693
Annoyance of impulsive sounds - a psychoacoustic experiment involving synthetic sounds <i>Ville Rajala and Valtteri Hongisto</i>	7697
Practical Experience with Psychoacoustics in Automotive Engineering <i>Uwe Letens, Arne Oetjen, David Goecke and David Maiberger</i>	7703
Subjective and electrodermal responses to annoying vehicle sounds: Role of task load and noise sensitivity <i>Wolfgang Ellermeier, Florian Kattner, Ewald Klippenstein, Michael Kreis and Catherine Marquis-Favre</i>	7711
Subjective and Objective Assessments of Noise Barriers in Terms of the Loudness Level <i>Marcin Piotr Nowak and Piotr Kokowski</i>	7712
Improving defect detection in wind turbine blades with psychoacoustic means and prediction models <i>Bernhard U. Seeber and Gaetano Andreisek</i>	7720
Activity Disturbances by a Step Change in Aircraft Noise Exposure around Hanoi Noi Bai International Airport <i>Takashi Yano, Makoto Morinaga, Shigenori Yokoshima, Thulan Nguyen and Thao Linh Nguyen</i>	7721
Improvement of Copy Machine Noise <i>Takeo Hashimoto and Shigeko Hatano</i>	7729
Applications of Psychoacoustics in Dental Drill Noise Evaluation <i>Tomomi Yamada, Sonoko Kuwano and Mikako Hayashi</i>	7737

Annoyance of Noise in the Infrasound Range; Study Design and Acoustic Presentation <i>Detlef Krahe, Sarah Leona Benz, Christian Eulitz, Stephan Grossarth, Ulrich Möhler, Uwe Müller and Dirk Schreckenber</i>	7743
---	------

Friday, September 13

19 D - Cognitive Stimulus Integration (in the context of auditory sensations and sound perceptions)

Cognitive load influences the evaluation of complex acoustical scenarios <i>Jochen Steffens, Franz Müller, Melanie Schulz and Samuel Gibson</i>	7751
The influence of extreme response style on sound evaluations <i>Christoph Jakobs, Dustin Selbach, Sebastian Böldt and Jochen Steffens</i>	7759
Feature analysis of spectral cues and loudness for perception of sound direction by people with unilateral hearing loss <i>Fumikazu Saze, Kan Okubo and Kazuhiro Iida</i>	7767

Friday, September 13

20 L - Production and perception of artistic voice

Accounting for Variability over the Voice Range <i>Sten Ternström and Peter Pabon</i>	7775
A New Paradigm of Effective Communication based on Voice Shapes <i>Alessio Carullo, Adriano Anibaldi, Arianna Astolfi, Alessio Atzori, Viviana Cennamo and Giovanni Zito</i>	7781
Objective Assessment of the Effects of Semi-Occluded Vocal-Tract Techniques on Vocal Performance <i>Alessio Carullo, Arianna Astolfi, Alessio Atzori, Vittoria Carlino, Antonella Castellana, Claudio Fabro and Marco Fantini</i>	7789

Friday, September 13

20 N - Acoustics and noise in hospitals: experience and impact on patients, staff and community well-being

Next Steps in Hospital Noise Research <i>Ilene Busch-Vishniac</i>	7797
An investigation of room functions and acoustic demands in selected departments in three Danish hospitals <i>Thea Mathilde Larsen, Cheol-Ho Jeong, Mai-Britt Beldam, Jonas Brunskog and Christoffer Weitze</i>	7803
Cognitive Effects of Noise on Hospital Emergency Department Staff <i>Khaleela Zaman, Peter Dodds, Ning Xiang and Paul Barach</i>	7811
Experimental Design to Measure the Effect of Room Acoustics on Prospective Memory of Hospital Nurses <i>Jikke Reinten, Ella Braat-Eggen, Maarten Hornikx, Helianthe Kort and Armin Kohlrausch</i>	7817
A targeted noise reduction observational study for reducing noise in a neonatal intensive unit <i>Paul Barach, S Chawla, M Dwaihy, D Kamat, S Shankaran, B Panaitescu, B Wang and G Natarajan</i>	7825
Staff experience of sound environment in operating rooms built with non-absorbing modules <i>Maria Quinn</i>	7833
Time-based soundscape evaluation of third-class hospital ward <i>Anugrah Sabdono Sudarsono, Sugeng Joko Sarwono, Aisyah Shabrina and Laudita Natasha Tamrin</i>	7840
Characterizing Community Noise in Hospital <i>Chiung Yao Chen</i>	7847

Effect of Head-Movement on Sound-Field Auditory Steady- State Response Measurements <i>Sreeram Kaithali Narayanan, Søren Laugesen, Valentina Zapata-Rodriguez, Jonas Brunskog and Cheol-Ho Jeong</i>	7855
---	------

Friday, September 13

20 O - Spatial and binaural evaluation

The CHORDatabase: a twenty-one concert hall spherical microphone and loudspeaker array measurement database <i>Matthew Neal and Michelle Vigeant</i>	7863
Does the method matter? A review of the main testing methods for the subjective evaluation of room acoustics through listening tests. <i>Daniel de la Prida, Antonio Pedrero, Luis A. Azpicueta-Ruiz, María Ángeles Navacerrada and César Díaz</i>	7871
Loudness in different rooms versus headphone reproduction: Is there a mismatch even after careful equalization? <i>Michael Kohnen, Florian Denk, Josep Llorca-Bofí, Michael Vorländer and Birger Kollmeier</i>	7879
Sound image localization by bone-conducted sound <i>Takai Kazuki and Asakura Takumi</i>	7887
Accurate reproduction of binaural recordings through individual headphone equalization and time domain crosstalk cancellation <i>David Hadley Griesinger</i>	7895
Identification of the Room Characteristics Using a Spherical Microphone Array <i>Frederico Heloui de Araujo, Julio Cesar Boscher Torres and Fernando Augusto de Noronha Castro Pinto</i>	7903
The role of median plane reflections in the perception of vertical auditory movement <i>Florian Wendt, Matthias Frank and Robert Höldrich</i>	7911
Experiencing Room Acoustics Through a Library of Multichannel High-Resolution Room Impulse Responses <i>Wieslaw Woszczyk and David Benson</i>	7919

Friday, September 13

21 L - Audio visual interactions for noise perception

Audio/Visual Interaction in the Perception of Sound Source Distance <i>Pavel Zahorik</i>	7927
Questions applied in audio and visual environment assessment <i>Jan Felcyn, Anna Preis, Marcin Praszkowski and Małgorzata Wrzosek</i>	7932
The Human Perception based on Memory Recall of the Multi-sensory Stimuli in Outdoor Urban Space <i>Ni Putu Amanda Nitidara, Anugrah Sabdono Sudarsono, Ranti Dwi Tassia, Joko Sarwono and Fx Nugroho Soelami</i>	7940

Friday, September 13

21 P - Noise indicators and exposure assessment for health impact and soundscape studies

Exploring associations between soundscape assessment, perceived safety and well-being: a pilot field study in Granary Square, London <i>Francesco Aletta, Luca Molinero, Arianna Astolfi, Sonja Di Blasio, Louena Shtrepi, Tin Oberman and Jian Kang</i>	7946
Relationships between noise annoyance, urban soundscape and acoustic indicators in the French city of Lorient <i>Pierre Aumond, Arnaud Can and Catherine Lavandier</i>	7954

Table of Contents - ICA 2019 / EAA Euroregio

SiRENE-Survey Part 1: Exposure-effect relationships for transportation noise annoyance in Switzerland <i>Mark Brink and Jean Marc Wunderli</i>	7961
SiRENE-Survey Part 2: Effects of Intermittent versus Continuous Noise on Annoyance Reactions <i>Jean Marc Wunderli and Mark Brink</i>	7962
Noise and hypertension: Testing alternative acoustic indicators <i>Peter Lercher, Reto Pieren and Jean Marc Wunderli</i>	7963
Opportunistic In-Vehicle Noise Measurements assess Road Surface Quality to Improve Noise Mapping: Preliminary Results from the MobiSense Project <i>Luc Dekoninck, Wout van Hauwermeiren, Joachim David, Karlo Filipan, Toon de Pessemier, Bert de Coensel, Wout Joseph, Luc Martens and Dick Botteldooren</i>	7971
Estimation of psychoacoustic indices and annoying auditory sensations from sound pressure levels of urban road traffic <i>Catherine Marquis-Favre, Pierre-Augustin Vallin, Laure-Anne Gille and Wolfgang Ellermeier</i>	7979
Noise indicator evaluation of road and rail traffic noise for indoor- outdoor differences in acoustic parameters <i>Manuel Lienhart, Peter Lercher, Michael Cik and Martin Fellendorf</i>	7987
Relative Duration of Quiet Periods Between Events Influences Noise Annoyance: a Laboratory Experiment with Helicopter Sounds <i>Armin Taghipour, Reto Pieren and Beat Schäffer</i>	7995

Friday, September 13

22 B - Sound quality of everyday-life products

Acoustically-friendly products - Sound quality as an emission related product feature <i>André Fiebig</i>	8003
Sound Quality Improvement of Operation Sounds Emitted by MFPs <i>Masao Yamaguchi</i>	8009
A Design Method for UI-sounds for Electrical Appliances <i>Sanae Wake</i>	8017

Friday, September 13

22 C - Sound quality of fans and HVAC-systems

Sound Quality Evaluation of Refrigerated Truck Noise <i>Weonchan Sung, Patricia Davies and J. Stuart Bolton</i>	8024
Quantification of the unpleasantness of fan noise in the form of preference-equivalent levels <i>Stephan Töpken and Steven van de Par</i>	8031
"Humming" or "Hissing"? - Psychoacoustical investigation of sounds from heat pumps <i>Marc Schneider and Carolin Feldmann</i>	8036
HVAC noise perception in car cabin: a preliminary comparison between ICEVs and HEVs <i>Massimiliano Masullo, Katsuya Yamauchi, Yumi Nakatani and Luigi Maffei</i>	8042
Improvement of Construction Machine Noise <i>Takeo Hashimoto and Shigeo Hatano</i>	8048
Study on the Evaluation Index of the Tonal Noise Components Generated from Small Fan <i>Takefumi Nakano and Gaku Minorikawa</i>	8055
Acoustic attenuators for aggressive environments <i>Chris van Dijk</i>	8063

Friday, September 13

24 F - Structural intensity - Computation, measurement, application

Renaissance of the Structural Intensity Analysis <i>Heow Pueh Lee and Kian Meng Lim</i>	8069
Investigation towards an Active Barrier for Structure Borne Sound using Structural Intensity <i>Alexander Kokott, Thomas Haase and Hans Peter Monner</i>	8073
Numerical study on energy transmission for soft materials and metamaterials structures by structural intensity method <i>Rong Huang, Ziqian Li, Yiheng Xue and Zishun Liu</i>	8081
Low vibration design for shell structure based on structural intensity distribution <i>Takeshi Miyama, Hiroki Nakamura, Toru Kikuchi and Toru Yamazaki</i>	8087
Structural intensity estimation via displacement and shape measurements of thin shells <i>Felipe Pires, Stéphane Avril, Steve Vanlanduit and Joris Dirckx</i>	8095
Measurement of the structural intensity of curved shell structures by means of 3D laser vibrometry <i>Nikolai Kleinfeller, Joachim Bös and Tobias Melz</i>	8102
Development of energy propagation analysis methods for low- frequency phenomena at BMW <i>Peter Groba, Johannes Ebert, Torsten Stoewer, Joachim Bös and Tobias Melz</i>	8110
Experimental Structure Intensity Analysis of an Airbus A400M fuselage structure using high-resolution vibration measurements <i>René Winter, Simon Heyen and Jörn Biedermann</i>	8118

Friday, September 13

24 W - General 'Structure-borne sound and vibration engineering'

Design of lightweight skeletal structures for noise mitigation <i>Heow Pueh Lee, Sanjay Kumar, Thong Hoi Yong, Umeyr Kureemum and Xu Song</i>	8126
Application of Dynamic Substructuring and in situ Blocked Force Method for Structure Borne Noise Prediction in Industrial Machinery <i>Diego Miguez, Oliver Farrell, Mark A. Bannister, Ryan Arbabi, Andy Moorhouse and Andrew Elliott</i>	8132
Vibration transmission between two reinforced concrete beams with surface-to-surface contact conditions <i>Marios Filippoupolitis and Carl Hopkins</i>	8140

Friday, September 13

25 B - Non-destructive evaluation (NDT)

Defect detection using the identification of resonance frequency by spatial spectral entropy for noncontact acoustic inspection method <i>Kazuko Sugimoto, Tsuneyoshi Sugimoto, Noriyuki Utagawa and Chitose Kuroda</i>	8148
Identifying objects in a 2D-space utilizing a novel combination of a re-radiation based method and of a difference-image-method <i>Andreas Sebastian Schmelt, Torben Marhenke and Jens Twiefel</i>	8156
Guided Lamb and edge wave excitation by piezoelectric transducers in elastic plates <i>Mikhail Golub, Artem Eremin, Maria Wilde, Alisa Shpak and Inka Mueller</i>	8164
Outer Wall Inspection by Noncontact Acoustic Inspection Method using Sound Source Mounted Type UAV <i>Tsuneyoshi Sugimoto, Kazuko Sugimoto, Ituski Uechi, Noriyuki Utagawa and Chitose Kuroda</i>	8172
Ultrasonic Spectroscopy to Characterize Flaws, Porosity and Adhesive Bonds <i>Laszlo Adler</i>	8180

The Effect of Water Saturation on the P-wave velocity of Sedimentary Rocks <i>Sair Kahraman</i>	8188
Baseline-Free Repetitive Pump-Probe Experiment for Structural Health Monitoring <i>Marina Terzi, Lynda Chehami, Emmanuel Moulin, Vladislav Aleshin and Nikolay Smagin</i>	8193
Friday, September 13	
25 W - General 'Ultrasound'	
Comparison of Cavitation Effect in Case of Fixed and Free Fibers in an Ultrasound Beaker <i>Taraka Rama Krishna Pamidi, Örjan Johansson and Torbjörn Löfqvist</i>	8201
Time-resolved imaging of GHz acoustic waves in two-dimensional phononic crystals with an arbitrary-frequency technique <i>Osamu Matsuda, Hiroki Muramoto, Hiroki Nishita, Kentaro Fujita, Motonobu Tomoda and Oliver Wright</i>	8209
Attenuation Mechanisms of High-Frequency Acoustic Waves in Piezoelectric Cubic Crystals <i>Farkhad Akhmedzhanov, Sirojiddin Mirzaev and Ulugbek Saidvaliev</i>	8212
Friday, September 13	
26 B - Novel Ultrasound Imaging and Stimulation	
Local Phase Velocity Imaging (LPVI) as a New Technique for Shear Wave Elastography <i>Matthew Urban and Piotr Kijanka</i>	8218
Transcranial focusing of arbitrary ultrasonic fields using acoustic holograms <i>Sergio Jiménez-Gambín, Noé Jiménez, Jose M. Benlloch and Francisco Camarena</i>	8225
Viscoelasticity measurement comparison between microelastography and surface fluctuations <i>Pol Grasland-Mongrain, Stefan Catheline, Ali Zorgani, Ludovic Bellon, Thomas Gibaud and Sébastien Manneville</i>	8230
Friday, September 13	
27 A - Auditory cognition in interactive virtual environments	
Cognitive indicators for acoustic source localization and presence in a vivid 3D scene <i>Patrick Ruediger, Jan Spilski, Nûjîn Kartal, Sebastian Gsuck, Nils Ove Beese, Sabine Schlittmeier, Thomas Lachmann and Achim Ebert</i>	8234
The Ability to Allocate Attentional Resources to a Memory Task Predicts Speech-on-Speech Masking for Older Listeners <i>Frederick Jerome Gallun and Kasey Marie Jakien</i>	8242
Examining auditory selective attention in realistic, natural environments <i>Josefa Oberem, Julia Seibold, Iring Koch and Janina Fels</i>	8250
Attentional mechanisms in static and dynamic cocktail-party listening <i>Hartmut Meister, Fabian Wenzel, Axel Gehlen and Martin Walger</i>	8251
Leveraging adaptation to study perceptual weighting of interaural time differences <i>Antje Ihlefeld and Nima Alamatsaz</i>	8253