Program of the ICTCA2017

July 28, 2017

For contributions printed in gray we have not yet recieved a payment of the registration fee. These authors must pay the full registration fee in cash on-site when registering in the conference office.

Monday

09:00–09:30 Opening

09:30–10:15 Plenary Lecture

GM1 Audimax, Building BA Chair: P. Borejko

Sean F. Wu (Wayne State University, USA) *Interrelationships among force excitation, structural vibration, and sound radiation*

Acoustic and Elastic Metamaterials

GM1 Audimax, Building BA Chair: J.-P. Groby

10:45–11:15 Jean-Philippe Groby *Rainbow-trapping absorbers for transmission problems: Broadband and perfect sound absorbing panels* (invited)

11:15–11:45 Z. Yang *Decorated Membrane Resonators* (invited)

11:45–12:05 Muamer Kadic *Controlling and absorbing mechanical waves*

12:05–12:25 Philippe Leclaire *Low frequency and nonlinear acoustical behaviour of plates with perforations bearing periodically spaced flat resonators*

12:25–12:45 Guangxu Dong *Multi-dimensional Low-frequency Suspension via synthesizing high-static-low-dynamic stiffness isolator and pendulum system*

Advances in Modeling of Wave Propagation in Time Domain and Applications

Lecture Hall **GM2** Radinger, Building BD Chair: G. Seriani, S. P. Oliveria

10:45–11:05 Christian Boehm *Salvus: An Open-Source Package for Time-Domain Waveform Modeling and Inversion Across the Scales* (invited)

11:05–11:25 Christian Stohrer *Error Analysis of Non-Conforming FE Methods for Wave-Type Problems and its Application to Heterogeneous Multiscale Methods* (invited)

11:25–11:45 Saulo P. Oliveira *Error Analysis of Spectral Element Methods for the Acoustic Wave Equation in Heterogeneous Media*

11:45–12:05 Hanan Amar *Mixed-Dimensional Modeling of Time-Dependent Wave Problems Using the Nitsche Method* (invited)

12:05–12:25 Andres Prieto *A modal-based partition of unity finite element method for layered wave propagation problems* (invited)

12:25–12:45 Simon Chabot *A high-order discontinuous Galerkin method for 1D-3C wave propagation in nonlinear heterogeneous media* (invited)

Aeroacoustics

GM3 Vortmann Lecture Hall, Building BA Chair: S. Becker

10:45–11:05 Stefan Becker *Simulation of Sound Radiation based on PIV Measurements* (invited)

11:05–11:25 Vyacheslav Korchagin *On The Computaional Performance Of The Hybrid Aeroacoustic Solver Applied To Confined Flows* (invited)

11:25–11:45 Stefan Schoder *Helmholtz-Hodge decomposition of compressible flow data on homologically trivial domains* (invited)

11:45–12:05 Mahmoud Karimi *Acoustic response of a flat plate due to a turbulent boundary layer excitation*

12:05–12:25 Michael Gruenewald *Noise Sources from Flow over a Forward-Facing Step* (invited)

12:25–12:45 Claus-Dieter Munz *Direct aeroacoustic simulation of whistling noise at a side mirror using a high order discontinuous Galerkin method* (invited)

Attenuation and Dissipation of Vibrational and Acoustical Energy

Lecture Hall **GM4** Knoller, Building BD Chair: A. D. Pierce

10:45–11:15 Adnan Akay *A Prototypical Example for Damping and Dissipation* (invited)

11:15–11:45 Subramanian Ramakrishnan *Nonlinear damping in piezoelectric vibrational energy harvesters excited by Brownian and Lévy stable stochastic processes* (invited)

11:45–12:15 Joseph Vignola *Numerical Analysis of a Piezoelectrically Modulated Oscillator Array* (invited)

12:15–12:45 Shigeto Nakamura *Behavior of Sound Waves at the Vapor-liquid Interface Accompanied with Evaporation and Condensation* (invited)

Shallow-Water Acoustics

Seminar Room BD **02A**, Building BD Chair: E. Shang, J. Zeng

10:45–11:05 Boris Katsnelson *Sound intensity fluctuations in the presence of moving nonlinear internal waves in shallow water* (invited)

11:05–11:25 Shengchun Piao *Monitoring Internal Wave with Broadband Interference Pattern of Normal Mode Amplitude* (invited)

11:25–11:45 Hangfang Zhao *Maximum Entropy Method for Reconstruction of Ocean Current Field* (invited)

11:45–12:05 Z. D. Zhao *Tomographic Inverting for Intrinsic Attenuation of Sea-bed Sediment*

12:05–12:25 Qunyan Ren *Sequential processing of multiple explosive sources for bottom characterization in shallow waters*

12:25–12:45 Juan Zeng *The Frequency Dependence of the Effective Seabed Sound Speed Inverted from 2016 Yellow Sea Experimental data*

Acoustical Propagation through Internal Waves in an Ocean

Seminar Room BA **02B**, Building BA Chair: C.-S. Chiu

10:45–11:15 Yiing Jang Yang *Observations of Shoaling Internal Solitary Waves and their Properties in the Sand-wave Area on Upper Continental Slope of Northern South China Sea* (invited)

11:15–11:45 Chi-Fang Chen *Sound propagation of the continental slope and sand dunes in the northeastern South China Sea* (invited)

11:45–12:15 Christopher W. Miller *Measurement of Transmission Loss Using an Inexpensive Mobile Source on the Upper Slope of the South China Sea* (invited)

12:15–12:45 Timothy F. Duda *Acoustic field horizontal variability and direction of arrival estimation in a canyon with internal tides* (invited)

12:45–13:15 Ying-Tsong Lin *Three-Dimensional Sound Propagation and Scattering in an Oceanic Waveguide with Surface and Internal Gravity Waves over Range-Dependent Seafloor* (invited)

14:15–15:00 Plenary Lecture

GM1 Audimax, Building BA Chair: M. Kaltenbacher

Steffen Marburg (Technical University of Munich, Germany) *Surface Contribution Analysis Using Non-Negative Intensity*

Acoustic and Elastic Metamaterials

GM1 Audimax, Building BA Chair: C. Rubio

15:30–16:00 Constanza Rubio *An open acoustic barrier. Design and characterization* (invited)

16:00–16:30 N. G. R. de Melo Filho *On the use of the dynamic mass of metamaterials to calculate the transmission loss based on the acoustic mass law* (invited)

16:30–16:50 Hsin-Haou Huang *Manipulation of Acoustic Waves using Deformationdriven Tunable Auxetic Metamaterials*

16:50–17:10 George Fytas *Soft matter based hypersonic phononic hybridization gaps*

17:10–17:30 Kun Jia *Soft active material based acoustic filter*

Advances in Modeling of Wave Propagation in Time Domain and Applications

Lecture Hall **GM2** Radinger, Building BD Chair: S. P. Oliveira, G. Seriani

15:30–15:50 Maryna Kachanovska *Stable Perfectly Matched Layers for a Class of Metamaterials* (invited)

15:50–16:10 Silvia Falletta *FEM solution of exterior problems with weakly enforced integral non reflecting boundary conditions* (invited)

16:10–16:30 Sabine Langer *Analysis of the cumulant lattice Boltzmann method for acoustics problems* (invited)

16:30–16:50 Olivier Jacquet *A Gaussian wave packets approach for transient ultrasonic NDE modeling*

16:50–17:10 Harold Berjamin *Modeling Longitudinal Wave Propagation in Solids with Slow Dynamics: Application to DAE Experiments*

Aeroacoustics

GM3 Vortmann Lecture Hall, Building BA Chair: S. Becker

15:30–15:50 J. Grabinger *Finite Element Simulations of Flow Induced Sound from Blowers* (invited)

15:50–16:10 Matthias Tautz *Aeroacoustic Simulation of Complex HVAC Components* (invited)

16:10–16:30 Max Meindl *Determination of Acoustic Scattering Matrices from Linearized Compressible Flow Equations*

Attenuation and Dissipation of Vibrational and Acoustical Energy

Lecture Hall **GM4** Knoller, Building BD Chair: A. Akay

15:30–16:00 Amr Baz *Band Gap and Dispersion Characteristics of Structures with Viscoelastically Damped Resonant Periodic Inserts* (invited)

16:00–16:30 Allan D. Pierce *Radiative Decay and Relaxation Processes in Vibrational and Acoustical Energy Dissipation* (invited)

16:30–17:00 Subramanian Ramakrishnan *Nonlinear dissipation in the classical dynamics of a nanomechanical resonator coupled to a single electron transistor* (invited)

17:00–17:30 J. T. Wu *Seismic Modulus Response of Asphalt Pavement in Accelerated Loading Tests with Rayleigh Wave* (invited)

Shallow-Water Acoustics

Seminar Room BD **02A**, Building BD — Chair: J. Zeng, E. Shang

15:30–15:50 Boris Katsnelson *Analytical and numerical solution for whispering gallery waves near curved isobaths in shallow water*

15:50–16:10 Qunyan Ren *Characteristic acoustic impedance for more reliable environmental characterization*

16:10–16:30 Bo Hu *Effectively Enhancement of Underwater Asymmetric Acoustic Transmission in a Gradient-Index Structure*

16:30–16:50 Dayong Peng *Equivalent Sound Source Level of Vertical Phased Array at Long Range in Shallow Water*

16:50–17:10 Xin Yi Guo *Spatial Variability of Ocean Ambient Noise Spectrum in China Offshore*

17:10–17:30 Jin Rong Wu *Reverberation intensity decaying in range-dependent waveguide*

Panel Contribution Analysis

Seminar Room BA **02B**, Building BA — Chair: S. Marburg

15:30–15:50 Grégory Lielens *Application of Panel Contribution Analysis to Finite Element Acoustic Modelling* (invited)

15:50–16:10 Kirill Shaposhnikov *Panel Contribution Analysis based on FEM and Numerical Green's Function Approaches* (invited)

16:10–16:30 Arnaud Caillet *Panel Contribution Analysis, One of the Tools to Diagnose the Energy Transfer* (invited)

16:30–16:50 Daipei Liu *Non-Negative Intensity for Structures with Inhomogeneous Damping* (invited)

Tuesday

09:00–09:45 Plenary Lecture

GM1 Audimax, Building BA — Chair: P. Borejko

Yu-Chiung Teng (Columbia University, USA) *The Elasto-Dynamic Transient Problem for a Fluid/Solid Coupled Medium*

Acoustic and Elastic Metamaterials

GM1 Audimax, Building BA — Chair: A. Krokhin

10:15–10:45 Arkadii Krokhin *Nonreciprocal transmission of sound through a 2D phononic crystal with viscous background and broken P-symmetry of the unit cell* (invited)

10:45–11:05 Romain Fleury *Topological wave transport in acoustic systems*

11:05–11:25 Si-Yuan Yu *Monolithic Surface Acoustic Zitterbewegung Oscillation and Acoustic Topological Insulator*

Seismic Attenuation and Seismic Data Processing

Lecture Hall **GM2** Radinger, Building BD — Chair: Y.-C. Teng, H. Zhao

10:15–10:45 Junxiong Jia *Variable-order Besov Bayesian theory for full waveform inversion of seismic data* (invited)

10:45–11:15 Xinhua Zhang *Analysis of the Viscoelastic Wave Propagation via the Adomian Decomposition Method* (invited)

11:15–11:35 Lingling Wang *Q Correction Based on Seismic Structure Constrained Molecular Decomposition*

11:35–11:55 Qian Wang *Q Estimation using an improved frequency shift method*

11:55–12:15 Haixia Zhao *Modeling Attenuation of Diffusive-viscous Wave Using Reflectivity Method*

Advances in Sel. Topics in Acoustics, Applied Mechanics, and Mechatronics

GM3 Vortmann Lecture Hall, Building BA Chair: R. Heuer, C. Adam

10:15–10:30 Rudolf Heuer *Franz Ziegler - Renowned Teacher and Scholar* (invited)

10:30–10:55 Hans Irschik *An efficient model-reduction technique for computing the thermo-mechanical behaviour of the strand in a continuous casting machine.* (invited)

10:55–11:20 Yuriy Nyashin *Congenital Cleft Biomechanics as Deformation Control Problem by Eigenstrain* (invited)

11:20–11:45 Peter A. Fotiu *Crack Detection in Beam Structures by Modal Identification* (invited)

11:45–12:10 Christoph Adam *Reliability Analysis of Ballasted Steel Bridges Crossed by High-Speed Trains* (invited)

Ocean Acoustic and Geoacoustic Inversion

Seminar Room BD **02A**, Building BD Chair: S. Dosso

10:15–10:45 Zoi-Heleni Michalopoulou *Shallow Water Geoacoustic Inversion: a Sequential Filtering Approach* (invited)

10:45–11:15 Charles W. Holland *Broadband measurements of the seabed critical angle – inferences for sound speed dispersion in a sandy sediment* (invited)

11:15–11:45 Stan E. Dosso *Sediment Parameter Inversions in the East China Sea* (invited)

11:45–12:15 Kevin B. Smith *Implications of vector-scalar reciprocity for acoustic inversion processing* (invited)

Seismo-Acoustics, Electromagnetics, and Multiphysics Coupling

Lecture Hall **GM4** Knoller, Building BD Chair: Y. Sun, Q. H. Liu

10:15–10:45 Jinghuai Gao *A Data Driven Representation Method for Nonstationary Convolution Seismic Trace Model with Application to Enhancing Resolution of Seismic Data* (invited)

10:45–11:15 Qing Huo Liu *Discontinuous Galerkin Algorithm for Elastic Wave Scattering by Arbitrary Discrete Fractures* (invited)

11:15–11:45 Xiao He *Theoretical and Numerical Simulations of the Indirect Collar Waves in Sonic Logging While Drilling* (invited)

11:45–12:15 Yuefeng Sun *Sensitivity of Biot Slow Wave to Fluid Content and Pore Structure of Fractured Porous Rocks* (invited)

Model Order Reduction and Numerical Acoustics

Seminar Room BA **02B**, Building BA Chair: S. Marburg

10:15–10:35 Axel van de Walle *Automatic Model Reduction and Error Estimation for Vibro-Acoustic Models Using Krylov Subspaces*

10:35–10:55 Sjoerd van Ophem *Efficient Vibro-acoustic Model Updating of Localized Properties using Low-Rank Parametric Model Order Reduction Schemes*

10:55–11:15 Lennart Moheit *Normal Modes and Modal Reduction in Exterior Acoustics*

11:15–11:35 Axel van de Walle *Virtual Microphone Sensing for Vibro-Acoustics*

11:35–11:55 Subhashini Chitta *Diffraction Model for Propagation over Realistic Terrain*

11:55–12:15 Jean Paiva *SIS - On-line Sound Airborne Software*

13:45–14:30 Plenary Lecture

GM1 Audimax, Building BA Chair: M. Kaltenbacher

Martin Schanz (Graz University of Technology, Austria) *Variable Time Steps in Time Domain Boundary Elements*

Acoustic and Elastic Metamaterials

GM1 Audimax, Building BA Chair: B. Popa

15:00–15:30 Fabrice Lemoult *Soda Cans Metamaterial: A Subwavelength-Scaled Phononic Crystal* (invited)

15:30–15:50 Theodore P. Martin *Anti-tetrachiral Lattices as Acoustic Metamaterials*

15:50–16:10 V. J. Sánchez-Morcillo *Nonlinear Waves in a Lattice of Magnetic Dipoles*

16:10–16:30 Constanza Rubio *Design and characterization of ultrasonic lenses based on generalized Cantor sets*

16:30–16:50 Juan F. R. Archilla *Nonlinear Waves in Layered Ionic Crystals*

Seismic Attenuation and Seismic Data Processing

Lecture Hall **GM2** Radinger, Building BD Chair: J. Gao, H. Li

15:00–15:20 Guowei Zhang *Q Estimation from the Envelope Peak Instantaneous Frequency based on Generalized Seismic Wavelet*

15:20–15:40 Bangyu Wu *Anti-aliasing in Kirchhoff beam migration*

15:40–16:00 Qian Wang *Seismic Instantaneous Attributes Extraction and Applications to Reservoir Characterization*

16:00–16:20 Haixia Zhao *A robust and precise seismic dip estimation method based on instantaneous phase*

16:20–16:40 Bangyu Wu *The DAS coupling noise removal using alternating projection iteration with united sparse transforms*

16:40–17:00 Zhen Li *Random noise attenuation of seismic data using variational mode decomposition and time-frequency peak filtering*

Advances in Sel. Topics in Acoustics, Applied Mechanics, and Mechatronics

GM3 Vortmann Lecture Hall, Building BA Chair: C. Adam, R. Heuer

15:00–15:25 Amares Chattopadhyay *Propagation of a Kind of Surface Waves in Case of Rigid Boundary* (invited)

15:25–15:50 Michael Krommer *Nonlinear electro-elastic shells: Modelling and stability analysis* (invited)

15:50–16:10 Valeriy Lokhov *Stress and Deformation Control by Eigenstrain*

16:10–16:30 Johannes Pistrol *Simple Mechanical Modelling Applied to Dynamic Roller Compaction*

16:30–16:50 Christian Gasser *Estimation of small failure probabilities in high dimensions by asymptotic sampling*

Seismo-Acoustics, Electromagnetics, and Multiphysics Coupling

Lecture Hall **GM4** Knoller, Building BD Chair: Q. H. Liu, Y. Sun

15:00–15:45 Jan Vrba *Overview of Applications of Microwaves in Medicine* (invited)

15:45–16:30 Qing Huo Liu *Piezoelectric Transducer Modeling in Anisotropic Media* (invited)

16:30–17:00 Yuefeng Sun *Dielectric Signature of Living Microorganisms in Sediments and Rocks: Theoretical Model and Numerical Results* (invited)

Ocean Acoustic and Geoacoustic Inversion

Seminar Room BD **02A**, Building BD Chair: S. Dosso

15:00–15:30 Michael Taroudakis *Similarity Measurements of Acoustic and Seismic signals* (invited)

15:30–15:50 Nikita S. Novikov *Direct method for solving coefficient inverse problems for hyperbolic equations, based on Gelfand-Levitan approach*

15:50–16:10 Stan E. Dosso *Gradient-based Model Parameterizations in Bayesian Geoacoustic Inversion*

Wednesday

09:00–09:45 Plenary Lecture

GM1 Audimax, Building BA Chair: P. Borejko

Ching-Sang Chiu (Naval Postgraduate School, USA) *Progresses in the Understanding of the Northeastern South China Sea Sound Field: Experimentations and Modeling*

Acoustic and Elastic Metamaterials

GM1 Audimax, Building BA Chair: A. Baz

10:15–10:45 Bogdan-Ioan Popa *Achieving Negligible Shear in Mechanically Robust Acoustic Metamaterials for Underwater Operation* (invited)

10:45–11:15 Amr Baz *Active Acoustic Metamaterial with Tunable Effective Density using A Disturbance Rejection Controller* (invited)

11:15–11:35 Han Jia *Design and Demonstration of an Underwater Acoustic Carpet Cloak*

11:35–11:55 Özgür Selsil *Active Cloaking for Flexural Waves in a Pinned Kirchhoff Plate*

11:55–12:15 Andrew Norris *Highly Directional Source Radiation using Isotropic Transformation Acoustics*

Seismic Attenuation and Seismic Data Processing

Lecture Hall **GM2** Radinger, Building BD Chair: J. Gao, J. Peng

10:15–10:35 Yijie Zhang *Seismic Source Simulation for Poroelastic Wave Equations*

10:35–10:55 Hui Li *The difference and correlation between the static modulus and dynamic modulus*

10:55–11:15 Fengyuan Sun *The reflection of the inhomogeneous seismic wave in the generalized viscoelastic model*

11:15–11:35 Yanbin He *Simulation of Elastic Wave Propagation in Media with an Elastic-poroelastic Interface Using COMSOL Multiphysics*

Modern Mathematical Methods for Signal Processing in Audio and Acoustics

GM3 Vortmann Lecture Hall, Building BA Chair: G. Tauböck

10:15–10:35 Georg Tauböck *Modern Mathematical Methods for Signal Processing in Audio and Acoustics*

10:35–10:55 Jont B. Allen *The Inverse Short-Time Fourier Transform (ISTFT) and its applications* (invited)

10:55–11:15 Zdeněk Průša *Accelerating Matching Pursuit In Gabor Dictionaries*

11:15–11:35 İlker Bayram *Applications of the SWAG Penalty to Audio Reconstruction Problems* (invited)

11:35–11:55 Feng Huang *Frame Mask for Robust Representation of Speaker Characteristics*

11:55–12:15 Wolfgang Kreuzer *Frames in boundary element methods*

Acoustical Modeling Related to the CTBT International Monitoring System

Lecture Hall **GM4** Knoller, Building BD Chair: M. Zampolli

10:15–10:45 Allan D. Pierce *Early Developments in the Modeling of Infrasound Propagation from Atmospheric Nuclear Explosions* (invited)

10:45–11:15 Alexis Bottero *Numerical Simulations of T-wave Generation and Propagation: Comparison Between Earthquake and Explosion-generated T-waves.* (invited)

11:15–11:45 Sofi Esterhazy *Insights into the modeling of seismic waves for the detection of underground cavities* (invited)

Vibration Mitigation and Sound Absorbers

Seminar Room BD **02A**, Building BD Chair: M. Kaltenbacher

10:15–10:35 Ilya Tsukernikov *Vibration Isolation System Influence on Structural Stiffness of Buildings Adjacent to Metro Lines*

10:35–10:55 Hyukju Ham *Prediction of the vibration response of the seat back with variable stiffness*

10:55–11:15 Deokman Kim *Effects of the rotational stiffness affecting on the dynamic characteristics of the vehicle seat back*

11:15–11:35 Jin Jie *FEM modeling and analysis on the mechanism of vibration reduction of railway with impact absorber*

11:35–11:55 Sebastian Floss *Application of an equivalent fluid model for the simulation of sound absorption properties of microperforated panels in 3D environments*

11:55–12:15 Roman Kisler *Extended analytical Model for the Transmission Loss of a Plate Silencer in a Flow Duct*

12:15–12:35 Bouttout Abdelouahab *Modeling and Measurement of the impact noise transmission through reduced size heavyweight floor*

Inverse Problems in Acoustics

Seminar Room BA **02B**, Building BA Chair: D. Givoli

10:15–10:35 Barbara Kaltenbacher *Acoustic Source Localization from Microphone Measurements using an Inverse Scheme based on Finite Element Simulations*

10:35–10:55 V. Quaranta *Real-Time FPGA Beam-forming Algorithm Validation for Acoustic Antenna*

10:55–11:15 Gi Hoon Byun *Robust Multiple Time-Reversal Focusing*

11:15–11:35 Sea-Moon Kim *Implementation of a Bandpass Filter and Beamforming Algorithms for Source Direction Finding for an ROV*

11:35–11:55 Gabriel Wittum *Modelling and Simulation of Musical Instruments*

Acoustic and Elastic Metamaterials

GM1 Audimax, Building BA Chair: M. Smith

13:45–14:15 M. J. A. Smith *Metamaterials for enhanced acousto-optic interactions* (invited)

14:15–14:45 Michael R. Haberman *Scattering from Bianisotropic Acoustic Media* (invited)

14:45–15:05 Ruiwen Yao *Understanding the Willis elastodynamics equations with the displacement coupling terms*

15:05–15:25 Claude Boutin *Non-conventional dynamic behaviour of highly contrasted structured plates*

15:25–15:45 Tony Valier-Brasier *Propagation of coherent transverse waves in composite materials containing hard spherical inclusion*

Seismic Attenuation and Seismic Data Processing

Lecture Hall **GM2** Radinger, Building BD Chair: Y.-C. Teng, Y. Wu

13:45–14:15 Hongjuan Quan *Several Problems on Numerical Simulation for Seismic Source Loading* (invited)

14:15–14:35 Shuhong Zhao *The Comparison of Zero Phase Wavelet after 90 Degree Phase Shift and the Trace Integration Method in Seismic Interpretation*

14:35–14:55 Yinting Wu *Modified Forward of Zero-offset VSP Record with Attenuation based on Ganley's Theory*

14:55–15:15 J. T. Wu *A Mathematical Morphology Method for Denoising and Fracture Characterization in Seismic Exploration*

15:15–15:35 Yinting Wu *Location of Acoustic Emission Microseismic Events based on Phase-only Correlation and Genetic Algorithm*

Modern Mathematical Methods for Signal Processing in Audio and Acoustics

GM3 Vortmann Lecture Hall, Building BA Chair: G. Tauböck

13:45–14:05 Manuel Gräf *Kernel-based Reconstruction of Solutions of the Helmholtz Equation*

14:05–14:25 Luís Daniel Abreu *Time-frequency analysis and determinantal point processes*

Acoustical Modeling Related to the CTBT International Monitoring System

Lecture Hall **GM4** Knoller, Building BD Chair: G. Haralabus

13:45–14:15 Piotr Borejko *A Theoretical Model of 3-D Acoustical Propagation on the Continental Shelf* (invited)

14:15–14:45 Kevin D. Heaney *Three-Dimensional Global Acoustic Propagation* (invited)

14:45–15:15 Michael D. Collins *Numerical and experimental modeling of 3-D ocean acoustics problems* (invited)

15:15–15:45 Felix Schneider *On the Application of Resonance Seismometry for Cavity Detection* (invited)

Modeling and Simulation of Waves in Moving and Inhomogeneous Media

Seminar Room BD **02A**, Building BD Chair: D. Masovic, M. Kaltenbacher

13:45–14:05 Christophe Bailly *Propagation of infrasonic impulsive signals in the Earth's atmosphere* (invited)

14:05–14:25 Drasko Masovic *Comparison of Different Approaches for Calculation of Sound Radiation from an Open Pipe with a Flow*

14:25–14:45 Oleg A. Godin *Dissipation of infrasound and acoustic-gravity waves in inhomogeneous, moving fluids*

14:45–15:05 Hefeng Dong *Numerical Simulation of the effect of cement defects on flexural wave logging*

15:05–15:25 H. Landes *3D-Soundfield-Simulations for Ultrasonic Flowmeters*

15:25–15:45 Marcus Guettler *Solving Galbrun's Equation with a Discontinuous Galerkin Approach* (invited)

15:45–16:05 Konrad Pausch *Investigation of the Acoustic Flame Response in Turbulent Combustion* (invited)

Sound, Vibration, and Excitation

Seminar Room BA **02B**, Building BA Chair: S. F. Wu

13:45–14:15 Jung-San Chen *Wave Attenuation in Metamaterial Beams* (invited)

14:15–14:45 Dongki Min *The noise reduction using meta impact damper for water spray induced vibration* (invited)

14:45–15:15 Wen He *Research on the Finite-amplitude Sound Pressure in the Membrane-sealed Pistonphone* (invited)

Thursday

09:00–09:45 Plenary Lecture

GM1 Audimax, Building BA Chair: M. Kaltenbacher

Dan Givoli (Technion—Israel Institute of Technology, Israel) *Computational Time Reversal for Source and Scatterer Identification*

Acoustic and Elastic Metamaterials

GM1 Audimax, Building BA Chair: A. Maurel

10:15–10:45 Agnès Maurel *Effective behavior of periodic arrays of resonators* (invited)

10:45–11:15 Allan Greenleaf *Superdimensional Metamaterial Resonators From Sub-Riemannian Geometry* (invited)

11:15–11:35 Jont B. Allen *Group-Theoretic symmetry and Acoustic Metamaterial properties*

11:35–11:55 Luca Sangiuliano *On the Influence of Boundary Conditions on the Predicted Stop Band Width of Finite Size Locally Resonant Metamaterials*

Physical Acoustics

Lecture Hall **GM2** Radinger, Building BD Chair: P. Borejko

10:15–10:35 Tony Valier-Brasier *Study of the resonant interaction between two gas bubbles by using the spherical harmonics expansion*

10:35–10:55 Bin Wang *The Forward and Inverse Scattering Analysis of Love Waves due to A Cavity at the Interface*

10:55–11:15 Assia Oudina *Theoretical Study And Numerical Simulation Of The Reflection At Fluid-Fluid Interface Of Transient Ultrasonic Waves Radiated By A Linear Transducer*

11:15–11:35 Omid Rahmani *Ultrasonic wave diffraction from a single nano-fiber embedded in isotropic matrix*

11:35–11:55 Ilya Tsukernikov *Coupling Coefficient for Flux Density and Density Gradient of Reflected Sound Energy in Quasidiffuse Sound Fields*

11:55–12:15 Henryk Lasota *Plane wave kinedynamics in fluid continuum, and at a boundary delimiting two fluids*

Acoustical Boundary Elements and Related Topics

GM3 Vortmann Lecture Hall, Building BA Chair: R. Piscoya, H. Dogan

10:15–10:35 Ralf Burgschweiger *The Abused Can - A comparison of the results from numerical simulations and measurements of scattered sound pressure field on a "special" object within the higher frequency range* (invited)

10:35–10:55 Steffen Marburg *A pollution effect in the boundary element method* (invited)

10:55–11:15 Vicente Cutanda Henríquez *Boundary Element Method with Viscous and Thermal Losses: A Calibration Microphone Test Case* (invited)

11:15–11:35 Peter Risby Andersen *An Acoustic Hypersingular Boundary Element Formulation Including Viscous and Thermal Losses* (invited)

11:35–11:55 Hakan Dogan *The implementation of the local boundary integral equation method for flow acoustics* (invited)

11:55–12:15 Rafael Piscoya *Study of the numerical stability of different representations of the three-dimensional half-space Green's function* (invited)

Acoustical Propagation in an Ice-Covered Environment

Lecture Hall **GM4** Knoller, Building BD Chair: M. Isakson, M. Ballard

10:15–10:45 Megan S. Ballard *Three-Dimensional Propagation Induced by the Rough Sea Ice Interface* (invited)

10:45–11:15 Michael D. Collins *Range-Dependent Acoustic Propagation in the Arctic* (invited)

11:15–11:45 Marcia J. Isakson *Finite Element Modeling of Acoustic Scattering from First- and Multi-year Ice Keels in the Arctic* (invited)

11:45–12:15 Matthew C. Zeh *Modeling Acoustic Propagation in a Tidewater Glacial Fjord Environment, LeConte Glacier, Alaska* (invited)

Numerical Simulation Methods for Ultrasonic Applications

Seminar Room BD **02A**, Building BD — Chair: J. Prager, F. Krome

10:15–10:35 Alexandre Imperiale *A numerical and asymptotic framework for modelling ultrasonic non-destructive testing* (invited)

10:35–10:55 Peter Huthwaite *Ultrasonic Finite Element Simulations on GPUs with Pogo* (invited)

10:55–11:15 Fabian Krome *Wave propagation in prismatic structures modeled using image-based homogenization* (invited)

11:15–11:35 Jannis Bulling *The Scaled Boundary Finite Element Method to Model Contact Acoustic Nonlinearity* (invited)

11:35–11:55 Sina Sodagar *Ultrasonic evaluation using FE-based resonance elastic spectroscopy*

11:55–12:15 Sebastian Wöckel *Effective acoustic modeling of fluid-filled elastic tubes* (invited)

Musical Instruments and Loudspeaker Modelling

Seminar Room BA **02B**, Building BA — Chair: M. Kaltenbacher

10:15–10:35 Lukas Larisch *3d Modeling and Simulation of a Harpsichord*

10:35–10:55 Yauheni Belahurau *Piezoelectrically Driven MEMS for Digital Sound Reconstruction*

10:55–11:15 Hideo Furuhashi *Numerical Analysis of Sound Wave Generated by a Parametric Speaker with Divergence Control of Directivity*

Past, Present, and Future of the ICTCA

GM1 Audimax, Building BA — Chair: C.-F. Chen

13:30–13:50 Allan D. Pierce *Ding Lee and the Early History of the ICTCA's and of the Journal of Computational Acoustics* (invited)

13:50–14:10 Michael Taroudakis *ICTCA Conferences : An unforgettable experience for organizers and participants* (invited)

14:10–14:30 Chi-Fang Chen *My Interaction with Dr. Ding Lee since 1996* (invited)

Physical Acoustics

Lecture Hall **GM2** Radinger, Building BD — Chair: F. Toth

13:30–13:50 Evgeny Glushkov *Layered Structures with Obstacles and Embedded Guides: FEM-Analytic Approach*

13:50–14:10 Natalia Glushkova *Wave Generation and Source Energy Distribution in Acoustic Fluid with an Immersed Plate*

14:10–14:30 Artem Eremin *Guided wave based damage localization in isotropic thin-walled structures with time-reversal approach and linear resonance scattering*

14:30–14:50 Omid Rahmani *Analysis the Size Effect on the Vibration of Flexible Core Micro Sandwich Beams based on High Order Nonlocal Theory*

14:50–15:10 Henryk Lasota *Causal-feedback phenomena as the essence of bi-field relations describing linear acoustics*

Acoustical Boundary Elements and Related Topics

GM3 Vortmann Lecture Hall, Building BA — Chair: R. Piscoya, H. Dogan

13:30–13:50 Holger Waubke *Time varying loads and white noise on a SDOF system with Bouc hysteresis using Gaussian Closure* (invited)

13:50–14:10 Christian H. Kasess *Bouc Hysteresis under White Noise Excitation using Non-linear Mapping and the Beta Distribution* (invited)

14:10–14:30 Paul Reiter *Efficient BEM Simulation of Absorbing Layered Systems*

Acoustical Propagation in an Ice-Covered Environment

Lecture Hall **GM4** Knoller, Building BD — Chair: M. Ballard, M. Isakson

13:30–14:00 Lee Freitag *Acoustic Communications and Propagation Under Greenland Shore-Fast Ice* (invited)

14:00–14:30 Miles Penhale *Multi-Modal and Short-Range Transmission Loss in Ice-Covered, Near-Shore Arctic Waters.* (invited)

14:30–15:00 Lora J. Van Uffelen *Glider Navigation using Low-Frequency Acoustic Sources in an Open-Water Arctic Environment with an Eye Towards Glider Navigation Under Ice* (invited)

15:00–15:30 Christopher Whitt *Spatio-temporal correlation of under-ice noise in the Chukchi Sea 2012-2013* (invited)

15:30–16:00 Yong-Min Jiang *The Impact of Oceanographic Variability on Broadband Acoustic Propagation through the Iceland-Faeroe Front* (invited)

Guided Wave Propagation

Seminar Room BD **02A**, Building BD — Chair: A. Chattopadhyay

13:30–13:50 Sina Sodagar *Resonance Elastic Spectroscopy for Functionally Graded Cylinders*

13:50–14:10 Sandrine Matta *A Uniform Formalism for Acoustic Wave Propagation in a Mixed Liquid-Solid-Porous Viscoelastic Multilayered Structure*

14:10–14:30 Pulkit Kumar *Effect of Heterogeneity and Energy Dissipation on the Shear Wave Propagation due to Frictional Boundary*

14:30–14:50 Moumita Mahanty *Effect of Corrugation and Self-reinforcement on the Propagation of Shear Wave in Cylindrical Earth Model*

14:50–15:10 Amit K. Verma *Dispersion of Rayleigh-type wave in an exponentially graded incompressible Crustal layer resting on yielding foundation*

15:45–16:15 Closing