ACOUSTICS 2013 NEW DELHI
LIST OF STRUCTURED SESSIONS

A&H AERO & HYDRO ACOUSTICS

A&H0 Aeroacoustics, GENERAL

N.S. Naidu
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Philippe Lafon
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Description: The aim of this session is to share knowledge concerning physical fundamentals and general methods in aeroacoustics: source models, analytical methods for propagation, applications of the acoustic analogy, impedance boundary conditions, ...

A&H1 Propagation of acoustical waves in the atmosphere

S. Baskar
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Régis Marchiano
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Description: The aim of this session is to share knowledge concerning propagation of acoustical waves in atmosphere. It may concern problematics around propagation of intense noise as well as long distance propagation, infrasounds, shock waves, ...

A&H2 Numerical aeroacoustics

Philippe Lafon
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Description: The aim of this session is to share knowledge concerning numerical methods in aeroacoustics : high order discretization methods, LES for aeroacoustics, absorbing boundary conditions, high performance computing, computation of industrial applications, ...

A&H3 Experimental aeroacoustics

N.S. Naidu
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Description: The aim of this session is to share knowledge concerning the development and the application of experimental techniques in aeroacoustics : intrusive and non intrusive sensors, acoustic antenna methods, flow visualization, ...

A&H4 Hydroacoustics

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Description: The aim of this session is to share knowledge concerning physical fundamentals and general methods in hydroacoustics : noise generation in hydraulic flow, underwater sound propagation, ...

A&H5 Acoustical techniques in the earth's atmospheric boundary layer studies

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Y. Kagawa
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Description: The session deals with the development and application of Sound Detection and Ranging Systems that employ extremely weak scattered sound signals in the lower atmosphere (earth's boundary layer) to measure such atmospheric parameters as wind velocities, wind and temperature turbulences, mixing height of atmospheric air pollutants etc.. In addition to air pollution studies and modelling, these systems find use in a variety of civil and defence applications.

BE BUILDING & ENVIRONMENTAL, ACOUSTICS

BE0 Building and environmental acoustics, GENERAL

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David Ecotière
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Description: This session gathers all papers in building and environmental acoustics that are not adressed in a speicifc session

BE1 Architectural acoustics and functional space design

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Catherine Lavandier
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Description: The design of indoor and outdoor spaces influences the acoustic propagation between sources and listeners. So this design has an important impact on the way people appreciate these spaces. In this session, the acoustic quality of outdoor locations or indoor situations will be evaluated through relevant indicators which could be predicted through calculations or measured. The acoustic quality can be also evaluated by the space users through adapted questionnaires.

BE2 Computer simulation and experimental techniques in Room Acoustics

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Description: In order to predict the room acoustic quality, it is important to develop models which can simulate the acoustic propagation between sources and listeners. These models should be able to take into account reflection, reverberation, diffraction or diffusion of the acoustic waves. The quality of the simulations depends of course of the quality of the input data.

BE3 Acoustics of Worship Spaces

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M. G. Prasad
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Description: Acoustical characterization of a worship space involves evaluation of subjective and objective acoustical parameters. The accompanying data of worship houses provides information on the acoustical design of chapels, churches, mosques, temples, and synagogues.

BE4 New Materials for Architectural Acoustics

S. Kandaswamy
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Description: New materials and their uses in architectural acoustics and these materials can be used for sound isolation and acoustic treatment. Sound isolation is the branch of acoustics that deals with keeping sound where you want it – in or out of the building, for instance, or keeping sounds in one room from invading another room. Sound treatment, on the other hand, is the branch of acoustics concerned with the perfecting the quality of the

sound we hear, and using the proper combinations of materials and shapes to create pleasing, musically accurate sound.

BE5 Acoustics of Long Spaces using Auralization

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Description: Acoustics of Long spaces includes acoustical work in overground and underground tunnel stations and airport concourses

BIO BIOACOUSTICS

BIO0 Bioacoustics, GENERAL

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Thierry Aubin
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Description: Bioacoustics is a cross-disciplinary science that combines biology and acoustics and refers to the study of sounds produced by animals. It includes within its scope animal communication and associated behavior, anatomy and neurophysiology of sound production and reception, propagation of animal sounds in the environment, echo-location by sonar and effects of anthropogenic noise on animals. Insects, frogs, birds and mammals are the main biological models.

BIO1 Towards a Global Monitoring of Ocean Soundscapes

Michel André
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Description: Understanding the link between natural and anthropogenic processes is essential for predicting the magnitude and impact of future changes of the ocean natural balance. Amongst this wide variety of changes, the next decades will see increasing levels of offshore industrial development and this will almost certainly lead to increased amounts of noise pollution in the oceans. Ocean observatories have opened a new window on the underwater world and given new opportunities to marine sciences to listen to marine organisms and understand their relationship with ecosystems at a global scale.

ISP INSTRUMENTATION & SIGNAL PROCESSING

ISP0 Instrumentation & Signal Processing, GENERAL

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G. Haïat
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Description: This session gathers all papers in instrumentation and signal processing that are not adressed in a speicifc session

ISP1 Signal and instrumentation in acoustics

Jean-Marc Girault
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Description: This transversal topic covers all issues related to the acoustical instrumentation ant its corresponding signal analysis or signal processing. This topic includes for instance celerity and attenuation measurements with or without real-time acquisition devices with digital signal processing. It can also concern filtering and denoising.

ISP2 Optimal command and time reversal in acoustics

Jean-Marc Girault
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Description: What is the present situation with regard to acoustic excitations for exploring complex media *This topic aims to answer some fundamental questions and to make the point on acoustic optimal command in medical imaging or industrial imaging (NDT). This topic covers all acoustic applications requiring the wave transmission that explores different kind of media. A special case of optimal command is the well-known time reversal command.

MA MUSICAL ACOUSTICS

MA0 Musical Acoustics, GENERAL

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André Almeida
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Description: All topics in musical acoustics are welcome in this session excepted those which fit better into the two specialized sessions (signal processing in musical acoustics, interaction between the player and his/her instrument).

MA1 MA1- Interaction between the player and his/her instrument

Christophe Vergez
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Description: This session will include works on measurements of parameters controlled by the player, or on the modelling of the player's role on the functioning of the coupled system player/instrument.

MA2 Signal processing in musical acoustics

Bertrand David
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Description: Signal processing in musical acoustics covers a large area, including the analysis of recorded sounds, the identification of parameters, the characterization of physical properties, etc. Both methods and applications are welcome in this session.

PA-UW-UL PHYSICAL ACOUSTICS, UNDERWATER ACOUSTICS & ULTRASONICS

PA-UW-UL0 Physical Acoustics, Underwater Acoustics & Ultrasonics,GENERAL

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Philippe Lasaygues
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Description: This session gathers all papers in Physical Acoustics, Underwater Acoustics & Ultrasonics that are not adressed in a speicifc session

PA-UW-UL1 Acoustic metamaterials

Ygaal Renou
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Description: Acoustic metamaterials exhibit properties which don't occur in natural materials, such as negative dynamic moduli or volumetric mass, high sound attenuation or absorption. The aim of this session is to cover the study of any kind of acoustic metamaterial, using either theoretical or experimental approaches. Papers are also welcome regarding potential applications in airborne or underwater acoustics, as wall as in ultrasonics. For example, these can deal with acoustic cloaking and super-resolution imaging, among other applications.

PA-UW-UL2 Ultrasonic cavitation and sonochemistry

A.B. Pandit

Christian Petrier

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Description: This session covers physical, chemical aspects, industrial development of the use of ultrasound in biomedical, environmental protection, organic and inorganic synthesis. Other applications such as Ultrasonic atomization, emulsification, microbial cell disruption and/or water disinfection for potable water will also be discussed. Wherever possible, the fundamental, applied and quantifications of the energy efficiencies of the various physical, chemical and biological transformations will be elucidated to show the ready applicability of these processes for possible industrial exploitation.

PA-UW-UL3 Acoustic emission

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Jean-Marc Girault
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Description: This topic is proposed to cover current progress and perspective in acoustic emission. It concerns challenging issues as for instance structural health monitoring of materials and medical imaging (elastography or echography) to name a few. Organised in cooperation with Instrumentation & signal Processing group.

PA-UW-UL4 PA-UW-UL4- Non destructive testing and evaluation

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Aroune Duclos
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Description: This session is dedicated to acoustic methods applied in the context of Non Destructive Testing and Evaluation. It includes theoretical works and experimental investigations on the propagation of acoustic waves through complex dispersive media or materials having flaws. The aim of this session is to explore a wide variety of techniques (ultrasound, acoustic emission, opto-acoustic …) as well as advanced signal processing applied to NDTE, which are of great interest notably for industrial applications.

PA-UW-UL5 Ultrasonics in small particles& their liquid suspensions

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Nico Declercq
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Description: This session focuses on ultrasonic characterisation of small particles of micron and nano size and their suspensions by any possible means, such as damping effects, scattering effects, wave velocity changes. Active control of suspension properties by ultrasound is also covered. Organised in cooperation with Instrumentation & signal Processing group

PA-UW-UL6 Underwater imaging systems & acoustics

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Didier Charlot
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Description: This topic is proposed to cover current progress and perspective in challenging issue in underwater acoustics imaging systems. This includes for instance, mapping (synthetic aperture imaging for high resolution and long range mapping), Deep sea imaging, 3D imaging, high resolution bathymetry and water column imaging, detection (particularly near sea surface and sub-bottom).

SP SPEECH

SP0 Speech, GENERAL

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Xavier Pelorson
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Description: This session gathers all papers on speech that are not adressed in a speicifc session

SP1 Speech signal processing

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Description: Research work or critical review of any aspect of machine processing of speech signal including acoustic-phonetics, time and frequency domain processing of speech, speech/speaker recognition, language identification text-to-speech synthesis, spoken language resources will be covered in this session.

SP2 Speech and hearing

S.R.Savithri
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Description: Research work or a critical review article or any aspect of Acoustics of Speech and hearing - acoustics of voice, fluency, articulation, prosody, speech production, speech perception and speech physiology, hearing sciences and hearing disorders- will be covered in this session.

SP SOUND PERCEPTION

SP0 Sound Perception, GENERAL

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Rozenn Nicol
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Description: This session gathers all papers in sounds perception

TEA TRANSDUCERS & ELECTRO-ACOUSTICS

TEA0 Transducers & Electro-acoustics, GENERAL

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Stéphane Durand
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Description: This session gathers all papers in transducers and electroacoustics that are not adressed in a speicifc session

TEA1 Acoustic MEMS

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Stéphane Durand
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Description: This session deals with miniature acoustic transducers such as miniaturized loudspeakers or MEMS microphones, developed for several applications (e.g. hearing aids, mobile phones, etc.), as well as piezoelectric or CMUT ultrasonic transducers for echo-tomography. Other kinds of acoustic transducers such as Acoustic wave devices (SAW, BAW, SHAPM ...) are concerned for various applications such as RF filters, bio-sensors, etc. This list is NOT exhaustive.

TEA2 Active Materials for underwater Acoustic Sensors

H. H. Kumar

Pascal Mosbah

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Description: Continuous efforts to improve underwater acoustic sensors in terms of materials and designs have lead to highly sensitive sensors. New generation of materials such as single crystal materials or hybrid composite metamaterials have allowed to build intrinsically more sensitive devices and new designs to emerge. In this cession active materials are presented together with their applications for underwater acoustic sensors.

TEA3 Underwater transducers

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Pascal Mosbah
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Description: The contribution of new and high performing transduction materials together with advanced modelling procedures has allowed the emergence of novel transducer designs. In this cession new designs and analytical and numerical modelling techniques for transducers and arrays are presented.

TEA4 Passive Materials for underwater Acoustic Sensors

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VN VIBRO-ACOUSTICS & NOISE

VN0 Vibro-acoustics & Noise, GENERAL

P.V.S. Ganesh Kumar
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Description: This session gathers all papers in vibro-acoustics and noise that are not adressed in a speicifc session

VN1 Duct acoustics and mufflers

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Goran Pavic
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Description: This session will cover sound propagation within duct systems and related devices such as mufflers. Special attention will be paid to noise of exhaust systems and noise of hydraulic installations which nowadays represent one of the most important causes of noise pollution in urban and working environment. The topics include: physical phenomena (pressure pulsations, turbulence, cavitation), modelling (exhaust lines, mufflers, ventilation ducts, piping systems), measurement techniques (transducers, transducer arrays, anemometry) and software tools (analytical, FEM, empirical, hybrid).

VN2 Vibroacoustics in ships

ChristianAudoly
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Description: Reduction of noise and vibrations is an on-going challenge for both civilian and naval vessels, addressing design, construction, measurement or noise control measures. The issues are mainly airborne noise

and vibration on board for passenger safety and comfort, underwater radiated noise and integration of acoustic systems, such as sonars, on the ship. The topic of the session covers a wide variety of noise source and phenomena: noise and vibration from internal machinery and equipment, transmitted to the hull, hydrodynamic flow noise, and propeller noise, including cavitation and interactions with the hull.

VN3 Holography and inverse problems

Charles Pézerat
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Description: Acoustic or vibration source identification from field measurement, acoustic back propagation, characterisation by inverse problems, detection of defaults in vibroacoutic domain.

VN4 Vibroacoustics of structured materials and structures

Morvan Ouisse
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Description: Analysis, characterization and design of structured materials and structures, namely which have been structurally designed to exhibit specific vibroacoustic functions: periodic structures, multilayers, materials with inclusions, acoustic black hole.

VN5 Smart and active systems for vibroacoustics

Manuel Collet
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Description: Distributed control, Integrated adaptive systems, Adaptive Metamaterials, Material-integrated Sensing and Intelligence, Material programming for vibroacoustic applications, Integrated Mechatronic systems for noise and vibration control.

VN6 Wave issues in elastodynamics

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Mohamed Ichchou
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Description: This session is devoted to waves based issues and strategies for linear and non linear elastodynamics. The topic covers analytical, numerical and experimental investigation around the question. Presentations dealing with applications of based waves strategies in terms of structural acoustics, non destructive testing and structural health monitoring are also welcome.

VN7 Condition Monitoring of machinery

Ganesh Kumar
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Description: Condition Monitoring is basically a maintenance philosophy applicable mostly for machines and structures. It is currently being practiced world wide in various industries mainly as a predictive maintenance tool for fault diagnosis. It basically involves periodic monitoring of various acoustic parameters such as vibration, sound, acoustic emission, ultrasonics and also various non-acoustic parameters. Monitored parameter values and trends over a period of time can provide advance warning of impending failures by identifying the developing fault at early stage