

Acoustics 2018

23-24 APRIL 2018, CITY HALL, CARDIFF



ROOM 1

09:45 Welcome by Prof Barry Gibbs, President-Elect, Institute of Acoustics,

09:50 Introduction to the benefits of the UK Acoustic Network
Prof Kirill Horoshenkov, University of Sheffield

ENVIRONMENTAL NOISE

Chair: David Waddington

10:00 The well-being of future generations (Wales) Act 2015
Martin McVay, Joanne Smith, Welsh Government

10:30 Updating the synergies and conflicts between air quality and noise action planning
Nigel Jones, Matthew Burdett, Extrium; Simon Shilton, Acustica; Richard Maggs, Bureau, Veritas

11:00 The future of strategic noise mapping-intelligent design to support intelligent policy
Nigel Jones, Matthew Burdett, Extrium

11:30 Refreshments

12:00 Rayleigh Medal Lecture

13:00 Lunch

13:45 Environmental Noise Group AGM

Chair: Steve Mitchell

14:00 A step-by-step guide to evaluating the prominence of impulsive sounds from an audio recording
Naomi Tansey, Arup; Matt Torjussen, noise.co.uk

14:30 Using planning conditions to improve indoor environmental quality (IEQ) of new residential developments
Nick Conlan, Jack Harvie-Clark, Apex Acoustics

15:00 BS4142 and context and case studies
Jon Tofts, Environment Agency

15:30 Refreshments

Chair: David Waddington

16:00 Perceptual testing of BS4142:2014 character corrections
Rahiel A Ghani, David Waddington, University of Salford

16:30 Evaluation of the subjective method in BS4142:2014 for noise characteristics
Shanti Wisniewska, Jacobs

17:00 EANC Acoustics, Ventilation and Overheating Guide
Anthony Chilton, Max Fordham; Jack Harvie-Clarke, Apex Acoustics, James Healey, WSP

17:30 Close

18:00 IOA Young Members Group invite all Young Members and Students to attend their Reception

19:00 Drinks Reception

19:30 Conference Dinner

ROOM 2

NOISE AND VIBRATION ENGINEERING

Chair: Nathan Thomas

10:00 Life cycle evaluations of railway turnout crossings impact attenuation methods using soft fasteners and composite sleepers
Sakdirat Kaewunruen, Matthew Sechet, University of Birmingham

10:30 An investigation into noise reductions following a rail grinding campaign on Dublin's light rail system
Stephen Byrne, Transport Infrastructure Ireland

11:00 Assessing the vibro-acoustic radiation characteristics of a compact consumer appliance
Daniel Taylor, Dyson

11:30 Refreshments

12:00 Rayleigh Medal Lecture (in Room 1)

13:00 Lunch

13:45 Noise and Vibration Engineering Group AGM

Chair: Malcolm Smith

14:00 Substructuring approach and blocked forces method: application for structure-borne vibration prediction in heavy weight assemblies
Diego Miguez, O Farrel, I M Bannister, Ryan Arbabi, Farrat Isolevel; Andy T Moorhouse, Andrew S Elliott, University of Salford

14:30 Vibration isolation performance for industrial metal forming presses
Chad N Himmel, JEAcoustics, USA

15:00 Challenges in monitoring construction noise in live Royal Opera House during open up project
Peter Henson, Tomasz Galikowski, Bickerdike Allen Partners

15:30 Refreshments

Chair: Nathan Thomas

16:00 Comparison of vibration prediction method results and vibration measurements from underground mining
Graham Parry, Angela Lamacraft, Accon UK

16:30 Industrial applications of acoustic metamaterials
Nicolas Etaix, Dyson

17:00 Gymnasium and fitness flooring research
James Bligh, Pliteq

17:30 Close

ROOM 3

PHYSICAL ACOUSTICS

Chair: Mike Swanwick

10:00 Acoustic metamaterials for low frequency industrial applications

Daniel Elford, Luke Chalmers, Richard D Wilson, Karol Bugaj, Sonobex Limited

10:30 Influence of flare variation on the low frequency sound absorption of mufflers based on the "acoustic black hole effect"

Neha Sharma, Olga Umnova, Andy Moorhouse, University of Salford

11:00 Interaction of high amplitude waves with acoustic metamaterials

Daniel Brooks, Olga Umnova, Andrew S Elliott, University of Salford; Philippe Leclaire, Thomas Dupont, University of Burgundy, France

11:30 Refreshments

12:00 Rayleigh Medal Lecture (in Room 1)

13:00 Lunch

13:45 Physical Acoustics Group AGM

Chair: Mike Swanwick

14:00 Development of an optimal array of sensors for the reconstruction of a rigid rough surface based on scattered ultrasound

Giulio Dolcetti, Anton Krynkin, University of Sheffield

14:30 Approximation to wave propagation through periodic array in poro-elastic medium

Anton Krynkin, Jean-Philippe Groby, University of Sheffield

15:00 Acoustic emission spectra associated with the formation of brittle cracks

Victor Krylov, Loughborough University

15:30 Refreshments

Chair: Mike Swanwick

16:00 Tailored acoustic filtering and absorption using compound rigid gratings

Tim Starkey, J G Beadle, G P Ward, J D Smith, J R Samble, A P Hibbins, Exeter University

16:30 Influence of activation processes on the activated carbon felts microstructure and impact on the acoustic performances

Hugo Karpinski, Olga Umnova, J A Hargraves, R Venegas Castillo, M A Nahil, C S Lehmann Fernandez, University of Salford

17:00 What is the actual influence of a nano-fibrous membrane on the acoustical property of porous substrate?

Kirill V Horoshenkov, Alistair Hurrell, University of Sheffield; Michael Pelegrinis, John Cotton Group Ltd

17:30 Close

ROOM I

BUILDING ACOUSTICS

Chair: James Healey

09:00 Audio demonstration of how our ears are more sensitive to changes in low frequency noise, and of how lightweight constructions can perform well at low frequencies

Roger Kelly, CDM-UK

09:30 Engineering of fitness centre floors on structural slabs with a fundamental frequency <10Hz

Matthew Harrison, Buro Happold Engineering

10:00 Overview of the sound insulation design of the Royal Birmingham Conservatoire

Michael Whitcroft, Hoare Lea Acoustics

10:30 The impact of classroom noise on reading comprehension of secondary school pupils

Bridget Shield, Julie Dockrell, Daniel Connolly, Trevor Cox, Robert Conetta, Charlie Mydlarz, London Southbank University

11:00 Refreshments

Chair: Roger Kelly

11:30 Acoustic quality of open office spaces

Andrew Parkin, Cundall

12:00 Towards the acoustical characterisation of an intensive care unit

Deborah Dawson, St Georges University Hospital; Richard Barham, Acoustic Sensor Networks; B Philips, St Georges University Hospital

12:30 Confidence in room acoustic design: an empirical approach

Jack Harvie-Clark, Apex Acoustics

13:00 Setting the tone for the visit: the use of soundscapes in museum foyers for increasing visitor engagement

Angus Deuchars, Arup

13:30 Building Acoustics Group AGM

13:45 Lunch

WIND FARM NOISE

Chair: Gavin Irvine

14:30 Wind turbine noise amplitude modulation penalty considerations

Malcolm Hayes, Haynes McKenzie Partnership; Gavin Irvine, ion acoustics; Matthew Cand, Hoare Lea Acoustics; Dick Bowdler, Consultant

15:00 Site experience with wind turbine noise AM analysis

Matthew Cand, Hoare Lea, Malcolm Hayes, Hayes Mckenzie Partnership, Gavin Irvine, Tom Levett, ion acoustics

15:30 A short history of the dangers of infrasound

Dick Bowdler, Consultant

16:00 Revision of the German recommendation (LAI1-Notes) for the application of ISO9613-2 in sound propagation calculations of wind farm noise following recent measurement of wind turbines at varying distances

Sylvia Broneske, Innogy Renewables UK; Sabine Schultz, UL DEWI, Germany; Krispian Lower, Innogy Renewables UK

16:30 Close and Refreshments

ROOM 2

INSTRUMENTATION CORNER LIVE

Chair: James Tingay

09:00 Standards

James Tingay, Cirrus Research

09:30 Measurements Range/Dynamic Range

Simon Bull, Castle Group

10:00 Audio Recording and Analysis

Mark Dowie, Bruel Et Kjaer UK

10:30 Ln's (broadband and frequency bands)

Simon Bull, Castle Group

11:00 Refreshments

Chair: Simon Bull

11:30 Calibration

Ian Campbell, Campbell Associates

12:00 Windshields

John Shelton, AcSoft

12:30 App-based measurements

James Tingay, Cirrus Research

13:00 Geophone/Accelerometers

John Shelton, AcSoft

13:45 Lunch

Chair: John Shelton

14:30 A new modular design concept for acoustic arrays

John Campbell, Campbell Associates

15:00 Thermal acoustic testing of HVAC products

Rebecca Hogg, BSRIA

15:30 In-situ sound absorption coefficient measurements of hard walls using exponential sine sweep signal

Aglais Foteinou, Arun Arjunan, University of Wolverhampton

16:00 VDV Relevance to Train Vibration

Jorge DeAvillez, James Healey, WSP

16:30 Close and Refreshments

ROOM 3

MUSICAL ACOUSTICS

Chair: Michael Wright

09:00 Vibro-electric transfer path analysis of a solid body electric guitar

Andrew Elliott, University of Salford; Jonathan Magill, Marshall Amplification; Paul Kendrick, University of Salford

09:30 Exploring the bow-string interaction using a high speed camera

Lara Diaz Garcia, Michael Newton, Murray Campbell, University of Edinburgh

10:00 The effects of centrifugal blowers and reservoir resonance on organ pipe flutter

Alan Taylor, University of Salford

10:30 Perceptual investigations of acoustic and digitally emulated violins based on controlled listening studies

Thomas Lloyd, Patrick Gaydecki, J Ginsborg, C Yates and H Johannsson, University of Manchester

11:00 Refreshments

SPEECH AND HEARING

Chair: Gordon Hunter

11:30 The impact of hearing loss on physical health and cognition

Bridget Shield, London Southbank University

12:00 Singing and Loudness: A pilot study at the Royal Opera House

Stephen Dance, John Bernays, Samantha Liu, London South Bank University

12:30 Workplace noise, hearing protection and HSE's approach on risk reduction

Chris Steel, Tao Wu, Health & Safety Executive

13:00 Enhancing automatic speech recognition for mathematical applications via incremental parsing

Gordon Hunter, Marina Isaac, Eckhard Pflugel, James Denholm-Price, Kingston University

13:30 Lunch

16:30 Close and Refreshments

POSTERS

Measurements of hockey ball hitting backboards covered by different materials

Weigang Wei, Adam Cooks, Apex Acoustics

Assessment of groundborne vibration from underground trains on a proposed residential development

Jerry Knight Rees, Luis Gomez-Augustina, London Southbank University

Lateral vibrations of curved railway tracks to transient excitations

Sakdirat Kaewunruen, Chayut Ngamkhanong, Xin Liu, University of Birmingham

Progress in Platforms for Real-Time Emulation of the Acoustic Violin

Patrick Gaydecki, Sheheera Ismail, Thomas Lloyd; University of Manchester

Real-time prediction of structure borne noise using in-situ transfer path analysis

Lucy Barton, Andrew Elliott, Andy Moorhouse, University of Salford; John Smith, DSTL