

ACOUSTICS 2023

16-17 October 2023

The Guildhall, Winchester, UK

MONDAY 16 OCTOBER 2023

0830 Registration and Refreshments

ROOM 1 - King Alfred Conference Chamber

0930 Welcome, Alistair Somerville, President,
Institute of Acoustics

Environmental Sound Group Chair: Steve Mitchell

1000 What makes a noise limit acceptable?

Stephen Turner, ST Acoustics

1030 Environment Agency noise regulation

Jon Tofts, Environment Agency

1100 Method implementation document for BS4142

Julija Smyrnova, Gillian Brown, Tony Clayton, Jon Tofts,
Environment Agency

1130 Refreshments

1200 Rayleigh Medal 2023
Environmental Noise, Health and Cognition

Stephen Stansfeld, Queen Mary University London

1300 Lunch

1345 Environmental Sound Group AGM

1400 Predicting BS4142 character corrections at the
planning stage

Matt Torjussen, ANV Measurement Systems; Patrick Hoyle,
Mark Evans, WSP; Jo Webb, Antonio J Torija Martinez, David
Waddington, University of Salford; Jon Tofts, Environment
Agency; Hilary Notley, Defra; Bernard Berry, Consultant;
Simon Shilton, Acustica

1430 Lessons learned monitoring noise during construction
of the HS2 Colne Valley Viaduct and Chiltern tunnels

Andrew Bird, Graeme Hales, Align

1500 Investigating the suitability of guidance on large
surface outdoor reflection correction factors

Daniel Hagen, Luis Gomez-Agustina, London South Bank
University

1530 Refreshments

1600 Habitats: Developments in managing the ecological
impacts of noise on wildlife habitats for sustainable
development

David C Waddington, Michael D Wood, William J Davies,
Robert J Young, Margret Engel, University of Salford

1630 Acoustic benefits of green infrastructure in urban
areas - a rapid evidence review

Grant Waters, Tranquil City; Chris Wood, Doushiant Monhith,
Jack Naumann, Anderson Acoustics; Ben Piper, Acoustic
Sensor Networks; Andy Murdock, Maploom; Hilary Notley,
Luca Marazzi, Defra

1700 Integrating acoustics engineering and soundscape
design for an urban park: a case study

Jack Harvie-Clark, Rebecca Romeo Pitone, Luis Pereira,
Apex Acoustics; Andrew Mitchel, Researcher

1730 Close

1800 Institute of Acoustics Annual General Meeting

1900 Reception and Conference Dinner

ROOM 2 – King Charles Hall

Measurement & Instrumentation Group: Chair, John Shelton

1000 A comparison of existing methods of predicting the source and effects of beer garden noise to measured data

Feargus Flanagan, Chris Chittock, Dragonfly Consulting;
Benjamin West, Birmingham City University

1030 Obtaining input terms for railway noise mapping

Daniel Lurcock, M Toward, D Thompson, University of Southampton

1100 The acoustic camera has come of age!

Richard O'Sullivan, Soundcam, UK

1130 Refreshments

**1200 Rayleigh Medal 2023
(ROOM 1 - King Alfred Conference Chamber)
Environmental Noise, Health and Cognition**

Stephen Stansfeld, Queen Mary University London

1300 Lunch

1345 Measurement & Instrumentation Group AGM

1400 Instrumentation Corner – Live

1530 Refreshments

Speech and Hearing

1600 Applying approaches from automated processing of human speech to monitoring and predicting important events in Honeybee hives using acoustic signals

Stenford Ruvigam Gordon Hunter, Jean-Christophe Nebel,
Rosa Busquets, Olga Duran, Kingston University

1630 Impact of maternity wards ambient noise on staff

Patrick Spiers, Luis Gomez-Agustina, London South Bank University

**1700 What do we know about noise impacts on birds?
A systematic review of the effect of acoustic methodology**

Margaret Engel, David Waddington, William J Davies, Michael D Wood, Robert Young, University of Salford; Adam Scott, Hoare Lea Consulting Engineers

1730 Close

1800 Institute of Acoustics Annual General Meeting

1900 Reception and Conference Dinner

ROOM 3 – Eversley Room

Physical Acoustics Group Chair: Keith Attenborough

1000 Babinet's principle in acoustics: a time domain reappraisal

Chris Feuillade, Pontificia Universidad Católica de Chile

1030 Spatial Fourier transform method incorporated with Johnson-Allard model to determine absorption coefficient of materials

Haydar Aygun, London South Bank University

1100 Review of impact of vibration techniques on flood defense structures (FDS)

Octavio Lora Aranda, Matthew White, Thomas Goose, RSK Acoustics

1130 Refreshments

**1200 Rayleigh Medal 2023
(ROOM 1 - King Alfred Conference Chamber)
Environmental Noise, Health and Cognition**

Stephen Stansfeld, Queen Mary University London

1300 Lunch

1400 Acoustic surface waves above porous and periodic surfaces

Shahram Taherzadeh, Keith Attenborough, Open University

1430 On the significance of parameter uncertainties for prediction of leak noise wave in buried plastic water pipes using vibro-acoustic methods

Oscar Scussel, Jennifer M Muggleton, Michal K Kalkowski, Phillip F Joseph, Paul White, University of Southampton; Mahmoud Karimi, Paul Williams, University of Technology, Australia

1500 Sound propagation over periodic roughness

Keith Attenborough, Imran Bashir, Steve Mellish, Alex Stronach, Shahram Taherzadeh, Open University

1530 Refreshments

1600 Flight sound of an insect wing: application of metamaterial concepts to bioinspired flapping wings

Mostafa Ranjbar, Cranfield University; M. Cihat Yilmaz, Ankara Yidirim Beyazit University, Turkey

1630 Resolving uncertainty in mechanical vibration of thin structures: a novel Bayesian approach

Jah Shamas, University of Sheffield

1700 Modelling the Vibration of Bone using Finite Element Analysis

Jamie Scanlan, Olga Umnova, Francis Li, University of Salford

1730 Close

1800 Institute of Acoustics Annual General Meeting

1900 Reception and Conference Dinner

ROOM 4 - Wykeham Room

Musical Acoustics Group: Chair, Stephen Dance

1000 Application of the missing fundamental as a method of low frequency noise control from outdoor events

Peter J Wheeler, Acoustic Consultants, Open University;
David Sharp, Shahram Taherzadeh, Open University

1030 Is there a relationship between pitch perception and individual preference of concert hall reverberation time?

Thea E N Strother, William J Davies, University of Salford

1100 Converting video to sound: texture-based algorithms for sonification

Erdem Atbas, Patrick Gaydecki, University of Manchester

1130 Refreshments

1200 Rayleigh Medal 2023 (ROOM 1 - King Alfred Conference Chamber) Environmental Noise, Health and Cognition

Stephen Stansfeld, Queen Mary University London

1300 Lunch

1345 Musical Acoustics Group AGM

1400 Consideration of the link between musical frequency and musical therapy

Andrew Morgan, Medical/Acoustic Therapist

1430 The effect of vibrational energy transmitted to sections of string outside the main sounding length in plucked string instruments

Jonathan Kemp, University of St Andrews

1500 Impulse response synthetic and real-time convolution for acoustic instrument emulation

Patrick Gaydecki, Erdem Atbas, University of Manchester

1530 Refreshments

1600 Experimentally tuned model sound synthesis of a thin plate through a least-squares optimisation

Sebastian Duran, Michael Ducceschi, Henna Tahvanainen, University of Bologna, Italy; Ludovico Ausiello, University of Portsmouth

1630 Variable bracing patterns to tune soundboard and membrane speakers

Ludovico Ausiello, University of Portsmouth

1700 Preliminary investigations into machine learning and signal processing methodologies for blind recovery and restoration of old audio recordings

Jiayi You, Claire Mitchell, Keming Tan, Erdem Atbas, Patrick Gaydecki, University of Manchester

1730 Close

1800 Institute of Acoustics Annual General Meeting

1900 Reception and Conference Dinner

TUESDAY 17 OCTOBER 2023

0915 Registration and refreshments

ROOM 1 - King Alfred Conference Chamber

Building Acoustics Group: Chair Adrian Popplewell

1000 The future of building acoustics in a zero carbon world

Neil Bodsworth, Colin O'Connor, Cundall

1030 Developing an acoustic materials database for sustainable building design

Neha Sharma, Barry Jobling, Hoare Lea

1100 Assessing noise and overheating in dwellings: aligning acoustic and thermal models for partially open windows

Jack Harvie-Clark, Nick Conlan, Nick Dobinson, Apex Acoustics; James Healey, Peninsular Acoustics

1130 Refreshments

1200 Rayleigh Medal 2022 From sound propagation to sound perception

Jian Kang, University College London

1300 Lunch

1400 Acoustic classification scheme for configurable pods

Andrew Parkin, Cundall; Ben Southgate, Sandy Brown

1430 The use of adaptive sound masking systems in open plan offices: how they work, and the relative improvements for speech privacy and acoustic comfort

Roderick Mackenzie, André L'Espérance, Alex Boudreau, Vincent Le Man, François Gariépy, Soft dB, Canada

1500 Designing for acoustic satisfaction in open plan offices

Jack Harvie-Clark, Apex Acoustics

1530 Refreshments

1600 Decolonising museum soundscapes: a practice-based case study

Rebecca Romeo Pitone, Jack Harvie-Clark, Apex Acoustics

1630 Inclusive acoustic design for mainstream schools: an evidence based approach

Emma Greenland, Anderson Acoustics; Adrian James, Adrian James Acoustics; Jack Harvie-Clark, Apex Acoustics

1700 Exploring the synergistic power of CHATGPT and Grasshopper for room acoustic modelling and optimisation

Shenzhi Su, Cundall

1730 Close

ROOM 2 – King Charles Hall

Noise and Vibration Engineering: Chair, Matt Torjussen

1000 Modelling the performance of base-isolated buildings: how simple can we get?

James P Talbot, University of Cambridge

1030 Managing low frequency noise during the operation of precast concrete factories required for the construction of the HS2 Colne Valley Viaduct and Chiltern tunnels

Andrew Bird, Graeme Hales, Align

1100 Investigating the extent to which ground composition impacts on the contribution from piles to the ground-to-foundation transfer when assessing ground-borne noise and vibration from underground railways

Zijiang Yang, Jorge De Avillez, WSP

1130 Refreshments

1200 Rayleigh Medal 2022 (ROOM 1 – King Alfred Conference Chamber) From sound propagation to sound perception

Jian Kang, University College London

1300 Lunch

1400 A hybrid Sea-experiment model to predict the structure-borne noise and vibration for resiliently coupled system with virtual point transformation

Boyang Gao, Florian Cabaret, Farrat Isolevel; Andrew Elliot, Joshua Meggitt, University of Salford

1430 Development and testing of noise and vibration isolation solutions for Cross Laminated Timber (CLT) constructions

Reinhilde Lanoye, Marina Rodrigues, Sarah Huskie, CDM Stravitec

1500 Lift noise and vibration

Adam Fox, Mason UK

1530 Refreshments

1600 Noise from ASHPs: what we know and what we don't

Jack Harvie-Clark, James Hill, Apex Acoustics; Peter Rogers, Sustainable Acoustics; Matt Torjussen, ANV Measurement Systems

1630 Managing effects from ground-borne noise and vibration during construction of the HS2 Chiltern tunnels

Rick Methold, Andrew Bird, Align

1700 Solutions to control low frequency in small to medium sizes rooms

Roger Roschnik, PSI Audio

1730 Close

ROOM 3 – Eversley Room

Sound, Noise and Health: Chair, Benjamin Fenech

1000 The effects of night-time aviation noise exposure on sleep disturbance and annoyance

Charlotte Clark, Joan Morris, Elena Marcus, St George's, University of London; Mari-Toomse-Smith, Franziska Marcheselli, Dhriti Mandalia, Rebecca Steinbach, National Centre for Social Research; Mathias Basner, University of Pennsylvania, USA; Jamie Trow, George Gibbs, Noise Consultants

1030 Estimates of the burden of disease due to transportation noise in England

Sierra Clark, Owen Williams, Benjamin Fenech, UK Health Security Agency; Calvin Jephcote, John Gulliver, University of Leicester

1100 Monitoring noise complaints – the Public health Outcomes Framework indicator B14a

Georgia Rodgers, Benjamin Fenech, UK Health Security Agency

1130 Refreshments

1200 Rayleigh Medal 2022 (ROOM 1 – King Alfred Conference Chamber) From sound propagation to sound perception

Jian Kang, University College London

1300 Lunch

1400 Aural diversity and acoustic assessment

Jamie Scanlon, William J Davies, University of Salford

1430 Developing a noise and soundscape conceptual framework for fair and equitable distribution of aircraft

Lisa Lavia, Heriot Watt University; Antonio J Torija Martinez, University of Salford; Charlotte Clark, St Georges University

1500 Solar Farms – the sustainable energy solution but at what cost to the soundscape?

Graham A Parry, Rebecca Haw, Daniel Shortt, ACCON

1530 Refreshments

1600 Evidence review of effects of soundproofing on residents' mental wellbeing and alternative designs

Charlotte Clark, St George's, University of London; Jian Kang, University College London; Lisa Lavia, Noise Abatement Society; Peter Rogers, Angela Lamacraft, Sustainable Acoustics; Nigel Jones, Extrium, Hilary Notley, Cerise Reynolds, Defra; Martin McVay, Welsh Government

1630 An in-situ investigation of office soundscape perceptual evaluation methodologies

Benjamin West, Islah Ali-MacLachlan, Birmingham City University; Angus Deuchars, Arup

1700 Close

ROOM 4 - Wykeham Room

Early Careers Group: Chair, Josie Nixon

0930 The IOA schools competition on soundscapes: student learning and stem engagement

Ashton Billett, Emmeline Turner, Shay Wheeler, Peter Clarke, St Oscar Romero Catholic School

1000 Noise and soundscape policy developments in Wales

Martin McVay, Welsh Government

1030 Construction site environment pollution management-initiatives and innovation in South East Asia

Ekawat Sakorn, Jean-Florent Cros, Julien Preuilh, Acoem

1100 The interface between planning and pollution control regime. Understanding the Environment Agency's position on their interaction within acoustics

Stephen Jay, Paul Doyle, Environment Agency

1130 Refreshments

1200 Rayleigh Medal 2022 (ROOM 1 - King Alfred Conference Chamber) From sound propagation to sound perception

Jian Kang, University College London

1300 Lunch

1400 UK best available techniques (BAT)

Julija Smyrnova, Paul Stevens, Tony Clayton, Environment Agency

1430 Environmental Sustainability Strategy

Ian Holmes, National Highways

1500 British Standard BS8233:2014 – review

Simon Kahn, Mott MacDonald; David Hillier, Arup

1530 Refreshments

1600 Refurbishment of an anechoic chamber

Daniel Lurcock, John Fithyan, Glen Barber, University of Southampton

1630 Panel Discussion

1730 Close