



50th Anniversary Conference and Exhibition

ACOUSTICS 2024

12 & 13 September 2024

Manchester Metropolitan University

Programme

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THURSDAY 12 SEPTEMBER 2024

ROOM 1

08:30 Registration and refreshments

09:00 Welcome, Alistair Somerville, President, Institute of Acoustics

ROOM 1

Environmental Sound

Chair: **Steve Mitchell**

09:30 Application of the Sottek Hearing Model for environmental noise assessment
Roland Sottek, Chalmers University of Technology, Germany

10:00 The Quiet Project - A national environmental noise survey undertaken during lockdown
Stephen Dance, London South Bank University; Lynsey McIntyre, KSG Acoustics;
R. Vazquez Amos, London South Bank University

10:30 Producing new and updated guidance for the noise assessment of renewable energy sources
Richard Perkins, Mott MacDonald; Matthew Cand, Hoare Lea; J Singleton, TNEI

11:00 Refreshments

11:30 Rayleigh Medal 2024

Sound transmission predictions through walls using SEA and measurements using sound intensity
Malcolm Crocker, Auburn University, USA

12:30 Environmental Sound AGM

12:30 Lunch and Posters

13:30 The future of soundscape assessment – What can we learn from qualitative disciplines?
Taylor Cooper, Mott MacDonald

14:00 Evaluating human response to air source heat pump noise for sustainable domestic heating
Volkan Acun, Lucy Barton, Trevor Cox, Simone Graetzer, Jonathan Hargreaves, Max Radivan,
Antonio J Torija Martinez, David Waddington Daniel Wong-Mcsweeney, University of Salford

14:30 Updating BS8233: Aligning residential acoustic design guidance with the health evidence
Benjamin Fenech, Noise and Public Health, Radiation Chemical and Environmental Hazards,
Science Group, UK Health Security Agency (UKHSA), Jack Harvie-Clark, Apex Acoustics

15:00 Refreshments

15:30 Research project for National Highways into a new calculation standard for transport noise
Matthew Muirhead, Aecom

16:00 Low frequency sound at outdoor concerts – A necessary noise
Dani Fiumicelli, Vincent Parker, Ed Lawrence, Vanguardia; Jonty Stewart, RPS

16:30 Provoking proportionate considerations of anthropogenic noise on terrestrial animals
Adam Scott, Andrew Bullmore, Hoare Lea

17:00 Close

17:00 UKAN+ Drinks Reception

17:30 Institute of Acoustics AGM

Conference Dinner: The Monastery Manchester

18:30 Coaches depart from University

19:00 Drinks Reception (*Sponsored by Farrat*)

20:00 Dinner

ROOM 2

Noise and Vibration Engineering

Chair: Joshua Meggitt

- 09:30 Fibre-optic sensing for analysis of turbulent pressure fluctuations in partially filled pipes
Jah Shamas, Anton Krynkina, Gavin Sailor, Simon Tait, University of Sheffield, Yan Liu, Southern University of Science and Technology, China, Kirill Horoshenkov, University of Sheffield
- 10:00 Comparison of differing amplitude modulation methodologies using test cases and measurements
Krispian Lowe, RWE
- 10:30 Harnessing generative AI: leveraging OpenAI's APIs to enhance acoustic field note-taking
Shenzhi Su, iFieldnotes

11:00 Refreshments

11:30 Rayleigh Medal 2024 – ROOM 1

Sound transmission predictions through walls using SEA and measurements using sound intensity
Malcolm Crocker, Auburn University, USA

12:30 Noise and Vibration Engineering AGM

12:30 Lunch and Posters

Chair: Nathan Thomas

- 13:30 Discussing the potential for Soundscape assessment complementing noise impact assessments for Environmental Permitting in Wales
Matthew Bevington, Natural Resources Wales
- 14:00 Soundscape Mapping for Large-scale Urban Green Spaces: A Case Study of the Chengdu Outer Ring Ecological Zone
Yiying Hao, Bureau Veritas
- 14:30 Bang, Bang, Beep - non-operational airborne sound from offshore wind farms
Ashley Leiper, SSE Renewables

15:00 Refreshments

- 15:30 Acoustic implications of low carbon housing
Rebecca Hogg, BSRIA
- 16:00 Successful vibration isolation of a multi-storey building with elastic bearings partly on pile and slab foundation
Dominik Dobler, Andreas Wenz, Ulrich Gerhaher, Getzner
- 16:30 Sound transmission loss in duct with multiple resonators arranged in different patterns
Takumasa Tsuruha, Takenaka R&D Institute, Japan
- 17:00 Close

THURSDAY 12 SEPTEMBER 2024

ROOM 3

Speech & Hearing

Chair: Christian Sumner

09:30 Auditory perception of the subtle and transient attributes of natural soundscapes by human listeners
Christian Lorenzi, PSL University, France.

10:00 Personalising the perception of spatial audio over headphones
Katarina C Poole, Rapolas Daugintis, Julie Meyer, Aidan Hogg, Nils Marggraf-Turley and Lorenzo Picinali, Dyson Research Centre, Imperial College London.

10:30 Perception of loudness for brief sounds in background noise: Role of duration and signal-to-noise ratio
Josef Schlittenlacher, University College London; Zara Belsham, Brian C. J. Moore, University of Cambridge.

11:00 Refreshments

11:30 **Rayleigh Medal 2024 – ROOM 1**
Sound transmission predictions through walls using SEA and measurements using sound intensity
Malcolm Crocker, Auburn University USA

12:30 Speech & Hearing AGM

12:30 Lunch and Posters

Speech & Hearing

Chair: Katie Gray

13:30 One size does not fit all: implications of auditory perception in physical acoustics
Michael A Stone, Rebecca E Millman, Manchester Centre for Audiology and Deafness, University of Manchester

14:00 A sonic journey through acute brain injury hospital settings. Challenges and discoveries
Fiona Marshall, Laura Edwards, Livvy Smith, David Baguley, Peter Rutherford. University of Nottingham

14:30 The soundscape approach in engineering practice: Design metrics and a software analysis tool
Andrew Mitchell, Bartlett School of Sustainable Construction, University College London; Francesco Aletta, Tin Oberman, Jian Kang, Institute for Environmental Design and Engineering, University College London

15:00 Refreshments

Chair: Gordon Hunter

15:30 Can we account for the benefit seeing a talker in real-world communication?
Chris Sumner, Samuel Smith, Harvard University, USA, Jens Roeser, Thom Baguley, Paula Stacey, Nottingham Trent University

16:00 Acoustic analysis of the begging behaviour of Manx Shearwater (*Puffinus puffinus*) Chicks
Gordon Hunter, Kingston University; Barbara Francik, Joe Morford, Tim Guilford, University of Oxford

16:30 Evaluation of fundamental frequency stability in speech and singing using laryngeal bioimpedance measurements
Eugenio Donati, Julia Tomaszewska, University of West London; Christos Chousidis, University of Surrey

17:00 Close

THURSDAY 12 SEPTEMBER 2024

ROOM 4

Early Careers & Senior Members

Chair: Josie Nixon

- 09:30 Mitigating blast noise: evaluating water curtains and expanded metals
Zachary Simcox, University of Salford; George Mackenzie, Sandy Brown Associates; Gethin Manuel, DNV Spadeadam; David Waddington, University of Salford
- 10:00 Uncertainty within outdoor sound propagation calculations submitted to the Environment Agency for permit applications
Rory Peliza, Richard Jovic, Environment Agency
- 10:30 Next steps for noise and soundscape in Wales – What does implementation of The Environment (Air Quality and Soundscapes) (Wales) Act 2024 mean for the future of soundscapes in Wales?
Jenna Turnbull, Philip Bowen, Welsh Government

11:00 Refreshments

11:30 Rayleigh Medal 2024 – ROOM 1

Sound transmission predictions through walls using SEA and measurements using sound intensity
Malcolm Crocker, Auburn University, USA

12:30 Lunch and Posters

Early Careers & Senior Members

Chair: Zachary Simcox

- 13:30 ~~Initial results of the Health & Safety Executive's workplace noise enforcement programme 2023-24~~
~~Chris Steel, Lyndsay McIntyre, C Bradshaw, Health and Safety Executive – withdrawn~~
- 14:00 The Environment Agency & noise impact assessments for environmental permit applications. Where are we now?
Paul Doyle, Matt Hill, Environment Agency

14:30 Refreshments

15:00 ECG and SMG Panel Discussion: 'The Future of Acoustics'

Join us for a panel discussion with Zachary Simcox (ECG Rep), Graham Parry (SMG rep) and Matthew Robinson (EDI Chair), as we consider how the acoustic industry has developed in the last 50 years and discuss the future of acoustics specifically considering the following:

- 1) How has the acoustic industry changed in the last 50 years?
- 2) How has technology/equipment changed and how do you think it is beginning to and will continue to alter our careers (consultancy, public services, research) in the future?
- 3) Where do you think the acoustic industry will be in 50 years? Will there always be a need for the discipline?

17:00 Close

THURSDAY 12 SEPTEMBER 2024

UKAN+ at Acoustics 2024

ROOM 5

9:00 Registration

9:30 Welcome and introductions (Kirill Horoshenkov, Richard Craster)

9:40 History of UKAN and key achievements (Kirill Horoshenkov, Richard Craster)

10:00 EPSRC strategy and UKAN (Andy Lawrence)

Funded projects

10:15 • The Rest is Just Noise Podcast (Francesco Aletta, Andrew Mitchell)

10:30 • Soundscape of protected natural areas (Tin Oberman)

10:45 • Biodegradable eco-acoustic sensing for scalable, far-reaching, and sustainable biodiversity monitoring (Sarab S Sethi)

11:00 Coffee

11:30 Rayleigh Medal 2024 lecture – ROOM 1

Malcolm Crocker, Auburn University, USA

12:30 Lunch and UKAN Poster session

Funded projects

13:30 • Curved metasurfaces for healthcare uses – Gianluca Memoli

13:45 • Bioacoustic monitoring using drones – Lin Wang

Special Interest Groups

14:00 • Mathematical SIG (Anastasia Kisil)

• Physical Acoustics (Olga Umnova)

• Noise and Soundscapes (Abigail Bristow)

Challenges in Acoustics

14:30 • Quiet Drones (Antonio Torija Martinez)

• Mathematical challenges (Raphael Assier)

Sustainability in acoustics

14:50 • Sustainability in Acoustics (Barry Jobling)

15:00 Refreshments

15:30 UKAN and IOA (David Waddington)

15:40 Noise Network (Mark Plumbley)

15:50 Sound Futures - CDT (Trevor Cox)

16:00 Discussion Session

(Facilitators: Kirill Horoshenkov, Richard Craster, David Waddington, Stephen Dance)

An interactive discussion session discussing some pre-set questions about:

- The future of UKAN
- Links with IOA
- Role of SIGs

16:55 Closing remarks (Kirill Horoshenkov, Richard Craster)

17:00 Drinks reception

FRIDAY 13 SEPTEMBER 2024

08:30 Registration and refreshments

ROOM 1

Building Acoustics

Chair: James Healey

09:30 Wind-induced creaking in tall buildings
Alec Korchev, Clarke Saunders Acoustics; London South Bank University; Ed Clarke, Clarke Saunders Acoustics; Stephen Dance, Ottavia Rispoli, London South Bank University

10:00 Quantitative measurements of lightweight timber floors using low-frequency impact source; analysis of the accuracy of 1/3 octave band heavy-hard impact prediction modelling in lightweight structures
Tim Patzke, Pliteq UK

10:30 Investigating vibration effects on wooden frame buildings: a focus on CLT response to traffic-induced vibration
Jorge D'Avillez, Zijiang Yang, WSP Acoustics UK

11:00 Refreshments

11:30 Reducing embodied carbon in heavyweight acoustic design
Tom Van Dongen, Mason UK

12:00 Building acoustics and sustainability – Some real-world examples
Ben F Burgess, Atelier Ten

12:30 Towards a simplified model for partially open windows: connecting acoustic and thermal comfort
James Healey, Jonathan Howell, Peninsular Acoustics; Jack Harvie-Clark, James Hill, Luis Pereira, Julien Batten, Apex Acoustics; Gioia Fusaro, University of Bologna

13:00 Building Acoustics Group AGM

13:00 Lunch and Posters

14:00 Speech babble as sound masking in open plan offices – a statistical approach
Pete Leonard, Anthony Chilton, Max Fordham

14:30 Sound power of normal speech for building acoustics
Carl Hopkins, Simone Graetzer, Gary Seiffert, University of Liverpool

15:00 Refreshments and Close

15:30 Optional Visit and Tour to Salford University Energy House 2.0
Please meet James Healey at the IOA Registration Desk area.

FRIDAY 13 SEPTEMBER 2024

ROOM 2

Measurement & Instrumentation

Chair: Simon Bull

09:30 From Sky to Shaker: A case study on replicating drone-induced vibration for the assessment of the integrity of medical products
Katherine Theobald, Timothy Waters, University of Southampton; Wanqing Zhu, Thomas Cherrett, Paul G Royall, Kings College London

10:00 When barriers fall down- Identifying common errors in noise barrier designs for environmental applications
Giles Parker, Sound Barrier Solutions

10:30 Towards an in-direct method for low frequency sound transmission
Toby Charity, Joshua W R Meggitt, University of Salford,

11:00 Refreshments

11:30 Different logging rates for measuring the prominence of impulsive sounds and for adjustment of LAeq
Douglas Manvell, DMdB, Denmark; Thom King, Michael Whiteman, Hottinger Brüel & Kjaer, Denmark

12:00 Acoustic beamforming for a pipe inspection robot
Yicheng Yu, Kirill Horoshenkov, Anton Krynkina, Simon Tait, University of Sheffield,

12:30 A comparison of two acoustic characterisation methods of air source heat pumps
Max Aaron Radivan, Lucy Barton, Antonio Torija Martinez, Jonathan Hargreaves, Volkan Acun, Simone Graetzer, Daniel Wong-McSweeney, David Waddington, University of Salford

13:00 Measurement & Instrumentation AGM

13:00 Lunch and Posters

Measurement & Instrumentation

Chair: John Shelton

14:00 An acoustic vector receiver for wall condition assessment in a water-filled pipe
Joanna Watts, Kirill Horoshenkov, University of Sheffield

14:30 Measurement uncertainty in sound insulation
Bill Whitfield, noise.co.uk

15:00 Refreshments and Close

FRIDAY 13 SEPTEMBER 2024

ROOM 3

Sound, Noise and Health
Chair: Benjamin Fenech

- 09:30 National Highways 'noise KPI mitigation planning and implementation
Andrew Beamish, National Highways
- 10:00 Strength of community and good PR overcome traditional noise limits for music venue
James Hill, Jack Harvie-Clark, Geoff Venus, Apex Acoustics; Peter Rogers; Sustainable Acoustics
Francesco Aletta, Jian Kang, University College London
- 10:30 Association between perceived acoustic comfort and wellbeing for schoolteachers at work:
a cross-sectional survey in the UK
Hatice Kübra Kuruköse Çal, Francesco Aletta, Jian Kang, UCL Institute for Environmental Design
and Engineering,

11:00 Refreshments

- 11:30 Noise disturbance – baseline level monitoring in the Solent
Najwa Adnan-Smith, Dawit Abraham, Tetra Tech
- 12:00 ~~Crossing the theory to practice divide on soundscape~~ (Withdrawn)
~~Peter Rogers, Sustainable Acoustics~~

13:00 Sound, Noise & Health AGM

13:00 Lunch and Posters

- 14:00 Planning for sound from ASHPs: options, risks and opportunities
Jack Harvie-Clark, Nick Dobinson, Ross Latue, Elspecth Chatto, Shona Briers, Gethin Gegarty,
Apex Acoustics; Matt Torjussen, ANV; Peter Rogers, Sustainable Acoustics; Rebecca Hogg, BSRIA;
James Allan, East Herts District Council; Angela Blackburne Wallis, Newcastle City Council
- 14:30 Thames Tideway Tunnel – The management of construction noise taking account of individual
circumstances and sensitives
Graham Parry, ACON UK; Stephen Turner, Stephen Turner Acoustics
- 15:00 Overview of QuietDrones 2024: International Conference on Noise of Advanced Air Mobility
Aircraft
Antonio J Torija Martinez, University of Salford

15:30 Refreshments and Close

FRIDAY 13 SEPTEMBER 2024

ROOM 4

Musical Acoustics

Chair: Stephen Dance

- 09:30 Face the music: a 20-year plan
Stephen Dance, London South Bank University; Geogia Zepidou, Aecom
- 10:00 Noise exposure of musicians in amateur wind bands
David Yates, Syntegra Consulting
- 10:30 Application of the missing fundamental as a method of low frequency noise control at outdoor music events
Peter J Wheeler, Acoustic Consultants & Open University; David Sharp, Shahram Taherzadeh, Open University

11:00 Refreshments

- 11:30 Acoustic spectrogram for evaluating the effectiveness of acceptance and commitment training (act) as a music performance anxiety (mpa) management method for professional singers
Gökçe Kutsal, Sounteria Ltd; D Winter, Voice Study Centre, University of Wales Trinity Saint Davids; D G Juncos, Hornstein, Platt & Associates,
- 12:00 Acoustics of a choir rehearsal room.
Vincent Tham Jee Sheng, Stephen Dance, London South Bank University
- 12:30 The historical auralisation of Lichfield Cathedral's quire
George Moore, Benjamin West, Islah Ali-MacLachlan, Birmingham City University

13:00 Musical Acoustics Group AGM

13:00 Lunch and Posters

Musical Acoustics

Chair: David Sharp

- 14:00 Double reed sound production on the bass crumhorn
Marco George Aragó Bishop, Murray Campbell, Alan Wooley, The University of Edinburgh
- 14:30 Listener evaluation of real and synthesised impulse response desirability using convolution with the violin string signal
Patrick Gaydecki and Jiayi You, The University of Manchester
- 15:00 A machine learning approach to noise suppression and timbre enhancement of early 20th century music
Jiayi You, Patrick Gaydecki, Claire Mitchell, University of Manchester

15:30 Refreshments and Close

FRIDAY 13 SEPTEMBER 2024

ROOM 5

Royal Environmental Health Institute of Scotland (REHIS)

Chartered Institute of Environmental Health (CIEH)

Chair: Stephen Turner

09:30 Healthy sound environments: surviving engagements with EHPs
Paul McCullough, Armagh, Banbridge & Craigavon Borough Council; Somayya Yaqub, London Borough of Ealing

10:00 Using anti-social behaviour powers to deal with noise nuisance
Kate Hughes, Halton Borough Council

10:30 Soundscape, perceived control and engagement: developing a grounded theory for salutogenic spatial planning
Lisa Lavia, Noise Abatement Society and Heriot Watt University; Caroline, Brown, Royal Town Planning Institute; Sarah Payne, University of Surrey

11:00 Refreshments

11:30 Regulatory experience and challenges
Louise Manson, Angus Council

12:00 Regulatory challenges in outdoor concerts
Claire Devlin, City of Edinburgh Council

12:30 Open Discussion

13:00 Lunch and Posters

Physical Acoustics

Chair: Shahram Taherzadeh

14:00 Influence of pore wall roughness on sound absorption
Keith Attenborough, The Open University

14:30 Sound transmission through rigid porous materials with and without perforations
Haydar Aygun, London South Bank University

15:00 Compatibility between noise and ventilation requirements in teaching spaces in Scottish schools
Elena Prokofieva, Edinburgh Napier University

15:30 Refreshments and Close

POSTERS

Sustainability – design of acoustic systems: reducing embodied carbon
Tim Patzke, Pliteq UK

Comparative analysis of MFCC and GTCC in laryngeal pathology detection based on electroglottographic signals
Julia Zofia Tomaszewska University of West London, Christos Chousidis, University of Surrey, Apostolos Georgakis, University of West London

A draft conceptual framework for a new international technical standard on non-acoustic factors
Lisa Woodland, Julie Chieng, Benjamin Fenech, UK Health Security Agency (UKHSA);
Lisa Lavia, Noise Abatement Society; Francesco Aletta, Jian Kang, Andrew Mitchell, Univesity College London

Testing of noise & vibration isolated floor-ceiling setups for cross laminated timber (CLT) constructions
Sarah Huskie, CDM Stravitec

Acoustic measurement of vacuum glazing
Lucy S Barton, University of Salford