

Reproduced Sound 2012

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# **Auralisation – designing with sound**

14-16 November 2012, Thistle Hotel, Brighton



## WEDNESDAY 14 NOVEMBER 2012

	<b>Noblesse Room – Tutorial</b>
20.30	<b>Three dimensional sound field</b> <i>Filippo Fazi, ISVR, University of Southampton</i> This lecture is an introduction to the physical and mathematical fundamentals of the sound field in three dimensions. The sound field is described as the linear superposition of plane waves impinging, in general, from all possible directions. The theory of Fourier transform and of spherical harmonic decomposition is briefly reviewed and applied to the representation of sound fields. The basics of 3D audio capturing and reproduction, the concept of spatial impulse response of a room and Auralization are briefly presented and analysed in relation to the theory introduced. Finally, the more mathematically challenging topic of integral representation of sound fields is discussed briefly.

## THURSDAY 15 NOVEMBER 2012

09.15	<b>Introduction</b> <i>Paul Malpas, Electroacoustic Group Chairman</i>
	<b>SESSION 1 – AURALISATION</b>
	<b>Keynote paper</b>
09.30	<b>How spherical loudspeakers came into auralisation</b> <i>Michael Vorlander, RWTH Aachen University, Germany</i>
10.30	<b>The role of auralisation in interdisciplinary design</b> <i>Paul Malpas, EAd</i>

11:00	Coffee
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11.30	<b>Creation of virtual sound environments using geometrical acoustics and finite elements method</b> <i>Luis Tafur, Takashi Takeuchi, Keith Holland, University of Southampton</i>
12.00	<b>A subjective evaluation of auralisation accuracy by computer simulation</b> <i>Ali Sanavi, University of Salford</i>
12.30	<b>Smyth SVS : using headphones to re-create loudspeakers in a room</b> <i>Mike Smyth, Smyth Research</i>

13.00	Lunch
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	<b>SESSION 2 – LOUDSPEAKERS AND REPRODUCTION</b>
14.00	<b>Reproduction of binaural signals through loudspeakers</b> <i>Bruno Masiero, RWTH Aachen University, Germany</i>
14.30	<b>Stereophonic sound reproduction for multiple listeners</b> <i>Juan de Dios Rodrigues, University of Southampton</i>
15.00	<b>3D audio: some thoughts and outlooks</b> <i>Francis Li, University of Salford</i>

15.30	Tea
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16.00	<b>Linear phase implementation in loudspeaker systems; measurements, processing methodology and application benefits</b> <i>Remi Vauchier, NEXO</i>
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16.30	<b>Tonal balance variation using line source arrays</b> <i>J Lavel, L-acoustics</i>
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### Peter Barnett Memorial Award

17.00	<b>A practical merger of the measurement, listening and prediction processes, using B-Format Room Impulse Responses</b> <i>Pat Brown, SynAudCon, USA</i>
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17.30	EAG AGM
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18.30	Reception
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19.00	Conference Dinner
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### Evening Demonstration

21.00	<b>How will the proposed High Speed 2 railway effect the life of communities along the route? Predicting, mitigating, auralising and presenting the results in a way that people can understand.</b> <i>Arup</i>
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**FRIDAY 16 NOVEMBER 2012**

SESSION 3 – INTELLIGIBILITY	
09.00	Preliminary validation of the STI rating male for the English language <i>Lorenzo Morales, Stephen Dance, London South Bank University, Glenn Leembruggen, ICE Design, Australia</i>
09.30	Can you rely on the STI? A comparison of three sound system case studies <i>Glenn Leembruggen, David Gilfillan, ICE Design, Australia, Lorenzo Morales, London South Bank University</i>
10.00	Sound design for the London Aquatics Centre <i>Sam Wise, Arup Acoustics</i>

10.30	Coffee
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SESSION 4 – ROOM ACOUSTICS AND MEASUREMENT	
11.00	Modern measurements in the presence of audience <i>Wolfgang Ahnert, S Feistel, AFMG Technologies, Germany</i>
11.30	Human factors affecting the acoustic measurement of rooms <i>Philip Newell, Consultant, Spain, Keith Holland, Soledad Torres-Guijarro, Julius Newell, Southampton University</i>
12.00	The propagation of low frequency sound through an audience <i>Elena Shabalina, RWTH Aachen University, Germany</i>
12.30	Low frequency reflection control in listening rooms <i>Jamie Angus, University of Salford</i>

13.00	Lunch
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SESSION 5 – ACOUSTICAL THEORY	
14.00	Psychoacoustic evaluation of spatial audio reproduction systems <i>Darius Satongar, University of Salford</i>
14.30	Application of the boundary element method to the design of a microphone array beamformer <i>Khemapat Tontiwattanukul, University of Southampton</i>
15.00	Transient acoustic analysis of simple rooms <i>Patrick Macey, PACSYS</i>

15.30	Coffee
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SESSION 6 – PERCEPTION	
16.00	Hearing through darkness: a study of perceptual auditory information in real rooms and its effect in distance discrimination <i>Neofitos Kapanis, Jose van Velzen, Goldsmiths College, London</i>
16.30	Towards a human perceptual model for 3D sound localization <i>Symeon Mattes, University of Southampton</i>
17.00	Towards a generalized theory of low-frequency sound source localization <i>Adam Hill, Simon Lewis, University of Derby, Malcolm Hawksford, University of Essex</i>
17.30	Localisation of elevated virtual sources in high-order ambisonic sound fields <i>Paul Power, University of Salford</i>



# REGISTRATION FORM

**REPRODUCED SOUND 2012 – 14-16 NOVEMBER 2012**

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ONLINE REGISTRATION IS AVAILABLE AT: [WWW.IOA.ORG.UK](http://WWW.IOA.ORG.UK)

All prices inclusive of VAT

## Delegate Fees:

- Fee for Authors (*giving presentation*) £ 200.00  
 Fee for Members, IOA, ISCE, AES, ABTT, APRS, other authors & overseas delegates £ 400.00  
 Fee for Non-members £ 450.00  
 Fee for Students (*I enclose written confirmation of my student status from my Head of Department*) £ 60.00  
 Please tick if this is the first RS conference you have attended

## Day Rate: (please indicate which day you will attend. Covers CD proceedings, refreshments and lunch)

- Members  Thursday  Friday £ 250.00  
Non-members  Thursday  Friday £ 300.00  
Students  Thursday  Friday £ 60.00  
 Conference Dinner on Thursday 15 November 2011 for day delegates £ 45.00  
 I would like vegetarian meals

## Exhibition: (additional exhibitors should register at members rates)

- Commercial Exhibition Fee £ 1,200.00  
 Educational Exhibition Fee £ 800.00

Full details available on the IOA website: [www.ioa.org.uk](http://www.ioa.org.uk)

## Accommodation:

A number of rooms have been reserved at the Thistle Hotel and can be booked direct with the hotel quoting the reference "Institute of Acoustics"  
Single B&B £98.00 Tel: 01273 765522

- Proceedings:**  I am unable to attend the conference. Please send me a copy of the Conference CD proceedings.  
 Members £20.00  Non-Members £30.00

## Payment instructions:

Total: £

There are four ways to pay. Please indicate your chosen method: (CANCELLATIONS ARE PAYABLE IN FULL)

**1. Cheques:** Payable to "Institute of Acoustics" (in £ Sterling drawn on UK bank account)

**2. Direct to Bank:** BACS: Account No: 00375204 Sort Code: 30 94 81  
**Bank Transfer:** SWIFT LOYDGB21024 IBAN GB27LOYD30948100375204  
**Bank Address:** Lloyds TSB Knightsbridge Branch, PO Box 663, 79-81 Brompton Road, London SW1 1DD  
*A copy of the instructions to the bank should be attached with the registration form.  
Please quote 'RS2012' and the name of the delegate registered.*

**3. Invoice:** Please supply purchase order number:

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Card Number:            
Card Expiry Date:  /  Security Code:    *last 3 digits on back of card*  
Maestro only: Issue No.  or Valid from:  /

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