



British Section Newsletter

October 2006

Upcoming events

14th November 2006 – 7pm (AGM 6.30pm)

Lecture and AGM: Room perfect DSP room correction
Jan Abildgaard Pedersen, Lyngdorf Audio
Royal Academy of Engineering, London

17th November 2006 – 10.30am to 3pm

Technical visit: London College of Music and Media,
Thames Valley University
Ealing, London

12th December 2006 – 7pm

Lecture: The Evolution of Computer Game Audio
Adam Philp, Sensaura
Royal Academy of Engineering, London

Lecture and AGM – Room Perfect DSP room correction

by Jan Abildgaard Pedersen, Lyngdorf Audio

Tuesday 14th November - 7pm (AGM 6.30pm)

A novel method is presented for equalizing a loudspeaker, for a specific listening position in order to compensate for an influence of the room in which it is positioned. The method is based on measuring the sound pressure in the listening position (focus position) and in at least 3 randomly selected positions scattered across the entire listening room (room positions). The measurement in the listening position holds information about the listener's access to the sound field while the room positions hold information about the energy in the 3D sound field. The correction for the listening position is then bound by upper and lower gain limits calculated as a function of frequency from the information about the 3D sound field.

Jan Abildgaard Pedersen graduated with a Masters Degree in Electrical Engineering from the University of Aalborg in Denmark in 1993, where he specialized in Acoustics.

For more than 10 years Jan was employed at Bang & Olufsen, Denmark, in a position as Technology Specialist for Acoustics and DSP. In summer 2004 Jan joined AM3D, Denmark, in a position as Senior Research Manager. As of 1st of October 2005 Jan joined Lyngdorf Audio (formerly TACT) in a position as Senior Research Manager, and is now the Chief Technology Officer of Lyngdorf Audio. Jan has previously presented work on "Low Frequency Sound Field", "Near-Field Acoustic Measurements", "Warped Filters", "Volterra Series", "Subwoofer Requirements", "Acoustic Reflectors" and "Loudspeaker/Room Adaption".

This lecture will be held at The Royal Academy of Engineering, 29 Great Peter Street, London, SW1P 3LW. Great Peter Street runs between Great Smith Street/Marsham Street and Millbank, just behind Westminster Abbey.

Nearest underground stations are St. James's Park and Westminster. There is free parking in local streets after 6.30pm. The Congestion Charge also operates in this area until 6.30pm. Refreshments at 6.30pm, lecture at 7.00pm. Everyone is welcome.

Technical Visit to The London College of Music

Friday 17th November, 10.30 - 3.00pm

Based in Ealing, West London, The London College of Music and Media (as was) is part of the Arts Faculty of Thames Valley University. As well as offering highly regarded courses in music and performance, it is widely recognised as a leader in the teaching of music technology. Use of the facilities at Ealing Film Studios is complemented by flexible access to its own studios, making it the largest dedicated recording studio network in London.

On the day we visit, the college is being relaunched as the London College of Music. Our visit will begin at 10.30am with director of studies Mark Irwin and Grammy winner Pip Williams, who has produced over 170 recordings with a wide variety of artists including Status Quo and The Moody Blues, showing us round the facilities and explaining the college's courses. We will then adjourn to Ealing Town Hall for some lunch, where there will be displays of the college's work. There are live performances at the same venue in the evening which anyone is welcome to stay on for if they wish.

Places are limited, so please book as soon as possible. Email uk@aes.org

October lecture report

Audio is done, isn't it?

Keith Howard

On October 17th the UK Section of the AES hosted a lecture titled "Audio is done, isn't it?" by Keith Howard, Hi-Fi News consultant technical editor and Stereophile contributing editor. The talk set out to discuss six of the challenges still to be addressed in the audio industry.

Keith started off with a discussion of multichannel audio, talking about Quadraphonics (what went wrong), the reasons for going multichannel, the types of multichannel sound and issues surrounding soundfield delivery (Ambisonics and Wave Field Synthesis).

Keith then went on to look at Trifield processing and gave a convincing demo showing the benefits including improved central image stability and wider listening area. Keith suggested that one of the reasons behind the small uptake of Trifield processing included the fact that there is only one piece of, expensive, software available to do the processing.

Keith then covered the problems with jitter and how they are effected by modern high definition audio formats. He also discussed the audibility of jitter at different frequencies, gave a demonstration of what jitter sounds like and talked about mechanisms for measuring it.

Keith then went on to talk about some tests he did to look at how the pre-response on down sampling filters effects the output audio. He concluded that it had no audible effect.

Keith discussed the persistent problem of speaker-room interaction. He contended that speaker directivity should be contrived to make it as simple as possible for the ear/brain to recognise and suppress the effect of the room, so speaker directivity must be constant with frequency. Pointing out that omni's were not necessarily the answer, he pointed out the various techniques for directivity control.

Finally, Keith covered the topic of microphone noise and how it interacts with quantisation, effectively removing the need for dither. He gave an interesting demo which showed only when the microphone noise was very low did the quantisation error signal contain an audible distorted copy of the original music signal.

There followed a lively question and answer session. A recording of the lecture is available from the UK section website at pastmeetings.aes-uk.org.

UK Section Conference

Illusions in Sound - the application of psychoacoustics to audio 11th and 12th April 2007 Cambridge

Call for Papers

The AES UK Conference 2007 will bring together researchers, developers and practitioners in audio. The emphasis this year is on the application of psychoacoustics to audio.

The Conference 2007 committee invites submission of technical papers for presentation at the Conference in Cambridge. Authors who would like to submit a paper to the conference should first send a title and a 500 word précis to uk@aes.org. The précis must cite relevant references. Acceptance of papers will be based on review of each précis by members of the conference committee.

The significant deadlines are:

- Friday 10th November 2006 -- Title and Précis due
- Friday 1st December 2006 -- Authors notified regarding acceptance of paper
- Monday 26th February 2007 -- Final paper due

Institute of Acoustics - Reproduced Sound Conference

The IOA's 22nd Reproduced Sound conference will be held on Friday 3 and Saturday 4 November at the Oxford Hotel, Oxford.

The agenda, will cover papers on: Loudspeakers, Speech Intelligibility, Distribution/Networking, Digital Audio Networks, Lossy Compression and Bitrate Reduction, Ultrasonic Audio, Sound System Applications and Virtual Acoustics. More information at: <http://www.reproducedsound.co.uk/>

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