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THE AUDIO ENGINEERING SOCIETY BULLETIN



SEPTEMBER 2008

2008-2009 AES TORONTO SECTION EXECUTIVE

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The Toronto AES Section Bulletin is published ten times yearly by the Audio Engineering Society Toronto Section and is available on the Internet at www.TorontoAES.org

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Presentation - Tour **Active Compensation of Nonlinear Loudspeaker Distortion** Wolfgang Klippel and Adamson Pro Audio

date
time
where

Tuesday, 23 September 2008
7:00 PM (Note the earlier start time)
1401 Scugog Line 6
Port Perry, ON
www.adamsonproaudio.com

For directions, goto
www.adamsonproaudio.com/contact/international/internationalmap.htm

Nonlinearities inherent in electromechanical and electro-acoustical transducers produce signal distortion and limit the maximal amplitude of the output signal. Assessing the large signal performance has been a subject of acoustical research for many years providing nonlinear models and new methods for the measurement of the large signal parameters. The identified model allows prediction and simulation of the nonlinear behavior and direct comparison with measured symptoms. The good agreement between model and reality is the basis for developing novel digital controllers dedicated to transducers that compensate actively for nonlinear distortion by inverse preprocessing of the electrical input signal. This paper gives a lecture on the activities in the last 15 years and new challenges of the future.

Wolfgang Klippel studied electrical engineering at the University of Technology of Dresden. After graduating in speech recognition, Wolfgang Klippel joined a loudspeaker company in the eastern part of Germany. He was engaged in the research of transducer modelling, acoustic measurement and psychoacoustics. In 1987, he received a PhD in technical acoustics.

After spending a post-doctoral year at the Audio Research Group in Waterloo, Canada and working at Harman International, Northridge, CA he went back to Dresden in 1997 and founded the Klippel GmbH which develops novel kinds of control and measurements systems dedicated to loudspeakers and other transducers.

Wolfgang Klippel received the AES Publication Award for the outstanding paper published in the Journal of the Audio Engineering Society in 1992 and the AES Fellowship in 1997. In 2007 he became a professor for electro-acoustics at the University of Technology in Dresden.

Canadian company **Adamson Systems Engineering** develops and manufactures a complete line of advanced technology loudspeaker products for the professional touring and installation market. Designed and constructed to exacting specifications, every stage of an Adamson loudspeaker is produced entirely in-house. Adamson's work has led to a number of important patents in key loudspeaker technologies being published. From those patented principles emerged complex sound chambers, highly engineered drivers, and innovative rigging and cabinet designs that have set new standards throughout the world.

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