香港聲學學會
Hong Kong Institute of Acoustics

Supporting organizations

Technical Webinar on:

Studio Acoustics, New Developments in Predictive Software
Date: 14 March, 2023 (Tuesday)
Time: 7:00 pm – 8:30 pm (1 CPD hour)
Free of charge and open to all

Register Now

Closing on 12 Mar

https://forms.gle/YzMKP5fRUbM4Uug88

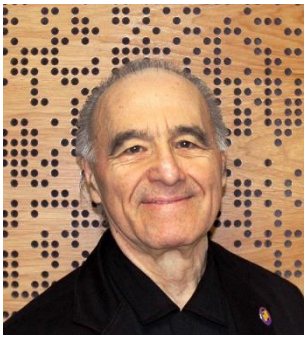
About the Seminar

Non-cuboid iterative room optimizer (NIRO®)

The growing processing power of desktop and distributed cloud cluster computing is playing a larger role providing computational architectural acoustic solutions. This presentation will provide a status update on the Non-cuboid Iterative Room Optimization software called NIRO. It offers an iterative approach to full bandwidth optimization of critical listening rooms. The program uses a Finite Element Method (FEM), Image Source Model (ISM), and Non-dominating Sorting Genetic Algorithm (NSGA) to simultaneously optimize the room geometry of any shaped room, including boundary admittances, for any number of listeners and loudspeakers. It minimizes the weighted sum of the modal response and speaker boundary interference response, the spatial uniformity around the mix position and reflections in the Reflection Free Zone (RFZ). With an optimal room setup, acoustical diffusors and absorbers with a specified resonant frequency, bandwidth, and efficiency are added to the model to optimize the acoustic properties. A combination of FEM, ISM, and an additional geometrical acoustics model is used to generate full bandwidth impulse responses. The RFZ, envelopment, reverberation time, low-frequency response, and temporal decay are optimized and evaluated. Following the addition of HRTFs, stereo auralization can be generated. Proof of performance and application examples will be presented.

About the Speakers

John Storyk is a registered architect and acoustician and is a founding partner with his wife Beth Walters of WSDG (Walters-Storyk Design Group). He has provided design and construction supervision services for hundreds of professional audio and video recording projects, since the 1969 design of Jimi Hendrix's Electric Lady Studios in New York City. He is a member of the American Institute of Architects (AIA), Acoustical Society of America, Audio Engineering Society (Fellow Award recipient) and a frequent contributor to AES and NAMM convention papers and professional industry periodicals. Together with PK Pandey and Peter D'Antonio they founded REDI Acoustics, LLC in 2018 to develop innovative optimization software for critical listening rooms.



Peter D' Antonio pioneered the sound diffusion industry and developed test standards for diffusion and scattering coefficients. He founded RPG in 1983 and holds many trademarks and patents for diffusing and absorbing technology. As a musician and recording engineer, he developed widely used designs for recording studios, beginning in 1974, utilizing a temporal and spatial reflection zone and reflection phase grating diffusors. Dr D' Antonio is Fellow of the Acoustical Society of America and the Audio Engineering Society. He published widely and is the co-author of the book "Acoustic Absorbers and Diffusers: Theory, Design and Application" 3rd Ed, published by CRC Press (2017).

CPD Certificate in electronic format will be provided via email after the seminar.