AES Audio Engineering Society - Pacific Northwest Section

Around the Puget Sound, Seattle, Washington, U.S.A.

Single-page poster version

February Meeting Notice

Concepts and Practices for Evaluation of Rooms and Sound Systems Using FFT Analysis II

Sponsored by Pacific NW Section Audio Engineering Society and Meyer Sound Laboratories

When: Saturday, February 4, 2006, 9:30 AM
Where: Microsoft Campus, Redmond (exact place known only to registrants)
Cost: Free, members and non-members alike
Note: Pre-registration required

Please join us for the second in what is intended to be a long-running series of workshops examining concepts and tools used in acoustic analysis of physical spaces.

Since the time of the ancient Greeks, people have tried various schemes to make a room "sound better", with the goal of increasing vocal and music intelligibility. In the early part of the last century, Dr. Wallace Sabine began to quantify the "sound" of a room mathematically, and Dr. Richard Heyser's identification of the concept of Time Delay Spectrometry gave practitioners a useful methodology for seeing the acoustics of a given space. TDS gave us a new and better way to explore acoustics with instruments, and was originally implemented in the non-computer analog domain.

Later techniques employ the computer-based Fast Fourier Transform (FFT) as the core of their analytical processing and are able to deliver more and more measurement data. With the advent of increasingly powerful personal computers, FFT analysis has become more readily available and useful. A number of products have been introduced using FFT analysis to aid in room and sound system design; although each has its own variants on methodology, they are all still looking at the same acoustic problems, and use many of the same concepts and nomenclature.

Successful use of any testing method requires that the tester have the right analysis system for the job, and that the data delivered by the system will be helpful in answering the question being asked;

1. know what the analysis system is actually measuring; and
2. know how to use the analysis system.

With this in mind, The Pacific Northwest Section of the Audio Engineering Society (www.aes.org/sections/pnw) and Meyer Sound Laboratories (www.meyersound.com) will present an all-day workshop titled "Concepts and Practices for Evaluation of Rooms and Sound Systems Using FFT Analysis".

The original SIM (Source Independent Measurement) system was introduced in 1986, and was the first dual channel FFT analysis system in which the excitation signal was independent of – not generated or determined by – the measurement system. This allows it to be used in real time during live events, without interfering with the event, and makes it possible to unobtrusively adjust to changes caused by or during the presence of an audience.

Source independent measurement uses faster, high-resolution algorithms that substantially decrease errors and achieve more precision than conventional dual-FFT techniques. Source independent measurement provides the information required to verify the components of a sound system including polarity, distortion, dynamic range, coverage and more.

For this workshop, the SIM3 will allow us to see what our ears are hearing, and we will learn how it does what it does. The presenters will do their best to let us hear manifestations of the concepts discussed, and there will be opportunities for the listeners to ask questions and suggest test conditions.

The workshop will be held Saturday, February 4, 2006, on the Microsoft main campus in Redmond. Admission will be free to AES Members and non-members alike, but pre-registration will be required for everyone (details below). Parking details will be provided along with meeting location in registration confirmation.

As mentioned above, there are a number of hardware and software analysis tools available for room analysis, and this will be the second event in a series. The first, held in 2003, looked at Goldline's TEF20, and the PNW AES hopes for further presentations in the future as the technology and understanding continues to evolve.

NOTE: This is a very deep subject, and attendees should be ready to gain an understanding of just how deep it is, rather than have an expectation that this workshop will provide any level of mastery of the topic (or of the SIM3!).

To aid your advance background research, we have prepared some information which is available at these links:

www.aes.org/sections/pnw/reference

SIM 3 General Information
SIM 3 User Guide pdf

Our Presenters

Don Pearson - RIP
Technical Seminar Instructor

Don Pearson passed away unexpectedly on Monday, January 9, 2006 during heart surgery. His passing leaves a huge void, not only at Meyer Sound, but also within our narrow little niche of an industry. We have been informed that the seminars will proceed, without Don, and that his shoes, although of finite size, will be difficult ones to fill. You can read more about this exceptional person in his obituary: SF Chronicle Article

He will be missed!

Don Pearson brings to his seminars an exceptional combination of theoretical knowledge and applied experience. In 1978 he co-founded legendary Bay Area sound rental company Ultra Sound, an early adopter of Meyer Sound technology. Under Pearson's guidance, Ultra Sound was heralded for a studied approach to developing large-scale systems of extraordinary clarity for acts as diverse as the Grateful Dead the Dave Matthews Band and Andrea Bocelli. Pearson left Ultra Sound (then merged into Pro Media/Ultra Sound) in mid-2004 to offer independent services, including system consulting and tuning, as well as advanced training seminars. He joined Meyer Sound's staff in late 2004.

Todd Meier
Design Services Manager

As head of the Design Services Department, Todd Meier assists Meyer Sound staff and key customers in overcoming the toughest system design challenges by applying his in-depth mastery of the Meyer Sound MAPP Online acoustical prediction program. Meier came to the company in 1997 already equipped with a strong background in system installation design, especially in theatrical applications, having worked extensively with award-winning sound designer, Jonathan Deans, at Real Time Audio. In association with Level Control Systems, he completed several major projects for Las Vegas casinos, and was a key contributor to sound for Walt Disney's production of Beauty and the Beast in Toronto and for the US national tour, as well as the Toronto and Los Angeles productions of Ragtime: The Musical. Meier received a Master of Fine Arts in Sound Design from UCLA, and is a certified SIM Engineer.

John Monitto
Technical Sales Support Manager

John Monitto's extensive experience in audio engineering, from international touring to audio sales and

fixed installation contracts, makes him the key contact at Meyer Sound for system design and advice.

Prior to joining Meyer Sound, John was with Pro Media for eleven years. Here he worked as a project manager within their fast growing sound and audio/visual system installations division, as well as being the director of rental services. John toured as a systems engineer with Luciano Pavarotti for concerts throughout the United States, Canada, Mexico and South America. He served as an audio engineer and sound designer for concerts by Placido Domingo and José Carreras, as well as for corporate events produced by IBM, Apple Computer, Clorox and Motorola.

Gavin Canaan
Educational Programs Manager

Gavin Canaan's career at Meyer Sound began with six years as a service representative before he moved on to sound rental company Pro Media/Ultra Sound for a five-year stint as their operations manager. Canaan returned to Meyer Sound in 2004 to serve as chief administrator of an expanding, worldwide educational effort that continues to set the standard for the professional audio industry. With broad experience at both the factory and user ends of the industry, Canaan is well equipped to grasp the importance of providing a thorough grounding in technology and a clear understanding of each product's capabilities in complex sound reinforcement systems.

Schedule

9:30am Coffee and Pastries
10am: Start Morning Session
12:30pm: Lunch
1:30pm: 1st Afternoon Session
3:15pm: Afternoon Break
3:30pm: 2nd Afternoon Session
5:30pm End

Preregistration

Please send an email to: Rick Chinn / Registrar

Please be sure to include a contact phone number and your company affiliation, if any.

Capacity is limited, so first come first served. We will send you the location of the meeting after your registration request is processed.

Last modified 1/9/2006.