



Electrical Engineering Colloquium
Dallas Chapter of IEEE Signal Processing Society Presents

**Active Noise Control Systems:
DSP Algorithms and Applications**

Professor Sen Kuo
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Thursday, Oct 5, 2006
ECSS 2.102 (TI Auditorium), 11:00am

This presentation involves active noise control (ANC) systems with focus on digital signal processing (DSP) algorithms, implementations, and applications. We will briefly review ANC algorithms and introduce three new algorithms for further improving ANC system performance: virtual sensing, residual noise masking using psychoacoustic principles, and active sound quality control. A snore ANC system is used as an example for demonstrating the complete process of developing commercial products for real-world applications. An ANC application evolves from system specifications, acoustics and feasibility analysis, experimental setups and measurements, practical considerations, algorithm development and computer modeling, simulation and fine tuning, real-time experiment, and hardware development and system integration.

Sen Kuo is a Professor and Chair in the Department of Electrical Engineering, Northern Illinois University, DeKalb, IL. He is the leading author of five books: *Active Noise Control Systems* (Wiley, 1996), *Design of Active Noise Control Systems with the TMS320 Family* (Texas Instruments, 1996), *Real-Time Digital Signal Processing* (Wiley, 2001, 2nd Ed. 2006), and *Digital Signal Processors* (Prentice Hall, 2005), and a co-author of *Embedded Signal Processing with the Micro Signal Architecture* (Wiley 2007). He holds seven US patents, and has published over 180 technical papers. His research focuses on active noise and vibration control, real-time DSP applications, adaptive echo and noise cancellation, digital audio applications, and digital communications.

For more information on the Dallas Chapter and directions to UTD, please refer to <http://www.utdallas.edu/~kehtar/ieee-sp>