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Committee’s Greeting

Audio is now commonly processed in the frequency domain, i.e., input audio signals are divided into a number of frequency channels or bins that are processed separately, and also depending on time. The aim in such processing can be data compression or the enhancement of audio quality. Such benefits are possible because the structure of the human hearing mechanism is based on similar time–frequency analysis by the brain of signals coming from the ear canals. When the audio processing is performed in a way similar to human hearing, the signal processing structures can be designed to make the benefits easily reachable. There are already many applications that take advantage of the human hearing resolution, like the perceptual coding of audio in mp3 and AAC. Time–frequency processing is also actively applied in sound analysis and synthesis and in speech processing. An emerging field is multichannel and spatial applications utilizing time–frequency processing.

The idea for this conference came from recognizing the common background in many different audio technologies that implement time–frequency processing in ways that may appear to be different at first glance. We hope that all conference goers take away an expanded view of the technologies, mathematics, and psychoacoustics related to time–frequency processing of audio. We believe that by participating in the conference, you are helping to move this audio field forward!

Welcome to the AES 45th International Conference, Applications of Time–Frequency Processing in Audio. Thank you for submitting very good articles and coming to Finland. A warm thanks goes also to the AES Conference Policy Committee for accepting the idea and AES Headquarters for helping in the arrangements.

Ville Pulkki
Conference chair