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Special Session: Soundscape: Standardization and Implementation

Description: Latest developments in soundscape analysis standardization and methodology

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### **Soundscape Analysis – Need for (automatic) source separation**

The use of psychoacoustics for soundscape analysis is imperative to predict the soundscape from an acoustical point of view.

Psychoacoustic parameters as functions of intensity, time structure and spectral content play an important role with respect to several sensations and yield information with greater differentiation than usually applied indicators within the community noise context. But, with respect to a comprehensive analysis of a soundscape the exact source constellation must be known. Based on the performance of the human hearing system including intelligent signal processing, a listener can easily focus on a certain source and suppress the noise of other sources, which considerably influences the general appreciation of the whole soundscape. For example, this ability is permanently used to improve speech intelligibility in noisy environments.

Therefore, an acoustical soundscape analysis should not just deal with the overall noise, but rather the (psycho-)acoustical properties of the different sources present in a soundscape must be investigated separately.

Different methods are conceivable in realizing source separation in complex noise scenarios. The paper will present a few case studies demonstrating the opportunities in separating the contributions of several sound sources within a soundscape.

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