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**SS:**
**21.04 Psychoacoustic approach to noise problems in daily life**
**(chaired by Hugo Fastl, Sonoku Kuwano, Dongxing Mao)**

**Title:**
The application of psychoacoustics to environmental noise issues

**Authors:**
Klaus Genuit, André Fiebig

An outdoor environment consists of a number of spatially distributed sound sources, which give the location its distinctiveness. It is clear that the perception of a multi-source scenario cannot be simply predicted and described in terms of a single acoustical parameter (like $L_{Aeq}$) without considering on the one hand psychoacoustic properties of the environmental noise and on the other hand the specific source constellation. Unfortunately, community noise regulations are still limited to isolated considerations of different source contributions completely neglecting any interaction and superposition effects.
For example, the intended introduction of certain sound sources into environments could lead to a substantial annoyance decrease due to a masking of unwanted noise (properties or sources), although a sound level based indicator would slightly increase. Of course, due to interaction effects for example leading to specific modulations or fluctuations, the introduction of a special source can be quickly counterproductive.
Based on several experiments the sound design potential in environmental context will be demonstrated. By means of experimental data options and limitations will be discussed with respect to the approach of deliberately introducing sound sources in environmental settings.



HEAD acoustics GmbH
Ebertstraße 30a
52134 Herzogenrath, Germany