

ASA 2015 Pittsburgh

**169th Meeting of the Acoustical Society of America May 18th to 22nd 2015
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The topic of the session is "Noise, Soundscape, and Health"

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Title:

The character of noise and its relation to noise effects

Abstract:

The existence of noise effects leading to adverse health effects is beyond controversy. However, the main factors responsible for specific noise effects are still not clear. The human hearing system does not only register the sound pressure level of noise. It shows a high performance in amplitude, frequency and time resolution and recognizes patterns in noise. Interestingly, several physiological reactions are not only influenced by the sound pressure level of noise. Due to certain psychoacoustic properties of noise or the level of noise annoyance stronger physiological reactions are stimulated. In order to predict responses to noise more reliably, psychoacoustic parameters and further hearing related-parameters have to be applied. Moreover, it is decisive to distinguish between auditory sensation and sound perception. Sound perception refers to complex processes, where additional information is processed and "mixed" with basic auditory sensations. Sound perception implies the cognitive processing, interpretation and assessment of sound. Some studies suggest that the sound perception dimension is highly relevant to evoked physiological reactions and noise effects. The paper illustrates the difference between auditory sensation and sound perception and highlights the need to analyze sound in terms of perception to understand noise effects more in detail.

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