

ASA 2015 Pittsburgh

**169th Meeting of the Acoustical Society of America May 18<sup>th</sup> to 22<sup>nd</sup> 2015  
at Pittsburgh, Pennsylvania**

The topic of the session is "Application of Psychoacoustics in Noise".

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Title: Environmental noise assessment by means of psychoacoustics and its  
relation to in-situ annoyance judgments of urban noise

Abstract:

It is obvious that environmental noise assessment only based on the consideration of  $L_{Aeq}$  values cannot determine the character of environmental noise and its specific reactions and responses evoked. Noise is not only perceived in terms of lower or higher (averaged) sound pressure levels; noise leads to different auditory sensations and perceptions, which are influenced by context. The introduction of psychoacoustics allows for describing the character of noise more in detail and for predicting human responses to noise more reliably. In order to investigate the link between psychoacoustic parameters and annoyance judgments, soundwalk data including in-situ noise judgments from several measurement campaigns were analyzed. It turned out that by taking into account psychoacoustic parameters more variance in noise annoyance data is explained. Based on the analysis and results of the soundwalk data, the questions are addressed about how long must be measured to encompass all relevant acoustical situations and how the measurement of short-term reactions are related to long-term noise effects. Based on the presented case studies, it is intended to gain insight into the benefits and limitations of psychoacoustics with respect to environmental noise assessment.

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