ABSTRACT SUBMISSION

SQS 2008, 31st July,
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Required Abstract Information for SQS 2008

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Title
Advanced Methods and Tools for Sound Quality Evaluation

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Abstract
Sound quality evaluation has become a very important task for product design. Customers expect product sound without disturbing noises, a challenge because spectral and temporal noise patterns (like modulated signals) must be considered. In general, patterns, once detected, will be perceived as annoying even if the level is reduced. This phenomenon of human hearing is not covered by any standard. Often only frequency-weighted level like dB(A) or sometimes loudness are used in specifying new products. The recently published extension of the German standard for time-varying loudness (DIN 45631/A1) is a step in the

right direction. Besides time-varying loudness, other parameters like roughness should be used for sound quality evaluation, especially for modulated sounds. Some years ago, a “Hearing Model” was developed explaining and describing many psychoacoustic effects and allowing for roughness calculation in accordance with subjective listening tests. The “Relative Approach” analysis as a pattern-oriented algorithm based on the Hearing Model emphasizes all relevant signal components concerning human auditory perception: tonal and transient signals. This advanced tool helps the acoustic engineer identify the noise patterns, where absolute level or loudness is often without significance. This paper presents different tools available to measure and analyze sound quality using various examples.

Number of Words (should be less than or equal to 200).
199

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