

Ingternoise 2014

Paper Title Progresses in calculating tonality of technical sounds

Author Sottek, Roland

Affiliations HEAD acoustics GmbH, Germany

Abstract Noise with tonal components, howling sounds, and modulated signals are often the cause of customer complaints when emitted from technical products. The perception and evaluation of sound events containing such components has become increasingly important, e. g., in the field of vehicle acoustics for the assessment of tonality due to alternative drives. Furthermore, Information Technology (IT) devices and products like hard disk drives may emit tonal sounds. Despite their very low sound pressure levels, such noise is unwanted and should preferably be avoided or masked. The psychoacoustic parameter tonality was introduced in order to quantify the perception of tonal content. However, existing methods for tonality calculation show problems when applied to technical sounds. Recently, a new approach to tonality calculation based on a hearing model was presented by Sottek, Kamp and Fiebig. In accordance with recent research results, the calculation of tonality is therein performed upon the basis of the partial loudness of tonal content. The paper presents model improvements exploiting the results of new listening tests especially in order to indicate adequately the perceived tonality of technical sounds with low sound pressure levels.

Theme T6 Psycho-acoustics in noise evaluation

Find more event abstracts in our >> abstracts archive <<

HEAD acoustics GmbH
Ebertstraße 30a
52134 Herzogenrath, Germany