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Title:

Modeling fluctuation strength based on the Sottek Hearing Model

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Abstract:

Fluctuating sounds are easily recognizable and have a significant impact on sound quality. It is therefore essential to quantify them in a way that reflects human perception. Extensive research in the literature has been conducted on the perception of fluctuating sounds. However, there is currently no standardized calculation method. There was no reliable approach for estimating the perceived fluctuation strength, especially for technical sounds. This paper presents an algorithm for calculating the perceived fluctuation strength of technical sounds, extending a method previously presented in DAGA 2023. The algorithm is based on the Sottek Hearing Model Roughness published in the ECMA-418-2 standard and the HSA (High-resolution Spectral Analysis) to identify low-rate modulations. It was improved and validated using the results of jury tests with technical sounds and synthetic data. The algorithm is planned to be included in the next version of the ECMA-418-2 standard.

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