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Place:

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Title:

Development of sound quality metrics using models based on human perception and their applications

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Abstract:

Sound quality metrics are often used to analyze complex sound scenarios, such as soundscape applications. Sound quality can also affect the health and well-being of people in a given environment. Therefore, it is of the utmost importance that the definition of good sound quality in a particular context is as precise as possible. In this aspect, psychoacoustic indicators are usually used to develop these metrics.

In his lecture, Roland Sottek will review the existing standardized time-varying loudness models: the Zwicker method (ISO 532-1) and the Moore-Glasberg-Schlittenlacher method (ISO 532-3), which he supported as project leader and as ISO working group member, respectively, as well as the Sottek Hearing Model Loudness (recently standardized in ECMA 418-2 2nd Edition), a new approach based on a nonlinear combination of partial tonal and noise loudness (introduced in ECMA-74 17th Edition as part of the Sottek Hearing Model Tonality, now moved to ECMA 418-2) to better account for the fact that the loudness of tonal components, i.e., tonal loudness, may have a stronger impact on the loudness perception than the loudness caused by the noise components, i.e., noise loudness. Additionally, he will give an overview of' the psychoacoustic roughness based on the Sottek Hearing Model (standardized in ECMA-418-2 1st and 2nd Edition) for the evaluation of fast modulated sounds and on another model for slow modulated sounds: the Sottek Hearing Model Fluctuation Strength, which will be standardized in the near future.

The talk will also provide insights into the complex mechanisms of forming overall noise assessments for some application examples with highly time-varying signals.

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