

## Quiet Drones 2024

8 – 11 September 2024

**Place:**

Manchester, UK

**Title:**

Psychoacoustics standards using the Sottek Hearing Model and their applications

**Author:**

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**Abstract:**

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

In his lecture, Roland Sottek will review the SHM Loudness (based on the **Sottek Hearing Model**, recently standardized in ECMA 418-2), a new approach to time-varying loudness based on a nonlinear combination of partial tonal and noise loudness (as part of the SHM Tonality, standardized in ECMA 418-2) to better account for the fact that the loudness of tonal components, i.e., tonal loudness, may have a stronger influence on loudness perception than the loudness caused by the other components, i.e., noise loudness. He will also give a brief introduction to psychoacoustic modulation analyses: the SHM Roughness for the assessment of fast modulated sounds (standardized in ECMA 418-2) and the SHM Fluctuation Strength, an adapted model for slow modulated sounds (planned to be standardized later this year). Moreover, he will give an outlook on other parameters that are in preparation for future standards, like the SHM Sharpness and the SHM Impulsiveness.

The talk will also provide insights into the importance of psychoacoustic parameter values in the development of sound quality metrics for unmanned aircraft systems.

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