

**TITLE: Sharpness perception and modeling of stationary and time-varying sounds**

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**ABSTRACT BODY:**

Psychoacoustic parameters like loudness and sharpness can be used for sound quality assessment and sound design applications. While loudness of stationary sounds has been standardized for decades, standards for sharpness of stationary sounds and loudness of time-varying sounds have only been published since 2009 (DIN 45692:2009-08) and 2010 (DIN 45631/A1:2010-03), respectively.

Present calculation methods of sharpness consider the “center of gravity” of the weighted specific loudness patterns as a measure for sharpness, thus their results do not depend on loudness. Only the Aures model includes, to a small extent, the influence of loudness on sharpness by an additional loudness-dependent factor.

Until now, mostly stationary synthetic sounds (filtered noise and pure tones) have been used for the derivation of sharpness models. However, when these calculation procedures are applied to generally time-varying technical sounds, the results deviate significantly from the listening test results.

This study describes new listening tests performed to investigate systematically the influence of loudness as well as temporal structures on sharpness. The findings from the listening tests should serve as a basis for an improved model of sharpness perception for stationary and time-varying sounds.

**CURRENT TECHNICAL COMMITTEE:** Noise

**CURRENT SPECIAL SESSION:** Sound Design

**PRESENTATION TYPE:** Invited Submission: Lecture

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