

## DAGA 2013

**Title:** Progresses in standardizing loudness of time-variant sounds

**Short title:** Time-variant loudness

**Classification:** Psychoacoustics (Psychoakustik)

**Structured session:** Models of the hearing system and psychoacoustic quantities

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**Language:** English

**Status:** Invited

### **Abstract:**

A new ISO standard for loudness of time-variant sounds will be proposed for the revision of ISO 532:1975 section 2 (method B), based on DIN 45631/A1:2010. Apart from being applicable to arbitrary sounds, this standard includes the well-proven and widely used standard DIN 45631:1991 for stationary sounds as a special case. This DIN 45631 standard differs slightly from the previous ISO 532:1975 method B by specifying corrections for low frequencies and by restricting the description of the approach to numerical instructions only, thus allowing a unique software description. The new proposal is also intended to reduce uncertainties of the existing standards by defining the mathematical facts of the algorithms, starting with the waveform of the time signal and ending with specific and total loudness vs. time functions. In addition to the loudness standard for stationary sounds, specifications of the third-octave filter bank, rectification, intensity averaging, non-linear temporal decay of the hearing system and the temporal weighting of total loudness are given not only by formulas and tables but also by program code. The proposed standard shall update the previous ISO 532:1975 method B and adapt it to proven new practice while preserving procedural and database continuity.

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