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Comparison of Loudness Calculation Procedures according to ISO 532-1 and DIN 45631/A1

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Abstract:

In 2017, the standard ISO 532-1 "Method for calculating loudness - Part 1: Zwicker method" was published. The method described in this standard for calculating loudness of time-variant sound is based on the algorithm published in DIN 45631/A1:2010-03 "Calculation of loudness level and loudness from the sound spectrum - Zwicker method - Amendment 1: Calculation of the loudness of time-variant sound". With the official publication of the German translation of ISO 532-1 (DIN ISO 532-1:2022-03) in 2022, there are currently two DIN standards available that describe the calculation of loudness using the Zwicker method.

In this paper, the two methods, ISO 532-1 and DIN 45631/A1, are compared and the extent to which the loudness of the two methods differs is investigated. These results are used to check whether the results of ISO 532-1 are within the tolerances for loudness calculation described in DIN 45631/A1.

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