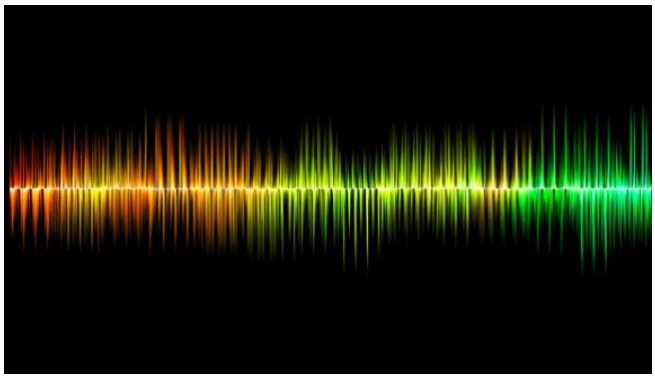
Tonal noise

Leader(s): CIOP-PIB

Members: INRS and IFA

Project closed in 2023



Background

Tonal noise can cause unpleasant working conditions and potentially increase complaints by knowledge workers. So far, however, there has been limited research on the effects of tones on human annoyance that can be used to set objective guidelines or limits on tones in noise. Current indoor noise evaluation methods do not directly account for tonal characteristics of the noise. The annoyance thresholds experienced by the general population with regards to the degree of tones in noise is a significant piece of knowledge that has not been well-established.

AIMS

The projects addresses three complementary research objectives:

- to develop a clear and uniform testing procedure for examining the relationship between tonality perception and noise-induced complaint by tones,
- to examine the relationship between associated tonal noise metrics and annoyance perception,
- to determine upper limits of acceptability for tonality with the goal of developing a dose-response relationship that can be used to set guidelines for tones in noise.

The results of the research will be compared and analyzed in order to propose acceptable noise levels for tonal noise applied to workstations of mental workers that require concentration – for example in administrative rooms, design offices, theoretical work, data preparation and other for similar purposes.

Outcomes/expected results

A joint scientific paper on a dose-response model for annoyance perception of tonal noise as well as a conference presentation summarizing the project results are planned.