

Objective and subjective assessment of acoustics in open-plan offices

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Abstract

The acoustic condition in open-plan offices can significantly affect the work performance and job satisfaction. The main problem in this case is mostly the noise caused by co-workers and intensified by suboptimal room acoustics. To fully assess this complex acoustic scene and to relate it to subjective perception, it is important to use aurally-accurate measurement methods as well as to consider psychoacoustic parameters, which contain information on the temporal and spectral structure of the noise and sound environment. Furthermore, measurements are conducted in the daily working condition in the presence of the workers (in situ) which differs significantly to the noise generated by the building measured in the absence of the working people. This work provides an overview on the acoustic settings in German open-plan offices using objective measures, such as room acoustic parameters and psychoacoustic parameters, considering aurally-accurate assessment measured in situ and in silence. Additionally, these results are linked to the subjective perception assessed using questionnaires in parallel.

Keywords: Open-plan offices, Acoustic scenes