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Psychoacoustic Evaluation of Traffic Noise

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In the European research project "Quiet City Transport" the quantitative characterization of annoyance caused by traffic noise using psychoacoustic descriptors for a perception-related environmental noise description was a major objective. In the first project stage single pass-by noises have been evaluated by subjects. The aim was to discover components and patterns, which are responsible for specific annoyance effects. The results showed that certain noise properties such as diesel knocking are particularly annoying regardless of their absolute sound pressure levels. In the second part of the project complete traffic noise scenarios were evaluated to detect indicators which allow for an adequate assessment of environmental noise quality. Using a traffic noise synthesizer as well as artificial head recordings a wide variety of stimuli were created and evaluated by subjects. By means of a principal component analysis links between specific noise properties and subjective evaluation patterns were found and provided the basis for the development of a metric. The results of the study dealing with the evaluation of traffic noise will be presented and discussed under the perspective of their applicability in environmental noise policy and for soundscape studies.

Number of words in abstract: 186

Keywords: Sound Quality - Soundscape - Listening Tests - Traffic Noise

Technical area: Environmental noise

Special session: Sound quality and soundscapes

Presentation: Oral presentation preferred (Invited paper)

Special equipment: Video-projector (beamer)

Registration: 169090435 - Fiebig André - 0 0 not paid