

Synthesis, auralization and psychoacoustic evaluation of environmental noise – Options for urban (noise) planning

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In the European research project “Quiet City Transport” the quantitative characterization of annoyance caused by traffic noise was a major objective. For it, synthesis tools were developed and subjective listening tests were executed. In the first project stage single pass-by noises were evaluated by subjects, in the second part complete traffic noise scenarios were judged to detect indicators which allow for an assessment of environmental noise quality. To virtually test the (perceptible) efficiency of different mitigation actions and traffic management measures, a traffic noise synthesizer was developed and applied for listening tests.

The transferability of synthesised sounds and laboratory achieved subjective responses to everyday life noise perceptions and evaluations is of course not unproblematic. In particular, in the context of soundscape approaches, where several sensational dimensions within a specific context and environment are considered, the results of a laboratory-oriented approach are only meaningful to a limited degree. However, important information about the reactions to certain noise stimuli was derived, which can also bring forward new concepts about environmental noise perception.

The results of the study will be presented and discussed under the perspective of their applicability in environmental noise policy and also for soundscape studies.