

Evaluation and Development in Sound Design a Matter of Combining Physical and Perception Data in Noise and Vibration

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ABSTRACT

Presently, there is the dilemma of uncertainty with respect to the evaluation of sound and vibration based on the fact that there is obviously no agreement upon appropriate methods to measure the "truth" concerning the acceptance of sound and vibration. To evaluate properly physical and perception data in sound and vibration it is necessary to implement new methods and innovative approaches to understand the input of human response in sound design. Fortunately, an elaborate dialogue of the usefulness and applicability of those approaches is in progress. Moreover, the need of using and combining perception and physical data in order to comprehend the process of human perception and evaluation sufficiently is widely accepted. However, still the question remains how the goal of an adequate combination can be achieved. Clearly, the multidimensional human perception cannot be easily reduced to singular numbers. Moreover, factors, among others the meaning of the sound, the composition of the diverse sound sources, the listener's attitude, expectations and experiences, are significant parameters which have to be considered to comprehend the different perceptions and evaluations with regard to specific stimuli. Taking under consideration the physical, psychological, and cognitive dimensions as well as the integration of aspects of design require partially various new approaches. While binaural measurement and analysis technologies and psycho-acoustics are well established as they are proved to be valuable auxiliary tools; it has not been achieved to develop generally acceptable measurement units concerning sound quality. Consequently, there is a need for new approaches and methods which make it possible to comprehend sufficiently the process of perception and evaluation. Going with people's mind will be one solution for the future; this concept will be introduced based on the development in sound design.