Titel: Auxiliary equipment in electric vehicles - Evaluation of noise quality based on component tests

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Abstract: In the automotive sector, end users are getting increasingly sensitive to noise and vibration quality. With increasing electrification, the powertrain noises become quieter and auxiliary components are operated independently. Thereby, the different operating noises of these components can be perceived more clearly. It is not sufficient to consider the sound pressure level alone to evaluate their sound quality in the vehicle, especially if it is based on measurements on component test benches. Specially tuned psychoacoustic analyses are necessary for an analytical recognition whether a component is perceived of high or inferior quality or even faulty. In this paper, tools and methods are presented to derive procedures that can be used to track the noise quality of auxiliary equipment in the development process – without extensive vehicle measurements or listening tests.

Classification: Measuring, testing and experimental engineering (Sound characterization)

Innovation value:

Specially tuned psychoacoustic analyses replace extensive vehicle measurements or listening tests