Session: E-Mobility-Challenge for Acoustics

Title: The New Sounds of Electric Vehicles - Quieter but Really Better?

Invited paper

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Abstract:

The development of new vehicles – cars and scooters – with electric powertrain is not a simple evolution but means a revolution with respect to sound. After listening of more than 150 years to the specific sound of combustion engines, electric vehicles provide the opportunity of complete new sound experiences. Not only the sound level is lower but the whole character of the sound is changed. Several questions are coming up with the new generation of powertrains: Does the sound fit to the vehicle, what are the expectations of the customers and the people around the vehicles, which information should be given by the sound, do we need new regulations with respect to sound? All these topics and their implications must be discussed carefully. It is evident that effective sound design must consider diverse perceptual needs. This paper gives an introduction and an overview of new challenges arising from E-Mobility considering the interior and exterior sound as well as the environmental and safety aspects.