

Pavement noise measurements in Poland

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Abstract. The objective of this study is to investigate the feasibility of the On-Board Sound Intensity (OBSI) system to measure tire-pavement noise in Poland. In general, sources of noise emitted by the modern vehicles are the propulsion noise, aerodynamic resistance and noise generated at the tire-pavement interface. In order to capture tire-pavement noise, the OBSI system uses a noise intensity probe installed in the close proximity of that interface. In this study, OBSI measurements were performed at different types of pavement surfaces such as stone mastic asphalt (SMA), regular asphalt concrete (HMA) as well as Portland cement concrete (PCC). The influence of several necessary OBSI measurement conditions were recognized as: testing speed, air temperature, tire pressure and tire type. The results of this study demonstrate that the OBSI system is a viable and robust tool that can be used for the quality evaluation of newly built asphalt pavements in Poland. It can be also applied to generate reliable input parameters for the noise propagation models that are used to assess the environmental impact of new and existing highway corridors.