Abstracts

Road Surface Classification by Using a Polarimetric Coherent Radar Module at Millimeter Waves

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In this paper we report on a prototype system, which is able to detect the road condition. A coherent polarisation-sensitive millimeterwave sensor, which measures the complete backscattering matrix (amplitude and phase) was built at 61 GHz and tested in a standard car under real traffic conditions. The deduced polarisation information was compared with reference characteristics obtained from previous measurements. For a limited number of surfaces it is shown that the type of surface layer can be reliably predicted. The information can be used to inform the driver about critical road situations, e.g. aquaplaning, snow and icy surfaces.

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