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Automotive tire/road sound quality

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Tire/Road Noise and Sound Quality are increasingly important factors for customer satisfaction. As vehicle interior sound levels decrease, the noise from tires and their interaction with the road become more noticeable. Both tire and vehicle manufacturers need to assess as early as possible the impact of any tire-vehicle combination on perceived interior sound quality. In this paper, we describe two projects in which psychoacoustics concepts were applied to help, on one hand, tire manufacturers to screen for designs likely to generate poor sound quality in vehicle, and, on the other hand, vehicle manufacturers to measure the impact of road noise and interior acoustic treatment on Speech Transmission in the cabin. In both projects, the activities were driven by the understanding of the psychoacoustic features of tire/road noise and by the need to improve customer satisfaction.