

研究室名	黒沢研究室 学会発表
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演題名	Transmission loss and radiation sound analysis for automotive floor mat
発表者	○ <u>黒沢 良夫</u> 、山下剛、尾崎哲也、中泉直之、藤田優希、高橋学
内容	<p>The performance enhancement of the acoustic insulation is demanded for the high frequency for interior noise of automobile. A carpet having urethane adhered to a rubber skin is generally laminated on a floor panel of an automobile. In order to elucidate noise and vibration for this structure, the vibration transmission rate was measured using a test apparatus in which a carpet was laminated on a panel simulating the floor of an automobile. In addition, we modeled this experimental apparatus with finite elements and analyzed the vibration during displacement excitation. Biot-Allard model was used for felt and urethane. We calculate using separately identified Biot parameters and compare with experimental results and introduce the change of vibration and obtained findings when material is changed. In the low frequency range, the values changed significantly when the skin density, Young's modulus and loss factor of urethane were changed. In the high frequency range, the values changed significantly when the skin density and Young's modulus, porosity and Young's modulus and density of urethane were changed. If the spring constant of the connection spring between the panel and urethane is reduced (floating image), the transmission loss increases. If the connection spring is large, the transmission loss will be small, and it will be the smallest value for bonding.</p>