Sound and Vibration Analysis of the Acoustic Fields Involving Felt when Excited Panel

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In automobiles, noise may be generated in the passenger compartment, which is a closed space with a panel that is the outer wall and a breathable trim. We created a simple model based on these assumptions and performed experiments and vibration acoustic analysis. We placed a partition plate with a hole in an acrylic pipe that has an inner diameter of 100mm and vibrated the iron plate (panel) placed on the bottom with hammer. Then we measured the vibration and sound pressure level when the hole shape of the partition plate was changed and felt was placed. In addition, we create a similar FE model and report the results of the analysis of the sound pressure level when the acoustic characteristics of felt placed in the holes of the partition are changed.