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Title:

Investigations of the influence of an artificial head on acoustic characteristics of vehicle cabins based on FE simulation results

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Abstract:

The application of artificial heads for the test-based investigation of NVH problems has been established for many years. As building physical prototypes for testing purposes is cost- and time-intensive, the role of simulation becomes more and more important in the development process in almost any industry branch. As part of this trend, the simulation of NVH problems is also growing rapidly. In planning virtual measurements in car cabins, questions about the interdependency of the artificial head and the testing environment arise, necessitating the finding of efficient modeling techniques.

This work investigates the influence of an artificial head on the acoustic characteristics of a vehicle cabin by application of FE-based simulation. Therefore, an FE model of an empty cabin is constructed. It is then equipped with an FE model of an artificial head. For the empty cabin as well as the equipped cabin, the resulting cavity modes are computed and differences are presented in detail. Several cabin configurations differing in size and shape are investigated.

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