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**Title:** Parameterizing mount models from in-situ measurements

**Abstract**:

Transfer Path Analysis and Synthesis is a widely-used troubleshooting and engineering method in the development process of a car. An engine TPA model should include the engine mounts because they are important elements of the structure-borne paths from the engine to the driver's ears. This allows identifying if the structure, the sound radiation or the mount is a weak point of the transmission. A mount can be characterized, e. g., by a mount attenuation function, a four-pole model, or a simple parametric mount model. If the mount characteristics are known, the influence of a different mount on the structure-borne sound can be virtually predicted without a real modification. The mount characteristics could be determined on special test rigs but the transferability to the real situation is often questionable because the same boundary conditions on the test rig and in the car are difficult to guarantee. On the other hand, special test rigs have to be adapted for each mount: this requires time and money. Time is strictly limited due to a more and more short development cycle. Thus, a TPA method must give best possible results with reasonable effort. Hence, mount characteristics should be extracted only from in-situ measurements and not from test rig data. In this paper a method is introduced that parameterizes simple mount models based on in-situ measurements allowing a time domain TPA. The approach is a further development of the Effective Mount Transfer Function method that considers the strong coupling of the receiver structure and the benefit of a Transfer Path Synthesis based on active-side accelerations.

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