

عنوان مقاله:

Vehicle Interior Vibration Simulation-a Tool for Engine Mount Optimization

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خلاصه مقاله:

By new advancements in vehicle manufacturing vehicle quality evaluation and assurance has become a more critical issue. In present work, the vibration transfer path analysis and vibration path ranking of a car interior has been performed. The method is similar to classical multilevel TPA methods but has distinct differences. The method is named VIVS which stands for Vehicle Interior Vibration Simulation. Performance of some tests like chassis dyno test, virtual mass function test and body transfer function test are required in this approach. The accelerations on both sides of the engine mounts are measured on chassis dyno by which the virtual mass and body transfer functions are measured at engine mounts. Using the concept of multilevel TPA, the vibration share from each path is calculated. The overall vibration magnitude at target point is calculated by summing the shares. Path ranking can be done by having the share of each path from overall vibration magnitude. Using this method on a sample vehicle, some modification has been proposed to decrease the vibration at target point, and the side effect of the modifications on the powertrain dynamic behavior has been evaluated. The proposed method needs less analysis time than classical .TPA methods and its ability in optimization of vibration magnitude at target points is proven

کلمات کلیدی:

Vibration, Structure Borne Noise, Transfer paths, Path ranking, Engine mount

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