Dr. Peter Blaschke
Head of Research, Development and Consulting NVH

HEAD acoustics GmbH
Eberstr. 30a
52134 Herzogenrath
Germany

Psychoacoustical Brake Noise Evaluation and Transfer Path Analysis for Correlation of Dynamometer Measurements with the Vehicle

- How to use objective noise index for brake noise
- Correlation of physical and acoustical parameters
- How to correlate dynamometer values to vehicle measurements on test tracks

The sign off for NVH is crucial for the start of production (SOP) of a new vehicle. The sign off evaluation for NVH should not be a surprise and a job stopper.

This paper will deal with the subject of how to prevent NVH surprises by using novel developed Brake Noise Indices, psychoacoustical pattern detection and the correlation with physical parameters. This will ensure the noise evaluation and that the targets are achieved from job 1 to SOP.

Another important step in the development cycle for brake noise is the evaluation of the brake dynamometer results. Different dynamometer types and different fixtures make it a difficult task. However, it is important to correlate these dynamometer NVH results with the vehicle. Newly developed tools of the transfer path analysis and synthesis should be taken into account in this process.