

# InViDia - Intelligent Model-based Vibration Diagnostics for Automotive NVH Applications

The noise, vibration and harshness (NVH) characteristics are of increasing importance for modern vehicles and must be guaranteed for the whole life cycle but in case of NVH problems it is challenging to find the underlying causes (e.g. imbalances, broken bearing, ...). In this project, additional sensors (displacement, acceleration, strain) are used to find these underlying causes by use of a combination of model-based and machine learning approaches.

- Modeling of mechanical structures from FEM-simulation or measurement data
- Evaluation of possible sensor positions through observability measures
- Model-based approaches for force reconstruction
- Machine learning approaches for classifying NVH problems
- Validation of methods in simulation studies and on test setup
- Project partner: AVL DiTEST GmbH

