

Student Thesis (BA/MA)

Application of cutting-edge technology to

Static Strength and Dynamic Durability of High-Speed Rail Vehicle Bogies



Background

The bogie is the main supporting structure of a rail vehicle and carries the wheelsets, drives, motors, and suspension systems. It transfers the weight of the vehicle and its payload to the rails. Bogies are critical to the ride safety and comfort of rail vehicles to ensure safe and reliable rail operations. Reliable prediction of the structural strength of the bogie frame of rail vehicles under complex operating conditions is one of the essential prerequisites for safe and economical vehicle operation over the entire service life.

Do you feel ready to collaborate on this exciting topic, please contact us!

Tasks

- Perform project specific linear and non-linear structural calculations
- Develop and validate FEM simulation models for the fatigue analysis of bogie frame
- Support of our project team and work on complex rail vehicle components
- Student research project is possible, but optional

Your profile

- Good knowledge of structural mechanics and dynamics
- Programming skills (MATLAB, Python)
- Experience with Hypermesh is an advantage