virtual vehicle

FIELDS OF ACTIVITY

# VEHICLE-TRACK INTERACTION

**We provide a R&D platform for de-risking future rail system technologies, by means of research and technology development with a focus on a service oriented, modular virtual validation framework.**

## OUR KEY EXPERTISE & USP

- Wheel-Rail Interaction & Deterioration Phenomena
- Vehicle Dynamics & Operation Analysis
- Monitoring & Diagnosis of vehicle and track
- Digital Twins Networks

## OUR SKILLS

- Physical Modelling, Algorithm Development, Data Analytics & Acquisition, Automated Integration
- 35 employees with long-term experience in R&D in the field of vehicle/track-interaction
- 50+ Peer Reviewed publications, Member of scientific committees, Numerous awards

## TASKS, METHODS & TOOLS

- **Physics:** Physical component models, Multibody Dynamics, Discrete Element Method (DEM), FEM
- **Algorithms:** End-to-end solution for development in Python and/or Matlab
- **Data Analytics:** Own solution for flexible data analysis for Python, Matlab and R
- **Data Acquisition:** Own solution (Data.Beam), Acoustic Measurement Equipment with TestLab
- **Automation:** Own Simulation Orchestration Service

## KEY PARTNERS (excerpt)

voestalpine EINEN SCHRITT VORAUS. · SIEMENS · TU Graz · ÖBB · DB · SBB CFF FFS · ALSTOM · STADLER · RAILplus · getzner · LUCCHINI RS GROUP · Plasser & Theurer · JOANNEUM RESEARCH · University of Sheffield · BRNO UNIVERSITY OF TECHNOLOGY

## OUR OFFER ...

- Combined Methods & Tools to an integrated whole rail system model framework for design, optimization and virtual homologation of track concepts and components
- End-to-end solution (from sensor to algorithm) as basis for decision support systems
- Physical modelling & simulation of complex interactions and phenomena
- Algorithm development based on hybrid approaches

## ... AND YOUR BENEFITS

- Reduction of project risk through early integration of virtual validation methods
- Decrease Market-Uptake Time by virtual product development methods
- Access to test benches via partner network
- Beyond state-of-the-art applied research
- Attractive funding opportunities


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Find out more: