Research project: AnoWaAS

Adapted and optimised body concept for alternative drive systems in rail vehicles

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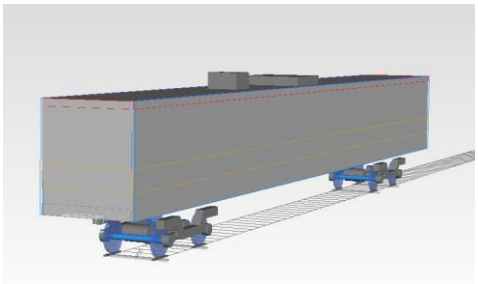

MBS model of a multiple unit with position-variable components

Motivation

As part of the joint project "AnoWaAS - Adapted and Optimised Car Body Concept for Alternative Drive Systems in Rail Vehicles", a new, lightweight and modular car body for rail vehicles is being developed together with the partners Alstom Transport, Hörmann Vehicle Engineering, DLR, Elemag, Rausch Metalltechnik and the SLV Berlin-Brandenburg. In terms of its structure and architecture, this is to be adapted as optimally as possible to alternative drive systems. The positioning of heavy components is of significant importance here. An essential aspect is the vehicle dynamic behaviour, which is the focus of the work of the Chair of Rail Vehicle Technology. The transfer of the approach to other sectors will also be considered.

Initial situation

Currently and in the future, rail vehicles with alternative drives for non-electrified lines are being developed to a much greater extent. Currently, these are primarily adaptation designs of vehicles with conventional drives.

In order to find solutions quickly and in a targeted manner, it is highly relevant to take vehicle dynamics into account already in the early concept phase, which is not yet the case to a large extent.

Intended research results

- Vehicle dynamic analysis and evaluation of lightweight optimised rail vehicles with alternative drives in the early concept phase
- Development of methodical procedures for vehicle dynamic optimisation accompanying conception and design
- Transfer approach to other industries

Method

- Analysis of mass distribution during conception and design from a vehicle dynamics perspective
- Vehicle dynamic evaluation and optimisation of variants in close interaction with the vehicle body design and construction

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