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Master Thesis

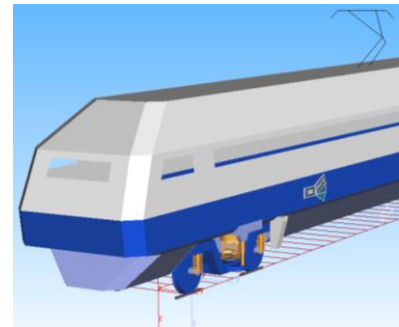
„Multi-body simulation modelling of lubricated journal bearing joint “

Short description:

The multi-body simulation is an effective way to analyse complex dynamic behaviour of mechanical system. Numerical multi-body simulation of a bogie is challenging due to its composition of flexible bodies, springs and dampers, and joints. Plain bearings or journal bearings are commonly used for rotating or sliding joints due to its simple and compact design, and durability. Friction and wear are often kept to a minimum by lubricants such as grease or oil. But, due to the bearing's construction, it usually has higher coefficient of friction compared to ball bearings. Under certain conditions, this leads to stick-slip phenomenon occurring within the journal bearing or break down of lubrication films. Using multi-body simulation method, the aim of this master thesis is to develop modelling methods of frictional behaviour at mechanical joints.

Main Tasks:

- Literature research in the area of multi-body simulation concerning frictional behaviour and bearings
- Development of modelling methods for lubricated plain bearing in SimPack
- Comparison of different possible modelling methods
- Potential validation experiment of the developed model
- Writing and presentation of the master thesis



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