

Einladung zum Vortrag

Simulation of cables and hoses

A contribution to virtual product development and assembly planning in automotive industry

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Within the last decade the topic of *modeling and simulation of slender flexible structures* became an increasingly important element of the *virtual product development process* of cars, trucks or similar *vehicle machinery*. The construction of *functional digital mock-ups* and the *simulation of the assembly* (or disassembly) of the huge variety of different *cables and hoses* are the main applications here, for which *geometrically exact rod models of Cosserat type*, embedded in a software environment that supports the handling of complex CAD geometries, provide the appropriate modeling framework for this purpose. In the presentation, different aspects of discrete Cosserat rod models will be touched, including approaches to solve *quasistatic and dynamic problems*, and some remarks on the *modeling and measurement of effective constitutive properties*. Some *application examples from automotive industry* illustrate the practical usage of such models.

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