

Diplom Thesis/Master Thesis

Beam Formulations in the Context of Elastic Multibody Systems



Within the framework of the cooperation with the ITM/TU Dresden, the Chair of Dynamics and Mechanism Design conducts research in the field of textile machine simulation. Besides the modelling of the machine, the modelling of the textile structures is in focus. For a thesis the following task steps are planned:

- *Research on the possibilities of implementing yarns as elastic structures in multibody systems (MBS)*
- *Comparison of simulations of different beam formulations both in the MBS simulation environment Simpack and in MATLAB, considering at least the following two modelling types:*
 - *Absolute Nodal Coordinate Formulations*
 - *Geometrically Exact Beam Formulations*
- *Prerequisites: Good knowledge in mechanics, vibration theory, mathematics, MBS software – preferably Simpack; programming experience in MATLAB*

Start: as of now

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