Dipl.-/Master-/Bachelor-Thesis and if necessary Research Project/Study Project

Implementing of Arbitrary Yarn Material Models in Simpack

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 or a student project the following task steps are planned:

- *Literature research on the material properties of plasticity and viscoelasticity including relaxation*
- *Feasibility studies of implementing these properties in Simpack utilising nonlinear SIMBEAM:*
  - *Using standard library elements in the multibody simulation environment Simpack*
  - *In coupling with MATLAB/Simulink and if applicable with the MATLAB toolbox Simscape Multibody additionally*
- *Performance comparison of the different variants*
- *Prerequisites: Good knowledge in mechanics, vibration theory, mathematics, MBS software – preferably Simpack; programming experience in MATLAB; at least three years of studies*

Start: *as of now*

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