

Research Project/Study Project/if *qualified* Student Assistant five hours per week **Yarn Modelling through the Generalised Maxwell Element**



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 student project the following task steps are planned:

- *Familiarization with an object-oriented programmed MATLAB-software in order to extend respectively adapt it regarding to:*
 - *Generating of complex E-moduli from cyclic force-displacement measurement data, if necessary generation of synthetic meas. data*
 - *Parameterised evaluation of these E-moduli in the context of the dynamic-mechanical analysis (DMA) for the parametrisation of a generalised max-wave element*
 - *Implementing of a geometric evaluation methodology regarding to stiffness and damping, based on cyclic measurement data*
 - *Implementing of an alternative evaluation methodology, which is based on measurement data from a free decay test*
- *Prerequisites: Good knowledge in vibration theory, mathematics, programming in MATLAB; at least three years of studies*

Start: as of September 2021

Contact:

M. Sc. Maximilian Krentzien

Chair of Dynamics and Mechanism Design
Marschnerstraße 30, Zi 154, 01307 Dresden

Tel.: +49 (0) 351/ 463 - 37958

E-Mail: maximilian.krentzien@tu-dresden.de

Homepage: www.tu-dresden.de/mw/dmt

