University of Stuttgart
Germany

Institute for Nonlinear Mechanics
University of Stuttgart
Pfaffenwaldring 9
70569 Stuttgart
Germany

At the Institute of Nonlinear Mechanics, University of Stuttgart, a position as

PhD researcher / Post-doc (f/m/d)

with the research topic

Numerical methods for the continuation of periodic solutions of nonsmooth dynamical systems

is to be filled. The applicant either intends a doctoral degree (PhD) or seeks a post-doctoral position. The position (TV-L E13) is initially limited to 3 years. An extension up to 5 years is possible in principle.

Research at our institute addresses questions in mechanics from theoretical, numerical, and experimental perspectives. The institute's research focus lies on the mechanics and dynamics of nonsmooth mechanical systems. Further information about the Institute of Nonlinear Mechanics can be found at www.inm.uni-stuttgart.de.

Research Topic

Nonlinear frequency response functions (FRFs) of unilaterally constrained mechanical systems with friction are highly useful for avoiding resonances in applications such as rotor machinery. Since these systems typically involve frictional contact, a nonsmooth modeling approach is required. The computation of nonlinear FRFs relies on specialized numerical methods that allow branches of periodic solutions to be continued in parameter space. However, the development of continuation methods tailored to nonsmooth systems remains a challenging task.

We appreciate your interest in the position. For further questions, please contact:

Prof. Dr. ir. habil. Remco Leine, leine@inm.uni-stuttgart.de

Requirements

A completed Master's degree (resp. PhD degree) in Mechanical Engineering, Technical Cybernetics, Simulation Technology, Mathematics, or a related field. Strong interest in theoretical mechanics, mathematics, and numerical methods is expected.

We offer

- An established, inspirational and supportive research environment at the Institute for Nonlinear Mechanics.
- An excellent opportunity towards becoming an independent researcher. This includes the exposure to the academic field via conference visits and training programs to support your first steps as an early career scientist.

Please send your application, including CV and transcripts (Master's and Bachelor's, resp. PhD thesis and publications), in a single PDF document by e-mail to leine@inm.uni-stuttgart.de.

The University of Stuttgart is committed to increase the proportion of women in its workforce. Female candidates are therefore explicitly encouraged to apply. Applications from severely disabled persons will be given preference in cases of equal qualification. Employment is managed by the central administration. Information in accordance with Article 13 GDPR on the handling of applicant data can be found at https://uni-stuttgart.de/datenschutz-bewerbung

We look forward to your application!