Leibniz Universität Hannover

The Institute of Structural Analysis at the Leibniz University Hannover invites applications for the position of a

Research Associate/PhD Candidate (m/f/d) on the topic of "Abstract modelling of joints in fiber reinforced composite assemblies" (Salary Scale 13 TV-L, 100 %)

to be filled by August 1, 2021. Initial funding for the position is provided for a duration of 3 years, further extension is possible.

The topic

Finite element models for the numerical analysis of large-scale assemblies in the aerospace and automotive industry may comprise hundreds, or even thousands, of joints. In many cases a detailed, fine-scale representation of the connectors and interfaces comprising the joint results in excessive computational and modelling effort. As a remedy, joints are often modelled in an abstracted manner that aims to describe the essential characteristics of the mechanical response in terms of a significantly reduced degree of freedom. Abstract modelling of joints in finite element analysis is a technique widely applied in industrial practice. There, it is typically limited to linear analysis and isotropic materials. The extension of abstract modelling techniques to account for non-linearities resulting from plasticity, damage, friction, and contact is subject of ongoing research. Further challenges arise in the context of anisotropic materials like fiber reinforced composites.

Tasks

The position offers an interesting research challenge at the interface of fundamental and applied research. The successful candidate will work on extending the state of the art regarding the abstract modelling of various types of joints in fiber reinforced composite assemblies.

Employment conditions

Formal requirements include a scientific university degree (master-level) in engineering, or related fields. The successful candidate will be provided with counsel and support, however, the ability for self-motivated and independent work is essential. This task requires a profound background in solid mechanics, computational methods and mechanics of materials. To complement and validate numerical approaches, the successful candidate will also be involved with the design and implementation of experimental investigations. Knowledge concerning technological aspects of composites and practical engineering skills are beneficial. Willingness to support teaching activities is expected. Good English and basic German language skills are required.

The salary for the position is according to salary scale 13 TV-L, further information can be found online.

Leibniz University Hannover considers itself a family-friendly university and therefore promotes a balance between work and family responsibilities. Part-time employment can be arranged on request, as long as the offered workplace is covered in full extent.

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The university aims to promote equality between women and men. For this purpose, the university strives to reduce under-representation in areas where a certain gender is under-represented. Women are under-represented in the salary scale of the advertised position. Therefore, qualified women are encouraged to apply. Moreover, we welcome applications from qualified men. Preference will be given to equally-qualified applicants with disabilities.

Further inquiries may be directed to Prof. Dr.-Ing. habil. R. Rolfes (Email: r.rolfes@isd.uni-hannover.de) and Dr. Benedikt Daum (Email: b.daum@isd.uni-hannover.de). Further information can be found on our website at: https://www.isd.uni-hannover.de/en/

Applications should include a curriculum vitae and the usual transcripts and certificates. All documents should be merged into a single PDF-file. Application documents should substantiate the applicants skills regarding the aforementioned aspects.

Please submit applications including above-mentioned documents by May 15, 2021 with reference to the internal code **'position 113'** in electronic form to

Email: sekretariat@isd.uni-hannover.de

or alternatively via postal mail to:
Gottfried Wilhelm Leibniz Universität Hannover
Institut für Statik und Dynamik
Appelstr. 9A
30167 Hannover
http://www.uni-hannover.de/jobs

Information on the collection of personal data according to article 13 GDPR can be found at https://www.uni-hannover.de/en/datenschutzhinweis-bewerbungen/.