Faculty of Mathematics

At the DFG Research Group 3013 "Vector- and Tensor-Valued Surface PDEs", two project positions are available at the earliest possible date as a

Research Associate

(Subject to personal qualification employees are remunerated according to salary group E 13 TV-L)

which entails 75% of the fulltime weekly hours for a period of three years. The period of employment is governed by § 2 (2) Fixed Term Research Contracts Act (Wissenschaftszeitvertragsgesetz - WissZeitVG).

The DFG research group 3013 deals with the modelling, numerics and simulation of vector- and tensor-valued partial differential equations on surfaces. It connects worldwide leading research groups in the fields of analysis, numerics as well as modelling and simulation of continuum mechanical processes (http://for3013.webspace.tu-dresden.de). Sub-project 3 "Heterogeneous thin structures with prestrain" deals with the mathematical homogenisation and numerical approximation of thin, nonlinear elastic structures. The effects of microscopic prestressing and material inhomogeneities on the macroscopic mechanical behaviour are investigated.

Tasks: Sub-project 3 has two thematic foci:

(A) Analysis and modelling,
(N) Numerical analysis.

The following task complexes exist within these two focal points:

- homogenisation and dimension reduction using methods from the calculus of variations (Gamma-convergence) and the theory of nonlinear partial differential equations;
- continuum mechanical modelling, especially nonlinear elasticity;
- construction and investigation of finite element methods for non-Euclidean function spaces;
- implementation and integration of the developed methods into existing software environments.

For each of the two research areas, we are looking for a scientist who, as part of the working groups of Prof. Dr. Stefan Neukamm and Prof. Dr. Oliver Sander, will work on sub-project 3. Please indicate your preferred focus in your application.

Requirements: university degree in mathematics or a related field of study; good knowledge in the theory of partial differential equations and basic knowledge in geometric analysis, and

- for focus (A): sound knowledge of the calculus of variations (e.g. Gamma convergence, homogenisation);
- for focus (B): sound knowledge in the theory of finite element methods, experience in programming e.g. C++ or Python.

Applications with or without a PhD are expressly welcome.

Applications from women are particularly welcome. The same applies to people with disabilities.

Please send your application with the usual documents (in particular a letter of recommendation) preferably via the SecureMail Portal of TU Dresden https://securemail.tu-dresden.de as a PDF document to cindy.roehling@tu-dresden.de or by mail to TU Dresden, Fakultät Mathematik, Institut für Wissenschaftliches Rechnen, z. H. Frau Cindy Röhling, Helmholtzstr. 10, 01069 Dresden. The application deadline is 31.01.2020 (stamped arrival date of the university central mail service applies). Please submit copies only, as your application will not be returned to you. Expenses incurred in attending interviews cannot be reimbursed.

Reference to data protection: Your data protection rights, the purpose for which your data will be processed, as well as further information about data protection is available to you on the website: https://tu-dresden.de/karriere/datenschutzhinweis