

Doctoral Position

Space-Time Finite Elements for Efficient Simulation of Manufacturing Processes

Simulation techniques have become an important instrument for the development, design and quality assurance of engineering components. Since its foundation in 2004, our institute conducts active research at the interface between mechanical engineering and applied mathematics. Our main focus is the development and implementation of numerical methods, including novel use of unstructured space-time meshing for moving interfaces and changing topologies. Currently, we are searching for a new doctoral candidate in the area of modeling and numerical methods for flow simulation for diverse manufacturing processes. Applications in the Collaborative Research Center SFB 1120 Precision Melt Engineering are the focus of this research. The investigation is to be performed in close collaboration with academic and industrial partners.

Your profile: Requirement for this position is a Master's degree in CES, engineering, applied mathematics, physics or a similar subject with a superior academic record.

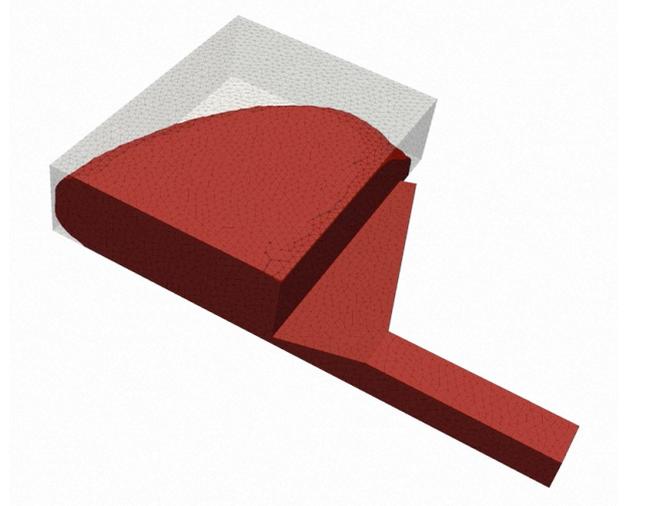
Strong theoretical backgrounds as well as ability to apply it in technical fields are expected. You are open to collaborative software development in a diverse international team. You are capable of independent goal-oriented work style, creativity, and flexibility.

Practical programming experience in Fortran, C or C++ as well as with parallelization (MPI or OpenMP) are of advantage. Familiarity with UNIX operating system would be ideal. We expect you to contribute to general tasks at the institute, such as teaching and advising master or project theses. Language skills in German are preferred but not required.

Our offer: The candidate will be employed as a regular employee and must meet required personal qualifications. This is a full-time position with salary according to German civil service pay scale TV-L E 13 (roughly 3600 euros/month before taxes). The expected appointment period is up to five years, with an initial appointment for one year.

At our chair, we consider serious and reliable research an important task. At the same time, we can offer you to become part of a very social and well-functioning team of currently roughly 20 members. Especially for international students, open doors and regular social events help become acquainted with the German culture quickly. Furthermore, we can assure you that we will support your personal development in all ways possible, thus giving you a good starting point for a future career in both academia or industry. Feel free to contact us for further information!

German and English calls for applications can be found in RWTH Jobbörse under IDs 32864 and 32865.



Simulated plastic melt filling a three-dimensional cavity discretized with space-time pentatope elements.

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Starting date: as soon as possible and not later than March 2021