The Chair for Analysis and Modelling at the Technical University of Munich has a vacancy for a
PhD Student in Model Reduction and Coarse-Graining Techniques
(m/f/d, for up to four years, 50% position).

We are looking for a PhD student interested in working interdisciplinarily between applied mathematics and engineering at the TU Munich. The broad area of the project is the development and the analysis of coarse-graining techniques, for example from molecular models to partial differential equations. The position is based in the TUM Department of Mathematics, in the group of Prof. Johannes Zimmer, with Prof. Phaedon-Stelios Koutsourelakis from the TUM Department of Engineering Physics & Computation as project partner.

The PhD topic will be in the area of scale-bridging techniques, where efficient computable models are derived from finer, yet computationally less tractable models. Specific questions to be studied include the analysis of coarse-graining methods with tools from applied or stochastic analysis; the derivation of error bounds to specify the model uncertainty; the comparison and implementation of coarse-graining approaches; applications to materials modelling. The precise topic will be adjusted according to the successful candidate's interests.

The ideal candidate will have an excellent Master / Diploma, in mathematics, engineering, or a related discipline. Scientific curiosity, a high motivation and a commitment to scientific excellence are a prerequisite. Programming experience is advantageous. Solid English skills, both oral and in writing, are expected. Proficiency in German is not required.

The position is a part-time position (50%) for up to 4 years, paid according to the Federal German pay scale TV-L. The actual salary depends on academic experience, tax classification etc. Travel support for attending conferences, workshops, etc. will be available.

If you have any questions about the position, please contact Johannes Zimmer: jz@ma.tum.de

Applications should include:
- Cover letter/Motivation letter (max. 1 page)
- CV
- Complete set of academic transcripts of records (German or English)
- Transcripts of records of last secondary school degree, e.g., Abitur (German or English)
- If available, contact details for up to two references

Please send the application as a **single PDF document** via e-mail to Angelika Hass at hass@ma.tum.de, with "PhD M6" as the subject line.

Applications will be reviewed starting from 15 July 2022 until the position is filled.

As an equal opportunity and affirmative action employer, TUM explicitly encourages applications from women as well as from all others who would bring additional diversity dimensions to the university's

research and teaching strategies. Preference will be given to candidates with disabilities who have essentially the same qualifications.

Find out more about us at www.tum.de.