The Institute of Applied Mechanics offers 3 full-time fully funded PhD positions within the CRC project Computational Electric Machine Laboratory for 4 years, 40 hours/week, starting as soon as possible.

We are looking for motivated and dedicated candidates interested in modeling and/or numerical simulation of challenging engineering problems. We are a motivated team with the ambition to conduct innovative interdisciplinary research. These particular projects of the CRC focus on the development of an advanced isogeometric framework for the analysis of electric drives and space-time boundary element formulations for the noise and vibration of electric drives.

YOUR TASK
The doctoral candidate will be part of the Collaborative Research Centre (CRC) Computational Electric Machine Laboratory. This first German-Austrian Transregio CRC, research groups from TU Darmstadt, JKU Linz, and TU Graz, want to achieve a paradigm shift in the design and development of electrical machines. The candidate's contribution shall lead to a doctorate and focus on the following topics:

Project 05 Noise and Vibration of Electric Drives: Space-Time Boundary Element Formulations
• Simulation of noise and vibration with time-domain boundary element method (BEM)
• Fast and data-sparse methods for vibration of electrical machines

MORE INFO: https://www.tugraz.at/go/crc-schanz

Project 03 Advanced Isogeometric Framework for the Analysis of Electric Drives
• Adressing generic obstacles of the integration of design and simulation
• Discretisation for simulation and optimisation with accurate and CAD-compatible spline models
• Developing a flexible geometry handling including topological changes

MORE INFO: https://www.tugraz.at/go/crc-marussig

REQUIREMENTS
Completed master's degree in the field of engineering, computer science, software development, applied mathematics, or similar.

DESIRED QUALIFICATIONS
Very good knowledge of numerical methods and computer-aided geometric design, good programming skills (e.g., C++ or Matlab) and excellent English language skills.

SALARY
Job Grading "B1" according to the collective bargaining agreement of universities; monthly minimum salary € 3.058,60 gross (14x per year); previous experience will be taken into account on the basis of the collecting bargaining agreement.

Graz University of Technology supports affirmative action. Therefore, women are particularly encouraged to apply.

APPLICATION
Please send your application documents, CV and a motivation letter (half a page) via email to:
Institute of Applied Mechanics, Graz University of Technology, Technikerstraße 4/II, 8010 Graz, Austria
Project 03: Ass.Prof. Dr. Benjamin Marussig - marussig@tugraz.at
Project 05: Univ.-Prof. Dr.-Ing. Martin Schanz - m.schanz@tugraz.at
Screening begins at June 1st, 2022