

Open Doctoral Positions

at the RWTH Aachen University



THE IRTG-2379

Computational methods permeate every aspect of engineering and science, from analysis to discovery and optimization. Their evolution continues at a rapid pace, driven not only by ever faster computing hardware, but also by our growing understanding of the true potential of computer-aided methods. Practical simulations transition from single numerical experiments towards robust predictive tools; models of isolated phenomena evolve into model hierarchies representing complex systems; numerical methods expand to deal with sensitivities with respect to parameters, uncertainties in those parameters and in models themselves. The educational system on all levels must keep up with and foster these advances.

The International Research Training Group builds on a unique and complementary consortium, at RWTH Aachen University with its Aachen Institute of Advanced Study in Computational Engineering Science (AICES), and at The University of Texas at Austin with its Institute for Computational Engineering and Sciences (ICES).

The International Research Training Group (IRTG) „Modern Inverse Problems: From Geometry and Data to Models and Applications“ (MIP) at RWTH Aachen University offers 13 doctoral positions for a three-year structured program.

The positions are funded by the German Research Foundation (DFG) at the payscale TVL 13 (100%). Funding is for 3 years, starting on October 1st, 2018.

MIP currently offers open positions in the research fields of:

- 1) Novel Stabilized Finite-Element Methods for Microstructured and Complex Fluids
- 2) Computational Tools for Chemical Imaging
- 3) Model-Based Generation of Linear Algebra Software
- 4) Boundary Conforming Smooth Spline Spaces for Isogeometric Analysis
- 5) Metric-Based Anisotropic Adaptation for Optimal Petrov-Galerkin Methods
- 6) Methods for Demand-Side-Management in Process and Chemical Industry
- 7) Numerical Reconstruction Techniques for the Boltzmann Equation
- 8) Model Order Reduction for Goal-Oriented Bayesian Inversion
- 9) Model-Controlled Bayesian Inversion for Geophysical Inverse Problems

The IRTG builds on a partnership between the Aachen Institute of Advanced Study in Computational Engineering Science at RWTH Aachen University, and the Institute for Computational Engineering and Sciences at The University of Texas at Austin. Because of this, long research visits at The University of Texas at Austin are planned.

Requirements

- A Master degree (or an equivalent degree) in a relevant field
 - Transcripts for the Bachelor and Master's degrees
 - Excellent written and oral communication skills in English.
- Knowledge of German is not expected.

Procedure

- All applications must include the following documents:
 - curriculum vitae
 - statement of purpose
 - transcript(s) and degree(s) from universities previously attended

Please submit your application as a PDF via e-mail with subject "IRTG 2379 Admission" and your preferred research topic, to: admission@aices.rwth-aachen.de

RWTH Aachen University is certified as a "Family-Friendly University". We particularly welcome and encourage applications from women, disabled persons and ethnic minority groups, recognizing they are underrepresented across RWTH Aachen University. The principles of fair and open competition apply and appointments will be made on merit.