Doctoral and Postdoctoral Positions in Mathematics

The new Collaborative Research Center (CRC) *Sparsity and Singular Structures* (SFB 1481) at RWTH Aachen University seeks talented candidates for doctoral and postdoctoral positions in Mathematics to begin as soon as possible.

The CRC tackles challenging problems in the fields of mathematical foundations of machine learning and of signal processing, numerical analysis, applied analysis, optimization, and algebra. It is driven by 17 scientific subprojects and includes a structured graduate program offering an array of opportunities for academic training and professional development. More information about the SFB 1481, its members, and subprojects can be found at

https://www.sfb-s3.de

Through targeted subprojects and strategic cooperation among the investigators, the CRC will develop new insight into the mathematical foundations of current applied and computational approaches in mathematics, in particular when an underlying sparsity (low complexity structure in high dimensions) can be exploited. Two critical fronts attacked by the CRC are (1) machine learning and signal processing with high dimensional data and (2) partial differential equations (PDEs) with singularities.

We seek excellent, highly motivated candidates with strong mathematical skills in one or more of the named fields to fill several *doctoral and postdoctoral positions associated with the subprojects*. In addition, we offer two *independent postdoctoral positions* that give the candidates the opportunity to develop their own research agenda within the general scope of the research center. These independent postdoctoral researchers are not directly associated to one of the subprojects.

Employment of the doctoral candidates will be three years. The employment duration for the postdoc positions may vary depending on the sub-project and on negotiation, but will be at least two years.

Candidates for the doctoral positions should hold a master's degree in Mathematics (or closely related subject). Candidates for the postdoctoral positions should hold a doctoral degree in Mathematics (or closely related subject). Applications may be submitted before the respective degree is completed, but the degree must be finalized before the start of the position.

Applications for these positions may be written in English or German and should be emailed as a **single pdf-file** to

`s3-info@mathc.rwth-aachen.de`

and include:

- Application form, download here:
  `https://www.sfb-s3.de/open-phd-postdoc-positions`

- Cover letter explaining motivation and specifying research interests

- Curriculum Vitae

- Transcript (list of all courses including grades)

- Copies of degree certificate

- Master's thesis (for doctoral candidates)
  or doctoral thesis (for postdoc candidates)

- Summary of master's or doctoral thesis

Applicants are asked to inform themselves about the spectrum of topics and subprojects of the research center and to state and explain their preferences (including possible supervisors) in their cover letter.

Applicants interested in one of the independent postdoctoral positions should provide an additional document outlining the research agenda that they would like to pursue at the SFB 1481. The planned research should fit within the general scope of the collaborative research center.

In addition to the above, at least one **letter of recommendation** by a senior scientist, commenting on the applicant's qualifications, should be sent directly by the letter writer to the email address above. Additional potential reviewers may be listed in the CV.

We will start reviewing applications on (previous deadline extended)

August 7, 2022.

Later applications will be considered until the positions are filled.

General questions about the CRC or the application process may be sent to `s3-info@mathc.rwth-aachen.de`. Questions about specific subprojects should be sent to the project leaders directly.