**Supervisor:** Kathrin Glau

**Project Title:** Computational Methods for High-Dimensional Problems in Finance using PDE Methods and Deep Learning

Development of new computational tools for high-dimensional problems. This will involve different techniques from numerical analysis and statistical learning. The tools will be developed, implemented and extensively tested numerically and theoretically. We will particularly build on PDE methods and deep learning.

Further characteristics:

- high practical relevance of the topic,
- close collaboration with financial industry is intended,
- interdisciplinary topic involving mathematical finance, numerical analysis, machine learning,

Research group: Two recent publications within the current PhD project with Christian Pötz:


**Further information:** [http://www.maths.qmul.ac.uk/~kglau/](http://www.maths.qmul.ac.uk/~kglau/)

**Requirements:** Strong background in mathematics, strong background in numerics, very good programming skills (Matlab/Python/C++) desired. Prior knowledge of the field of computational finance would be useful, but not required.

**Funding and more information:** The School of Mathematical Sciences of Queen Mary University of London invite applications for a PhD project commencing either in September 2019 for students seeking funding, or at any point in the academic year for self-funded students. The deadline for funded applications is 14 January 2019 (if you wish to be considered for the
Alan Turing Institute studentship) or 31 January 2019 for all other funded studentships.

The application procedure is described on the School website. For further inquiries please contact Dr Kathrin Glau at k.glau@qmul.ac.uk. This project is eligible for full funding, also via the Alan Turing Institute (note the earlier deadline of 14 January 2019), including support for 3.5 years’ study, additional funds for conference and research visits and funding for relevant IT needs. Applicants interested in the full funding will have to participate in a highly competitive selection process.

The project can be also undertaken as a self-funded project, either through your own funds or through a body external to Queen Mary University of London. Self-funded applications are accepted year-round.

The School of Mathematical Sciences is committed to the equality of opportunities and to advancing women’s careers. As holders of a Bronze Athena SWAN award we offer family friendly benefits and support part-time study. Further information is available here. We strongly encourage applications from women as they are underrepresented within the School.

We particularly welcome applicants through the China Scholarship Council Scheme.