

PhD project: Topics in Diophantine Analysis

Department of Mathematics, Stockholm University
Supervisor: Matthew de Courcy-Ireland

I have broad interests primarily in mathematical analysis and number theory. I am open-minded to anything that interests a potential student. A PhD project supervised by me could be connected to some of the topics I have been working on recently:

- sphere packing and covering,
energy minimisation and polarisation,
lattices in high dimensions,
bounds from linear programming and other approaches
- crystalline measures and Fourier interpolation
- Markoff cubic surfaces,
structure of resulting graphs and networks
- quantum systems, Laplace eigenfunctions, random waves

I like it when analytical methods help to approach problems in number theory, and vice versa. Many of the questions I find attractive involve a tension between order and chaos.

This position is funded through the Wallenberg Initiative on Networks and Quantum Information, supported by the Knut and Alice Wallenberg foundation (KAW).

Students hired for this PhD position will be affiliated jointly with the Department of Mathematics (Stockholm University) as well as the Nordic Institute for Theoretical Physics.

Please send me an email for more information.
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