



CITY UNIVERSITY
LONDON

PhD Opportunities at City University in Mathematics



The Centre for Mathematical Science is a relatively small (but expanding) section of the School of Engineering and Mathematical Sciences.

Located near to the City, just south of The Angel, Islington.





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Areas of Research

- ▶ Fluid dynamics
- ▶ Representation theory
- ▶ Mathematical physics
- ▶ Evolutionary biology
- ▶ Risk and Reliability

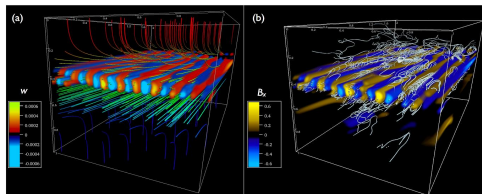




Fluid Dynamics

Prof Peter Daniels, Dr Oliver Kerr, Dr Lara Silvers

- ▶ Thermal convection and pattern formation
- ▶ Double-diffusive convection
- ▶ Magneto-hydrodynamics — solar convection
- ▶ Instability theory



Examining how tub-like buoyant structures are formed



Algebraic Representation Theory

Prof Joe Chuang, Dr Anton Cox, Dr Maud De Visscher

The representation theory of algebras and groups arising in Lie Theory, and the development of a “higher representation theory” through categorification. Examples of these are:

- ▶ Algebraic and quantum groups
- ▶ Weyl groups and Hecke algebras
- ▶ Diagram algebras (eg the Temperley-Lieb and partition algebras)





Theoretical Physics

Prof Andreas Fring, Dr Olalla Castro-Alvaredo, Dr Marcos Alvarez, Dr Vincent Caudrelier, Dr Bogdan Stefanski, (Prof George Mathon)

- ▶ Integral quantum field theory
- ▶ Pseudo Hermitian Hamiltonians in quantum physics
- ▶ String theory and the Ads/CFT correspondence.
- ▶ Low-dimensional magnetic structures





Mathematical modelling of Biology

Prof Mark Broom



Mathematical modelling helps
explain brood parasitism

- ▶ Application of game theory to the mathematical modelling of biological populations, in particular using the concept of Evolutionarily Stable Strategies
- ▶ Modelling the parasitic behaviour on birds



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Risk and Reliability

Prof Martin Newby

- ▶ Probabilistic modelling of risk and reliability
- ▶ Interdisciplinary research





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City University Research Studentships

35 available for the University (in competition)

- ▶ Bursary of £14,500 per year, and no fees, for three year.
- ▶ £1,000 for travel, equipment, etc.
- ▶ Available to UK, EU and overseas students.

Closing date 25 January, 2010 for studentships starting in October, 2010.

