

# MATHEMATICS AND STATISTICS

February 2006

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## WELCOMES AND GOODBYES

- Welcome to Stephane Regnier (room 219) who joined us on December 1st as research assistant in the Solar MHD Group. He works on the 3D magnetic nature of the solar corona with a special emphasis on eruptive events, magnetic reconnection processes and coronal heating. He was previously a post-doc at Montana State University (USA) and at ESA/ESTEC (The Netherlands).
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## CONGRATULATIONS

We have many PhD congratulations to offer in this Newsletter:

- Congratulations to Catarina Carvalho who successfully defended her PhD thesis “Generation and Presentations of Semigroup Constructions: Bruck-Reilly Extensions and P-semigroups” this month. Her external was Nick Gilbert (Heriot-Watt). Catarina is starting work as a Research Assistant at the University of Durham.
- Congratulations to Peter Gallagher, who successfully defended his PhD thesis “On the Finite Generation and Presentability of Diagonal Acts, Finitary Power Semigroups and Schutzenberger Products” in December 2005. The external was Victoria Gould (York).
- Congratulations to Robert Gray, who in January 2006 successfully defended his PhD thesis “A Graph Theoretic Approach to Combinatorial Problems in Semigroup Theory”. The external was Peter Higgins (Essex). Bob has now taken up a Research Assistantship at Leeds.
- Congratulations to Robert Kevis who successfully defended his PhD thesis on “Non-linear MHD simulations of Solar Coronal structures”. The external examiner was Tony Arber from Warwick. Robert is now moving on the work with the MoD at Aldermaston.
- Congratulations to Elizabeth Kimber, who successfully defended her PhD thesis “Cyclically Generated Finite Groups” this month. Her external

was George Havas (Queensland, Australia). Lizzie will take up a teaching position at Chetham's College of Music.

- Congratulations to James McLaughlin who also successfully defended his PhD thesis on "MHD Wave Propagation in the Neighbourhood of Magnetic Null Points". James' external examiner was Michael Ruderman from Sheffield. James is starting work with Leon Ofman at Goddard Space Flight Center in Washington.
- And finally, congratulations to Maja Waldhausen, who successfully defended her PhD thesis "On an Algorithm for Enumerating Generating Sets of Modules over Euclidean Domains" in December 2005. The external examiner was Derek Holt (Warwick).

We wish them all well with their future careers.

- Congratulations to Alan Cairns, who has been awarded a grant of 202K from EPSRC for a project entitled "Beam driven instabilities in magnetised plasmas". Irena Vorgul will be supported by the grant to work on theoretical aspects of this subject over the next three years. The project is part of a collaboration with the Physics department at Strathclyde, where the group led by Alan Phelps has been awarded 295K to carry out related experiments. These awards allow the groups to continue a successful collaboration, also involving Bob Bingham from Rutherford Appleton Laboratory, which has been supported by previous linked grants from EPSRC.
- Congratulations to Alan Hood, who has been awarded 200K by PPARC for compute nodes for the new parallel computer. These nodes will be used by the UK MHD Consortium, a group of UK MHD groups who specialise in 3D MHD simulations.
- Congratulations to Ruth King on the award of her first EPSRC grant: it runs for 2.5 years, starting on 1 October 2006. The award of 119K is to employ a postdoctoral research assistant to work on "Demography and Heterogeneous Data: New Approaches to Ecological Process Models".

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## SEMINARS, LECTURES, RESEARCH VISITS

- Colin Campbell visited the University of Leicester from 15 - 17 January as external examiner for the PhD thesis "Formal languages and the irreducible

word problem in groups” of Ana Fonseca, a research student of Professor Rick Thomas of the Department of Computer Science. Colin Campbell has also just started as external examiner at the University of Stirling.

- Antonio Diaz visited the University of Warwick and gave a seminar on the 16th of January. The visit was very useful, involving interesting discussions with the members on the group, especially Dr. Valery Nakariakov, Dr. Erwin Verwichte and David Pascoe.
- Kenneth Falconer spent December and January at IHES (Institut des Hautes Etudes Scientifique), the French national mathematics research institute near Paris. This provided an excellent environment for research, with plenty of time for concentrated thinking along with mixing with mathematicians with a wide variety of backgrounds. The protracted lunch was a major feature of each day with Fields medalists and others expounding their latest theories by writing formulae on the tablecloth! Whilst in France, Kenneth gave seminars at Université Paris Sud (Orsay) and Université Picardie (Amiens), and spoke at the Jour des Fractales at INRIA (Versailles). He also made short research visits to Université de Nantes, INRIA and Orsay.
- Kenneth Falconer took part in the London Mathematical Society retreat, held over a weekend in late January. The retreat considered the Society’s main objectives for the next 5-10 years and the structures best suited to deliver these objectives. A report will appear in the next LMS Newsletter.
- Dr Laurent Joly from ENSICA (Toulouse, France) visited the Vortex Dynamics Research Group during 11-15 December to finish a paper with Jean Renaud on “The merger of two-dimensional radially-stratified high-Froude number vortices”.
- Delaram Kahrobaei gave a combinatorics seminar at the Institute for Studies Physics and Mathematics (IPM) in Tehran on January 4th. and visited the University of Geneva during the last two weeks of January.
- Thomas Neukirch gave a talk on 8 February entitled “Current Build-up in Topologically Simple Magnetic Fields” in the Applied Mathematics Seminar of the University of Sheffield.
- Lars Olsen gave a seminar in Warwick on Jan 31, and will be the main invited speaker at a workshop on “Normal numbers” in Bonn, giving a series of 5 lectures in April.

- Jean Reinaud gave a talk on “Destructive interactions between two counter-rotating geophysical vortices” at the UCL Rotating Fluids Meeting 2006. Jemma Shipton and David Devlin also attended the meeting. The talk given after Jean’s was by our colleague Riwal Plougonven... and in the audience was Michael Beck who graduated from St Andrews in 2004, and is now completing his MSc at FSU, Tallahassee. So, St Andrews was represented at the meeting in many ways!
- Alex Craik and his wife Elizabeth again visited Japan from 26 November to 12 December. Unlike Elizabeth, Alex got off lightly with just two lectures, a historical one in Tokyo on British university education in the 19th century; and a fluid dynamics seminar at RIMS in Kyoto. Their trip ended with a visit to the holy mountain of Koya-san, with its many temples and mausolea, beautiful and atmospheric in the snow. On December 14-15, jet-lag notwithstanding, Alex participated in an international Workshop on Rogue Waves at ICMS in Edinburgh.
- John Howie has been visiting his family in New Zealand, and was away from 17 January to 19 February.

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## **NEXT ISSUE**

Please send material for the next Newsletter to: [mcsupdate@mcs.st-andrews.ac.uk](mailto:mcsupdate@mcs.st-andrews.ac.uk)