

MATHEMATICS AND STATISTICS

NEWSLETTER

Summer 2009

WELCOME

- To our new research students, Jonathan Fraser, Luke Blackbourn, Hanna Plotka and Kuan Vai Tam.

CONGRATULATIONS

- Congratulations to Caleb O'Loan on the successful defence of his PhD thesis Topics in estimation of quantum channels.
- Congratulations to former PhD student Ian Diamond. The University of Aberdeen has appointed Ian Diamond FBA to be their next Principal and Vice-Chancellor, when his term as chairman of the ESSRC ends. More long-serving members of the Maths Institute may remember Ian in the late 1970s, early 80s when he was doing his Ph.D. with Richard Cormack on Comparisons of Scottish and English school qualifications as predictors of University performance.
- Congratulations to Fiona Brunk who passed her PhD viva on 22nd June.
- Congratulation to Nik Ruskuc and Martyn Quick who have been awarded an EPSRC grant, for 3.5 years to support a research assistant and a Ph.D. student.
- Congratulations to Vanessa Cave who submitted her PhD thesis entitled "Statistical Models for the Long-Term Monitoring of Songbird Populations: A Bayesian Analysis of Constant Effort Sites and Ring-Recovery Data" in September, supervised by Ruth King. She will be leaving CREEM in November to be a statistician at AgResearch (New Zealand). Good luck Vanessa!

SEMINARS, LECTURES, RESEARCH VISITS

- Andy Wright attended the BUKS 2009 meeting in Leuven during April where he gave an invited talk 'Global MHD Eigen modes of the Outer Magnetosphere'. He also attended a meeting at the International Space Science Institute in Bern where he gave an invited talk entitled 'Small Scale Structures in Auroral Field-Aligned Currents'.
- Jean Reinaud and David Dritchel co-organised the 2nd International Conference on High Reynolds Number Vortex Interaction with Xavier Carton and Xavier Perrot (both from the Université de Bretagne Occidentale, Brest, France) 31 August - 2 September. The conference was held in Brest. David Dritchel, Richard Scott and Jean Reinaud all gave a talk.
- Two workshops (introductory distance sampling and advanced distance sampling) were delivered at the Observatory 18-28 August to approximately 30 participants from 9 countries. Instructors on the courses included Prof. Buckland, Drs. Borchers, Bishop, Burt, Rexstad, and Thomas, along with post-graduates Laura Marshall and Danielle Harris.
- Prof. Byron Morgan (Kent), Drs. Ruth King, and Olivier Gimenez (CNRS France) 7-10 September delivered a workshop on Bayesian analysis for population ecology to 24 participants. Prof. Gary White (Colorado State Univ.) delivered a workshop on analysis of mark-recapture data to 14 participants 3-7 August. Dr. Darryl MacKenzie (Proteus Ltd., New Zealand) delivered a workshop on occupancy modelling to 9 participants 9-12 June.
- Magda Carr attended a Fields workshop on 'Dynamics in Environmental and Geophysical Flows' at the University of Waterloo 27th July-29th July where she gave an invited talk on boundary layer flow beneath internal solitary waves. She went to the University of Bergen 24th Aug - 26th Aug where she gave an invited talk on the same topic (as in Waterloo) and discussed potential future collaboration and funding opportunities. Finally, she gave an invited seminar in the Applied Mathematics Department at the University of Nottingham 23rd Sept on stability characteristics of internal solitary waves.
- Thomas Neukirch visited NASA Goddard Space Flight Center, Greenbelt, MD from 24 Aug to 28 Aug 2009 to continue his collaboration with Dr

Michael Hesse (Chief, Space Weather Lab) and colleagues on collisionless reconnection.

- From 7 Sep to 11 Sep 2009, Thomas Neukirch took part in the second workshop of the team “Magnetic reconnection and particle energization: synergy of in situ and remote observations” at the International Space Science Institute (ISSI) in Berne, Switzerland.
- On 3 September, Alex Craik spoke at a Discussion Forum at the Royal Society of Edinburgh on “Engineering Scotland and Japan: Past, Present and Future”. This was part of the nationwide “Japan-UK 150” series of events celebrating “150 years of friendship between Japan and the UK”. His talk was on “Science and Technology in 19th Century Japan: the Scottish Connection”.
- In March Peter Jupp attended a Workshop on ‘Data Analysis using Computational Topology and Geometric Statistics’ at the Banff International Research Station (in Banff, Alberta). He was delighted by (i) the plentiful blackboards, (ii) the contrast in temperature between the air (-27 C) and the hot springs (38 C), (iii) the knowledge that Hodge theory can be extended to metric spaces and that it is useful in the analysis of high-dimensional data sets. In July he attended the Workshop on Geometric and Algebraic Statistics at the Open University, where he established his Bayesian credentials by giving a talk on ‘An intrinsic van Trees inequality’.
- Clare Parnell has had a busy summer and has given invited talks at the 6th International Magnetic Reconnection Workshop, Fairbanks, Alaska, USA at IAGA2009, Sopron, Hungary and SOHO23, Arcadia, USA. She also chaired two sessions at IAGA2009.
- Groups St Andrews 2009 in Bath was held 1st to 15th August. As well as the Bath local organisers, the St Andrews organisers were Colin Campbell, Martyn Quick, Edmund Robertson and Colva Roney-Dougall. Colva gave a talk on ‘Maximal subgroups of finite group’, as part of the Cannon & Holt Special Day held on the Tuesday of Week 2 and Martyn talked on ‘Growth of the number of generators of direct products’. Other St Andrews people present at the conference include: Max Neunhoffer; John McDermott, Alexander Konovalov & Steve Linton (all 3 from CIRCA); Atika Ahmed, Hannah Coutts, Jay Ferguson, Jon McDougall-Bagnall, Nina Menezes & Claire Pollard. Talks were given by Alex (“Torsion units in integral group

rings of sporadic simple groups'), Jon ('Groups with every minimal generating set of fixed size') and Max ('Finding normal subgroups of even order').

- Kenneth Falconer gave an invited talk at a workshop on Fractals and Tilings, held in the village of Strobl in the foothills of the Austrian Alps. (Kenneth found enough spare time to get up a couple of lower, but nonetheless precipitous, mountains.) He also gave a plenary lecture at the International Conference on Self-similar Processes and their Applications at Angers in the Loire Valley. This conference took place in a monastery which provided a very nice atmosphere for the meeting.

NEXT ISSUE

Please send material for the next Newsletter to: mcsupdate@mcs.st-and.ac.uk