

MATHEMATICS AND STATISTICS

NEWSLETTER

September 2004

WELCOME

- A warm welcome to Dr Antonio Diaz. Toni is joining us as a postdoc to work on coronal and prominence oscillations. He did his PhD in Palma Majorca, with Ballester and Oliver. He will be sharing an office with Duncan and a flat with Dan. Toni has visited us several times in the past and is a keen footballer.
- Welcome to Dr Riwal Plougonven who has joined the School as a new lecturer in applied mathematics, working in the Vortex Dynamics group. Welcome also to Dr Ali Mohebalhojeh, who was awarded a NERC EMS Fellowship to work on developing a new global circulation model of the atmosphere with members of the Vortex Dynamics group. Finally, welcome to Dr Ersin Ozugurlu, who joins the Vortex Dynamics group as an EPSRC research fellow working with Dr Jean Reinaud for two years on aspects of vortex interactions in the atmosphere and oceans.
- Welcome to Andrew Haynes, Michelle Murray and Antonia Wilmot-Smith who have all started on PhDs with the solar group. Michelle graduated from St Andrews in 2003 and both Andrew and Antonia graduated this year.
- Welcome to Fiona McFarlane, who replaces Alison Kerracher as the Solar Group secretary.
- Welcome to Delaram Kahrobaei, who has joined us as a Temporary Lecturer in Pure Mathematics. After her undergraduate degree in Tehran, she took her PhD at the City University of New York. She will work with the Algebra Group and CIRCA.
- Welcome to Nina Snigireva, who recently graduated at the University of Dublin, and joins the Analysis Group as a research student.

- Welcome to Emanuele Tassi, who is visiting the Solar MHD group up to Dec. 17. Emanuele is from Italy and got his PhD in Bochum for a thesis on exact solutions for magnetic reconnection. Those of you who have been involved in the PLATON network will know him from various meetings (a picture can be found on his web page: <http://www.tp4.ruhr-uni-bochum.de/~tassi/>). Emanuele will work with Eric Priest and Gunnar Hornig on the dynamical accessibility of analytic reconnection solutions which he discovered. He will give an informal talk of his current work next Thursday in the "Reco Club" and a more formal talk in the Wednesday Solar Seminar on November 11.

FAREWELL & GOOD LUCK

- Goodbye to Robert Close who has left to become an accountant with a local firm in Cupar. He has submitted his PhD and is awaiting his viva. We wish him all the best in his chosen career.
- The solar group also said goodbye to Catherine Gerrard and Alison Keracher at the start of September. Cath completed both her undergraduate degree and PhD here in St Andrews and was a post doc with the solar group for several years. Alison has been the solar group secretary for the past 2 years. Cath has taken up Equine Studies, whereas Alison has started a course to become a midwife. We wish them both all the best!

CONGRATULATIONS

- To Ross Bambrey and his partner Nina Marshall (ex St Andrews graduate) who recently announced their engagement. They'll be married at the end of May next year.
- On the 26th September Paul Wood and Mike McEwan organised a charity event that raised £400 for Sport Relief. The challenge was to break the 100m World Record on a Space Hopper (the bouncy balls with handles that kids play on). They broke 3 world records, with the winners all being mathematicians. The men's 100m winner was Barry Ridge in a time of 32.8 seconds, with Dee McDougall winning the women's event in a time

of 39.8 seconds. Paul Wood also set a new world mile record in a time of 14:18.0. Thanks to all who donated or contested.

- Congratulations to David Pontin on the successful defence of his PhD entitled 'Nature of 3D Magnetic Reconnection'. David will shortly be leaving to go to Hamilton University in New Zealand to work with Dr Ian Craig who has often been a visitor to the solar group.
- Daniel Brown on being appointed a lecturer at Aberystwyth. Dan will be leaving at Christmas and we wish him all the best for the future.

SEMINARS, LECTURES, RESEARCH VISITS

- Several members of the solar group attended solar physics summer schools this year. New students Antonia Wilmot-Smith, Michelle Murray and Andrew Haynes all attended the PPARC Introductory Course for New Research Students in Solar-Terrestrial Physics, which was held at the University of Glasgow from 29th August to 3rd September. Prof Eric Priest gave a lecture there on "Magnetohydrodynamics".
- A number of members of the Solar Group recently attended PPARC's Advanced Summer School on Solar Physics, organised this year by Mullard Space Sciences Laboratory but hosted by Royal Holloway College, London (12th to 17th September). Eric Priest and Bernard Roberts were among the lecturers at the school, covering MHD (Reconnection) and MHD (Waves) respectively. Students attending from St Andrews included Gavin Donnelly (who gave a presentation on "Coronal Loop Oscillations"), Rhona Maclean ("Magnetic Breakout in Flares and CMEs: A Topological Approach"), Mike McEwan ("Coronal Oscillations in Stratified Loops") and James McLaughlin ("MHD waves and topology"), as well as the newly starting PhD students Andrew Haynes, Michelle Murray and Antonia Wilmot-Smith. Gavin and Rhona were both awarded bottles of wine for giving particularly interesting presentations. A good time was had by all!
- Professor Dritschel gave seminars at the European Centre for Medium-range Weather Prediction (7/9), the University of Edinburgh (27/9), and the University of Exeter (4/10), on new computational approaches to weather prediction and on wave-vortex decomposition in atmospheric and

oceanic flows. He also acted as the external examiner for the University of Reading's joint Mathematics/Meteorology MSc course (16/9), and as the external PhD examiner for the University of Edinburgh (27/9).

- A/Professor Charlie Macaskill from the University of Sydney has been visiting the Vortex Dynamics group from 16/9 to 30/10, mainly working with Professor Dritschel on the dynamics of vortex lenses or surface vortices in the ocean.
- Dr Murray Elder presented two talks in the US - He spoke on "Counter languages for the lamplighter groups" at the Albany Group Theory Conference in Albany, New York, and "Context-free and counter geodesic languages for Baumslag-Solitar groups" in the Algebra Seminar at the University of Washington, Seattle.
- Paolo Giuliani attended the school "Analysis techniques for turbulent plasmas" held in Calabria, Italy, from September 28th to October 2nd. The school was organized and funded by the network "Turbulence in Space Plasmas, theory, observation and simulation". Paolo gave a Contributed Talk titled "Particle Acceleration in Solar Flare Collapsing Traps". and reported that the food was good, weather was fine and that all got a chance to swim in the sea.
- Between the 1-3rd September the Mathematics Department hosted the 2004 PROM (Prominence Research: Observations and Models) meeting. PROM meetings are designed to be informal discussion meetings which bring together both observers and theoreticians from across the world to discuss common areas of Solar Prominence research with the aim of conducting joint research projects. Funding for these meetings comes from NASA and NSF. The meeting this year was organised by Duncan Mackay who presented a paper on "New Results in Modelling the Hemispheric Pattern of Prominences". Other St. Andrews contributions included, Alan Hood on "New Results in modelling the emergence of flux tubes", Rhona McLean on "A Topological Analysis of the Magnetic Breakout Model of CME's" and Bernie Roberts on "Prominence Siesmology".
- As many of you will know the solar group arranged the SOHO15 conference this year which was held from 6-9 September 2004. In total about 130 delegates attended the conference and swamped Physics. Ineke De Moortel and Daniel Brown were the joint chairs of the LOC, Clare Parnell was on

the SOC and numerous postdocs and students helped out with everything! Alan Hood (as a last minute stand in for Cath Gerrard), James McLaughlin and Clare Parnell all gave talks.

In conjunction with the conference a public lecture, 'The Magic of the Sun and Stars' given by Prof John Brown, Astronomer Royal for Scotland, was held on Tuesday 7th September. It was well attended attracting an audience of around 150 adults and children.

- Andy Wright, Peter Damiano and Alexandra Cran-McGreehin attended the 3rd Alfven Conference in Steamboat Springs, Colorado in August. Andy spoke on "Electron dynamics in Ultra-Low Frequency Alfven waves," Peter's talk was "Hybrid MHD-Kinetic simulations of an Alfven wave pulse," and Alexandra's was entitled "Electron acceleration in the downward auroral current region." The venue (Steamboat Springs) was named after the noise that a local geyser used to make. The conference timetable also allowed time for hiking in the Rockies, where we reached some natural hot springs that are popular for bathing. (Swimwear was optional in the evening.)

NEXT ISSUE

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