

SCHOOL OF MATHEMATICS & STATISTICS

NEWSLETTER

December 4, 2002

CONGRATULATIONS

to Danielle Bewsher, on the successful defence of her PhD thesis 'Transition Region Blinkers'. The convenor of the examining committee was Thomas Neukirch and Dr Gerry Doyle (Armagh Observatory) was the external examiner; Danielle's thesis was supervised by Alan Hood (with assistance by Clare Parnell).

to Richard Ryan, on the successful defence of his PhD thesis 'An Investigation of Rotating Magnetospheres'. Richard has been supervised by Thomas Neukirch and his examiners were Andrew Collier Cameron (Physics and Astronomy, internal) and Gunnar Hornig (Bochum, external). Richard will soon move to Strasbourg where he obtained a PostDoc position at the Observatory within the PLATON Research Training Network.

to our former postgraduate students Cleonice Bracciali, who married Sergio in Brazil on 20 July, and Halil Oruç, who married Ozlem in Turkey on 14 September. George and Rona Phillips attended Halil's wedding, and George was Halil's best man.

to Charles Paxton on sharing the Ig Nobel Prize for Biology 2002 (see below).

SEMINARS & LECTURES

Colin Campbell, John Howie, Edmund Robertson, Nik Ruskuc, Catarina Carvalho and Nelson Silva attended the Workshop on Semigroups and Languages in the Centre of Algebra of the University of Lisbon, Portugal from 27 to 29 November. Recent St Andrews students Isabel Araujo, Luis Descalco and James Mitchell also attended.

John lectured on Rank and Status in Semigroup Theory, Nik lectured on Generators and Defining Relations for Unions of Semigroups, James lectured on Generating the Full Transformation Semigroup using Order Preserving Mappings, and Luis lectured on Subsemigroups of the Bicyclic Monoid.

In November, Lars Olsen gave lectures at a research course for German Ph.D. students at University of Jena. Lars also gave a lecture at the University of Manchester's seminar series on Ergodic Theory and Dynamical Systems, on November 27.

Paul Wood gave a talk entitled "Flux cancellation in prominence formation" at a PROM meeting in Washington DC on 11th November.

Alex Craik gave a seminar at R.I.M.S., Kyoto University in late September, and met former visitor, Katsuya Hirata to finalise the text of a joint paper.

In October, David Dritschel also visited Japan, giving several lectures in Kyoto and Tokyo (but he hasn't supplied details in time...).

FAREWELL & GOOD LUCK

to Simon Wood, who leaves at the end of December to take up a Readership at Glasgow University.

to Danielle Bewsher who will be starting work at the Goddard Space Science Center, Washington DC in January on a fellowship funded by the European Space Agency. Danielle has recently completed her thesis and will be leaving the School before Christmas.

NEWS

Alan Cairns, with co-investigator Bob Bingham from Rutherford Appleton Laboratory (and an Honorary Professor in St Andrews), has been awarded an EPSRC grant of £84,757 for a project entitled “A new mechanism for high power radiation based on coherent resonance radiation”.

This project has arisen from work carried out by Alan and Bob over the past couple of years in which they have looked at a possible explanation for radio emission from the auroral region of the Earth’s magnetosphere and from certain stars. Their theory has suggested that when a beam of electrons moves along magnetic field lines into a region of stronger field it becomes unstable and can emit coherent cyclotron radiation.

Since their estimates suggest that a substantial fraction of the beam energy could be converted into electromagnetic energy and that the mechanism is equally applicable to much smaller scale systems, they teamed up with Professor Alan Phelps at Strathclyde University to propose a joint programme. Alan Phelps, who is an expert on systems for generation of high power microwaves, has been awarded a linked grant to enable him to build a laboratory device utilising this mechanism. Over the two year duration of the grant, beginning in April 2003, the St Andrews group will work on theoretical modelling while the Strathclyde group works on the construction and operation of the experimental apparatus. The aim is to investigate the potential of the device for production of high power radiation in the GigaHertz to TeraHertz range. If a compact, tunable and efficient device of this sort can be developed then there may be applications to a variety of areas, including radar, communications, and materials processing.

RUWPA NEWS

At the beginning of October, Charles Paxton was presented with the Ig Nobel Prize for Biology 2002, for his partial responsibility for the paper (Courtship Behaviour of Ostriches (*Struthio camelus*) Towards Humans Under Farming Conditions in Britain) that appeared in the world renowned journal "British Poultry Science" in 1998.

The "Igs", named after Alfred Nobel's little known relative Ignatius Nobel, are given each year for science "that cannot or should not be repeated". Still at least Charles can say he has now given invited talks at Harvard and MIT and met some 'real' Nobel Prize laureates.

EDITOR'S NOTE

I have taken over the editing of the School Newsletter for a strictly limited period only. Prospective future editors should note that the task has taken only about half-an-hour. The next issue will be in late January, if I receive enough news. Remember that if your news is not in, it is because you didn't send it to me! Please send any material for the next Newsletter to mcsnews@mcs by 20th January.

From the History of Mathematics Archive:

Cambridge and Scotland

‘When I went to the University of Cambridge, I found that the course there for the ordinary degree in Arts was greatly inferior in quality to the Scottish one. On the other hand, the courses in honours were on a very much higher standard, although they suffered greatly from the chaotic organisation of the English Universities... I might liken the difference between the English and Scottish University courses at that time to the difference that then existed between their national styles of cookery. The Scottish cuisine was characterised by lightness and variety, the English cuisine was noted for plenty and excellence of material, but lacked variety, and the defective preparation of its dishes often left them heavy and indigestible.’ [G. Chrystal. Promoter’s Address to Graduates of Arts, University of Edinburgh. *The Scotsman*, Edinburgh 15 April 1892.]