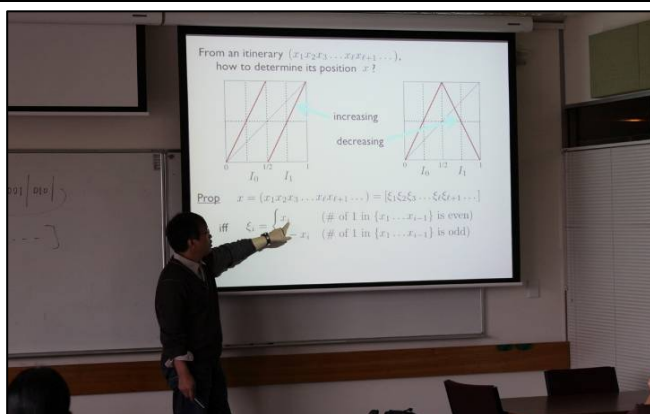


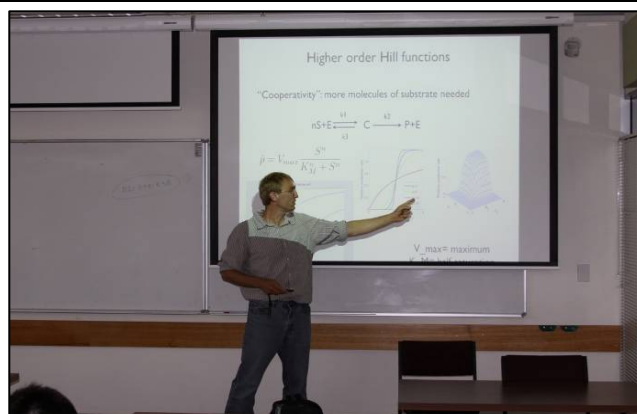
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August 2010

DYNAMICS WORKSHOP



Hiroshi Kokubu (Japan)



Tomas Gedeon (USA)

Erskine visitor, **Konstantin Mischaikow** organised a workshop on Computational Homology and Dynamics in the department from Friday 11 August to Sunday 13 August. Seven speakers from the USA, Japan and Poland gave lectures on topological methods for analysing data sets that arise from dynamical systems. The talks, which were aimed at senior undergraduate and postgraduate students, covered applications to gene regulation, neural networks, image processing and fluid flow, as well as the underlying mathematics. The local organisers were Ben Martin, Rua Murray and Mike Plank. Thanks are due to Penny, Pauline, Julie and Sarah for help with the practical arrangements and for dealing with the influx of visitors. We are also grateful to NZIMA and the department for financial support.

- Ben Martin

NZ INFORMATICS OLYMPIAD TEAM

Congratulations to the NZ Informatics Olympiad Team, which won 3 medals, two of which went to Christchurch students, in Canada earlier this month. The University of Canterbury is one of the sponsors of the team and two of the students are currently undertaking STAR courses at the university – Jamie McCloskey is doing STAR Maths with Liz Ackerley, having completed various other papers at UC over the past few years, and Logan Glasson is doing the COSC course.



L to R: Logan Glasson, Boris Pfahringer & Jamie McCloskey

OBITUARIES

Sad news that statistician **John Nelder** died on 9 August in Luton and Dunstable Hospital, England. John was a leader in statistics and best known for his work in developing generalized linear models, hierarchical general linear models and for his work with GenStat.

– Jennifer Brown

Julian Besag died in Bristol on 6 August at the age of 65. Julian made an important contribution to spatial statistics for which he received the Guy medal in silver by the Royal Statistical Society. Like John Nelder, he was a Fellow of the Royal Society.

- Marco Reale

CONGRATULATIONS

Congratulations to our former PhD student **Hannes Diener**, who recently became engaged to Sarah Kerr.

Our best wishes to **Miriam Hodge** (PhD student and, latterly, Assistant Lecturer), who will be leaving the department on 15 October to take up a new position in Abu Dhabi, where she will be involved in setting up a new government statistics department for the United Arab Emirates. Miriam says that if you are looking for a transit stop en route to Europe, visitors are always welcome.

Congratulations to **Blair Robertson**, who has been awarded a publication scholarship by the College of Engineering to submit some of his PhD thesis results for publication.

Charles Semple will be visiting the University of Oxford (Department of Statistics) next year under the auspices of the Oxford / Canterbury exchange programme.

CONFERENCES & VISITS

James Degnan: research visit by Bjarki Elton, Oxford University, 21 October – 7 November 2010.

Shannon Ezzat: research trip to visit Dr Christopher Voll at the University of Southampton from 6 June to 20 July, as well as attending the Postgraduate Group Theory Conference at the University of St Andrews from 28 – 30 June, where he gave a talk entitled *Representation Growth of the Heisenberg Group over Quadratic Integers*.

Rua Murray: to give a talk entitled *Polynomial Decay of Correlations* at the NZMS Colloquium in Dunedin from 6 to 12 December 2010.

Raazesh Sainudiin: to give a plenary talk entitled *Randomised Algorithms over a Dense Tree of Trees for Massive Metric Data Streams* at the International Congress of Mathematicians' Satellite International Conference on Probability and Statistics, ICMSIC 2010, at Sambalpur University, Sambalpur, Orissa, India, 1 - 3 September 2010. (Joint work with Jennifer Harlow, Dominic Lee and Gloria Teng.)

PAPERS ACCEPTED

Rea, W., Reale, M., Brown, J. (2010) *Long Memory in Temperature Reconstructions* (Climatic Change)

PAPERS PUBLISHED

Rea, W., Reale, M., Brown, J., Oxley, L. (2010) *Long Memory or Shifting Means in Geophysical Time Series* (Mathematics and Computers in Simulation). Available online 10.1016/j.matcom.2010.06.007

Raazesh Sainudiin with Lea Popovic, a probabilist from Concordia University in Montreal. The photo was taken in the Chennakesava (meaning handsome vishnu in Kannada) at Halebudu, which was built in 1117 CE.

Raaz reports that his talk at the International Congress of Mathematicians' Satellite Meeting in Bangalore went well, mainly due to his motivating example of the Adam-Eve story of the NZ Black Robins, which all descend from one breeding pair in the early 1980s.



CANTERBURY YOUNG STATISTICIANS (CYS)



Recently, Statistics New Zealand hosted the first gathering of the Canterbury Young Statisticians (CYS) – 18 from UC and 8 from Statistics New Zealand, along with 2 not-so-young statisticians. A young statistician is loosely defined as someone interested in learning about statistics, or someone studying statistics, or someone who has been working as a statistician for less than 5 years. The meeting started with Rebecca McGirr and Guan Yu ('Fish') Zheng presenting the talks they gave at the recent NZSA conference in Palmerston North. Afterwards, the young statisticians discussed ideas for further CYS gatherings, over pizza. The gathering ended with a guided tour of Dollan House. The UC students got a real charge out of this meeting and have expressed their appreciation to the organizers, who included Becky Collett and Andrew Richens, as well as 'Fish' and Rebecca. For those interested in further CYS events, see the CYS Facebook page: <http://www.facebook.com/group.php?gid=146642402025037&ref=ts>.

- Carl Scarrott

FREE PUBLIC LECTURE

by Professor Ben Green
2010 Forder Lecturer
Herchel Smith Professor of Pure Mathematics
University of Cambridge, UK

Adding Prime Numbers

Prime numbers are the building blocks of multiplication. However, understanding their additive properties leads to fascinating mathematics, as well as to some extremely venerable open problems.

Tuesday 7 September
7.00 - 8.00 pm
Laws 108 lecture theatre
School of Law
University of Canterbury

Sponsors: New Zealand Mathematical Society,
London Mathematical Society and the Department
of Mathematics and Statistics, University of
Canterbury.



The Wind Beneath Her Wings!

Julie as you've never seen her before – contemplating jumping out of a perfectly serviceable aircraft at 15,000 feet over Lake Taupo and falling at over 200kph towards the ground!

Julie's son Henry and 13 year old daughter Alice also undertook successful tandem parachute jumps.

PROBLEM CORNER

This week's problem derives from an old concern that probably most of us had as undergrads, about the con/divergence of series.

First we learn that $\sum (1/n)$ is divergent, but that $\sum(1/n^2)$ is convergent. Then, narrowing the gap somewhat, we learn that $\sum (1/n.\log(n))$ is divergent, but that $\sum(1/n.(\log n)^2)$ is convergent. Then this is narrowed further to $\sum(1/n.\log(n).\log \log(n))$ and $\sum(1/n.\log(n).(\log \log(n))^2)$; and so on, iteratively. The proofs by the integral test are almost unbearably cute.

One is then tempted to wonder, that as the logarithm is iterated endlessly, narrowing the gap between con/ and divergence, does this hone down to engulf every possible reasonably monotone function? Of course it doesn't, and our puzzle concerns a series that is wedged in between these two sequences of cases.

We look at $\sum(1/n.\log(n).\log \log(n).\log \log \log(n).\log \log \log \log(n)....)$ where we adopt the convention that $\log x = \max(1, \log(x))$. This ensures that we never get nasty negative or infinite terms, and that the terms being summed are always effectively finite products - but incredibly slowly decreasing.

The weekly problem is - does this final series converge or diverge? As always, a chocolate bar to the first correct proof either way.

- Bill Taylor

WELCOME TO OUR DEPARTMENTAL VISITORS

	<u>Organization</u>	<u>Host</u>	<u>From</u>	<u>To</u>	<u>Room</u>	<u>Extn</u>
David Baird	Ag Research	J Brown	23/8/10	14/11/10	610	8371
Allan Wilms	Guelph University	D Wall	30/8/10	12/12/10	703	8878