Weekly Bulletin
Research School of Physics and Engineering
THE AUSTRALIAN NATIONAL UNIVERSITY

Volume 35 Number 17
8 – 14 May 2009

SCHOOL SEMINARS

Nuclear Physics Seminar
Monday 11 May 2009
11.15am
"Nuclear Reaction Studies at the China Institute of Atomic Energy"
by Dr Chengjian Lin, Nuclear Physics
Nuclear Physics Seminar Room
All Welcome!

Public Lecture
Monday 11 May 2009
6.00pm–7.15pm
"The Science of Climate Feedbacks"
Featuring:
Janette Lindesay, Deputy Director of the Fenner School for Environment and Society, ANU
Steven Lade, Nonlinear Physics Centre, ANU
Website: http://climateactioncanberra.org/
Enquiries: Steven Lade on 6125 9077
Venue: Haydon-Allen Tank

ACQAO Seminar
Thursday 14 May 2009
2.00pm.
"Laser Frequency Locking to an Optical Cavity using LQG Control"
by Dr Michèle Heurs, Research Fellow School of Information Technology and Electrical Engineering UNSW@ADFA room, ANU Physics Building Science Rd,

FROM THE FACILITIES & SERVICES MANAGER

Drain repair near Welding Bay

The storm water drain near the rear door to the Mechanical Workshop and Welding Bay needs extensive repair work. From Monday 11 May the rear access to the Mechanical Workshop will be closed off to all vehicles and, possibly, pedestrian access for short periods, to enable excavation work to be undertaken. Please take care in this area while this work is performed.

SALTIEL_OBITUARY

Dear Colleagues,
31 August 1947 – 7 May 2009
We have the sad duty to inform you that Professor Solomon Saltiel passed away unexpectedly on Thursday, 7 May 2009. He continued to work tirelessly until his last breath for the good of his family, students and colleagues. The funeral will take place on Sunday, May 10, 2009 at 12:30 p.m. in the Central cemetery of Sofia.
We all will miss him greatly!

STAFF MOVEMENTS

Professor George Dracoulis will be away from the Department from 9 – 12 May during which time he will be attending, as an invited speaker, the Council for the Economic Development of Australia: Uranium Mining and Nuclear Power Conference (CEDA) being held in Perth.

HDLT VISITOR:

Dr Sabrina Pottinger from the University of Surrey (UK) is visiting the Space Plasma, Power and Propulsion group from 2 – 19 May 2009 to work on the development of a prototype Helicon Double Layer Thruster suitable for space use and funded by EADS-Astrium. She will be working with A/Professor Christine Charles, Professor Rod Boswell and the team of post-graduate students.

WELCOME

The Department of Theoretical Physics welcomes Dr Ali Imaanpur (IPM, Tehran) as a Visiting Research Fellow (until January 2010). Dr Imaanpur will be working with Professor Bouwknegt on research projects in the area String Theory and Supersymmetric Gauge Field Theories.

Please welcome visitors to the Department of Nuclear Physics. Mr Mario De Cesare a PhD Student from the Second University of Naples,

Italy, will be here from 6 May – 29 June to collaborate with members from the AMS group. Visiting Fellow Dr Kushal Kalita (BOYSCAST Fellowship) will be visiting from 11 May 09 – May 10 to carry out collaborative research with members of the Fission Fusion Group.

GRANTS & AWARDS

Department of Innovation, Industry, Science & Research
Program Number: 03376
Title: Green Car Innovation Fund
E-mail: hotline@ausindustry.gov.au
Program URL:
http://www.ausindustry.gov.au/Manufacturing/GreenCarInnovationFund/Pages/GreenCarInnovationFund(GCIF
The sponsor provides funding for research, development and early stage commercialisation of green automotive technologies under its $1.3 billion Green Car Innovation Fund. The fund will provide assistance, on a co-investment basis, over ten years to design, develop and manufacture low-emission, fuel-efficient cars and components in Australia. It is part of the Federal Government's $6.2 billion New Car Plan for a Greener Future.
Link to full program description:
http://australia.infoed.org/spin/spin_prog.asp?03376

Group of Eight
Program Number: 97660
Title: Go8 Australia - Germany Joint Research Co-operation Scheme
E-mail: kerrie.thornton@go8.edu.au
Web Site: http://www.go8.edu.au
Program URL:
http://www.go8.edu.au/europe/research/index.php?option=com_content&task=view&id=79&Itemid=174
The scheme will support exchanges for Australian researchers to spend time at partner institutions in Germany and for collaborating German researchers to spend time at Go8 universities.
Deadline(s): 30/06/2009
Link to full program description:
http://australia.infoed.org/spin/spin_prog.asp?97660

Anglo-Australian Observatory
Program Number: 88657
Title: Student Fellowship Program
E-mail: ahopkins@aao.gov.au
Program URL:
http://www.aao.gov.au/AAO/students/aaosf.html
The sponsor provides fellowships for UK and Australian students to study at the Anglo-Australian Observatory.
Deadline(s): 31/08/2009
DEADLINE NOTE
The deadline for Southern Hemisphere students is August 31. The deadline for UK Students is February 15.
Link to full program description:
http://australia.infoed.org/spin/spin_prog.asp?88657

National Research Foundation of Singapore
Program Number: 98361
Title: Research Fellowships
E-mail: afian_anwar@nrf.gov.sg
Web Site:
https://rita.nrf.gov.sg/NRF_RF_2009/default.aspx
The National Research Foundation (NRF) Research Fellowship Scheme is a globally competitive programme aimed at attracting, recruiting and rooting outstanding young scientists and researchers to conduct independent research in Singapore. Applicants should be under the age of 40 years at the date of application, and within 10 years post PhD.
Deadline(s): 06/09/2009
Link to full program description:
http://australia.infoed.org/spin/spin_prog.asp?98361

Wolf Foundation
Program Number: 14735
Title: Wolf Foundation Prizes in the Sciences and Arts
E-mail: info@wolffund.org.il
Program URL:
http://www.wolffund.org.il/main.asp?idMain=20

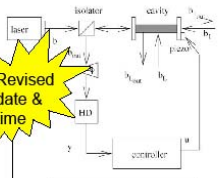
Five or six prizes of $100,000 each are awarded annually to outstanding scientists and artists, irrespective of nationality, for achievements in the interest of mankind and friendly relations among peoples. In science, annual awards are made in agriculture, chemistry, mathematics, medicine, and

physics. Arts prizes in architecture, music, painting and sculpture rotate annually.
Deadline(s): 31/08/2009
Link to full program description:
http://australia.infoed.org/spin/spin_prog.asp?14735

American Nuclear Society
Program Number: 59759
Title: Landis Public Communication and Education Award
E-mail:
Web Site: http://www.ans.org
Program URL: http://www.ans.org/honors/va-pubcomm
The sponsor makes an award to recognize a person for outstanding efforts, dedication and accomplishment in furthering public education and understanding of the peaceful applications of nuclear technology.
Deadline(s): 01/08/2009
Link to full program description:
http://australia.infoed.org/spin/spin_prog.asp?59759

"Laser Frequency Locking to an Optical Cavity using LQG Control"

UNSW@ADFA
CANBERRA • AUSTRALIA



Revised date & time

Abstract:

This talk will guide you through the steps we undertook to apply LinearQuadratic Gaussian (LQG) control to a general quantum optics controls problem.

LQG optimal control is inherently multi-variable and therefore takes care of nested loops and multiple sensors. There is a concept of optimality involved (the most "bang for your buck"). To show feasibility (our primary objective) we tackled the ubiquitous problem of cavity locking with techniques of modern control (Linear Quadratic Gaussian,Kalman filtering and model reduction).

Our goal was to develop an approach to standard quantum optical problems that made use of the power of modern control. This could potentially lead to applications in general quantum optics experiments or other large scale facilities with highly complex control tasks such as gravitational wave detectors, quantum information processors, quantum communication schemes etc…

In the course of this presentation I will also talk about homodyne locking, our new approach to simultaneously frequency locking an OPO and measuring its phase quadrature output.

See you in the ACQAO seminar room, ANU Physics Building Science Rd,

Thursday 14th May @ 2pm.

Dr Michèle Heurs
Research Fellow

School of Information Technology
and Electrical Engineering
UNSW@ADFA
Australian Defence Force Academy, Northcott Drive
Canberra ACT 2600

AUSTRALIAN RESEARCH COUNCIL
CENTRE OF EXCELLENCE FOR
QUANTUM-ATOM OPTICS

Dear Colleagues,

August 31, 1947 – May 7, 2009

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ANU What's On @ ANU

Billboard Event

Public Lecture
The Science of Climate Feedbacks

Featuring:
Janette Lindesay, Deputy Director of the Fenner School for Environment and Society, ANU
Steven Lade, Nonlinear Physics Centre, ANU

What's all the fuss about feedbacks? For that matter, what is a feedback? Why is it so bad?

At the recent climate science conference in Copenhagen, many scientists claimed that future climate change is likely to be worse than previously expected. A major reason for this worsening of opinion was that many feedbacks in the climate system, previously ignored or purposefully underestimated for lack of knowledge, are becoming better understood.

This forum will review, for a non-technical audience, what feedbacks and non-linearities are, why they can lead to 'runaway change' and other drastic effects in systems such as the climate, what recent scientific developments have led to better understanding of climate feedbacks, and how this affects predictions of likely future climate change. Time will also be available for questions.

Hosted by Climate Action Canberra.

Speaker/Host: A/Prof Janette Lindesay, Fenner School, ANU; Steven Lade, Nonlinear Physics Centre
Venue: Haydon-Allen Tank
Date: Monday, 11 May 2009
Time: 6:00 PM - 7:15 PM
Website: http://climateactioncanberra.org/
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