

ESMTB Infoletter

March 2008



www.esmtb.org

Dear colleague

with this ESMTB Infoletter you receive information about conferences, workshops, schools and open positions. Please send relevant information to be included in the next ESMTB infoletter to info@esmtb.org.

Best regards, Andreas Deutsch
Dresden, 17th of March 2008

News

ESMTB supports travel to mathematical/theoretical biology meetings

ESMTB will give financial support to travel to mathematical/theoretical biology meetings in 2008. See guidelines on http://esmtb.org/downloads/ESMTB_support2008.pdf

Conferences

International Conference on Differential Equations and Applications to Mathematical Biology at Le Havre, France

Date: 2008-06-23 to 2008-06-27

In the new century mankind faces more challenging environmental and health problems, such as pollution, invasion of species, emerging of new diseases (West Nile, SARS, Anthrax, etc.), and surging of existing diseases (AIDS, cancer, etc.). Differential equation models have been used to study many biological, epidemic and medical problems, and nonlinear and complex dynamics have been observed which can help us to better understand the problems. The conference will bring together international researchers in differential equations and mathematical biology community to communicate with each other about their current work. The topics of the conference include various types of differential equations and their applications to biology and other related subjects, such as, ecology, epidemiology, medicine, etc.

<http://litis.univ-lehavre.fr/MathBioConf/>
<mailto:pierre.magal@univ-lehavre.fr>

ECMI 2008 at University College London, UK

Date: 2008-06-30 to 2008-07-04

ECMI 2008 will reinforce the role of mathematics as an overarching resource for industry and business interpreted in their broadest sense.

It will attract leading figures from business, science and government, promote the application of innovative mathematics to industry, and emphasise industrial sectors that offer the most exciting opportunities for mathematicians to provide insight and new ideas.

The European Consortium for Mathematics in Industry has the following aims:

- To promote the use of mathematical models in industry.
- To educate and train mathematicians to work collaboratively.
- To operate on a European scale.

This meeting will be the 15th European Conference on Mathematics for Industry organized by ECMI.

10 March 2008

Early Bird registration deadline

20 June 2008

Closing date for registration and payment

<http://www.ecmi2008.org/>
<mailto:amy.marsh@ima.org.uk>

OSCILLATIONS & DYNAMIC INSTABILITIES IN CHEMICAL SYSTEMS at Colby College, Waterville, USA

Date: 2008-07-13 to 2008-07-18

The GRC on Oscillations & Dynamic Instabilities in Chemical Systems is a Nonlinear Science Conference with a distinguished implication of chemistry. It addresses self-organization phenomena under nonequilibrium conditions such as chemical oscillations, chaos, waves, stationary and dynamic patterns in man-made and biological systems with a strong interdisciplinary approach. The conference will cover experimental, theoretical and application aspects of nonlinear chemistry.

Topics:

- Electrochemical Systems
- Chemo-Mechanic Systems
- Pattern Formation
- Chemical Dynamics in Small-Scale Systems
- Non-Linear Chemical Dynamics
- Chemo-Hydrodynamic Instabilities
- Biological Systems
- Short Talks I & II

Application Deadline: Applications for this meeting must be submitted by June 22, 2008.

<http://www.grc.org/programs.aspx?year=2008&program=oscillat>
<mailto:ADEWIT@ULB.AC.BE>

Stochastic Differential Equation Models with Applications to the Insulin-Glucose System and Neuronal at Department of Mathematical Sciences, University of Copenhagen, Copenhagen,

Date: 2008-08-03 to 2008-08-16

The Copenhagen summer school and workshop will take place from August 3 to August 16, 2008, at Middelfart Kursuscenter 2 hours from Copenhagen. It is organized by the Department of Mathematical Sciences, University of Copenhagen. Principal organizers are Susanne Ditlevsen and Michael Sørensen.

Structure of the event: An eleven day summer school followed by a three day scientific workshop on the same scientific theme. The summer school component is aimed primarily toward Ph.D students and Post-Docs.

After the 11 day summer school training period, the students of the school take part in a three day scientific workshop. The workshop is designed to stand alone as a scientific event and include presentations from scientists actively involved in research in the focus theme of the event. Contributions from students can also be included.

Focus: The focus is on stochastic issues in physiological modeling. The school aims to concentrate on the possibilities offered by stochastic calculus for the solution of relevant biological problems. There is an increasing need to extend mathematical models of biological systems to models capable of describing more complex variations in the dynamics. In general, stochastic effects influence the dynamics, and may enhance or diminish or even completely change the dynamic behavior of the system. Real biological systems will always be subject to influences that are not fully understood or that cannot be explicitly modeled, and random noise offers a tractable way of taking account of these mechanisms. A natural extension of a deterministic differential equations model in continuous time is given by a stochastic differential equations model, where relevant parameters are modeled as random processes of some suitable form. This approach assumes that some degree of noise is present in the dynamics the process.

The stochastic modeling methods are applied to the glucose-insulin system and neuronal functioning. This will illustrate the advantages and highlight the problems of the stochastic modeling approach. The associated workshop will have the same themes.

The school: The school will have specific courses on stochastic integrals, statistical methods for diffusion processes, simulation of diffusion processes, stochastic neuronal models, and stochastic differential equation models for the glucose-insulin system.

The workshop: The workshop aims at raising awareness of these matters and building a bridge between the biological problems and the possibilities offered by the theory of stochastic calcu-

lus. The goal is to gather experienced researchers within the two research areas, as well as young researchers, who will have opportunities to discuss and present their specific problems, and hopefully engage in new collaboration projects.

<http://www.math.ku.dk/~susanne/SummerSchool2008>

The 4th International Conference on Natural Computation (ICNC'08) – The 5th International Conference on Fuzzy Systems and Knowledge Discovery (FSKD'08) at Jinan, China

Date: 2008-08-25 to 2008-08-28

The joint ICNC'08-FSKD'08 will be held in Jinan, China. Jinan is the capital of Shandong Province, which is known for the home of Confucius, the Taishan Mountain, and the Baotu Spring.

ICNC'08-FSKD'08 aims to provide an international forum for scientists and researchers to present the state of the art of intelligent methods inspired from nature, including biological, ecological, and physical systems, with applications to data mining, manufacturing, design, and more. It is an exciting and emerging interdisciplinary area in which a wide range of techniques and methods are being studied for dealing with large, complex, and dynamic problems.

Previously, the joint conferences in 2005, 2006 and 2007 each attracted over 3000 submissions from more than 30 countries.

All accepted papers will appear in conference proceedings published by the IEEE and will be indexed by both EI and ISTP. Furthermore, extended versions of selected papers will be published in a special issue of *Soft Computing: An International Journal* (SCI indexed).

To promote international participation of researchers from outside the country/region where the conference is held (i.e., China), foreign experts are encouraged to propose invited sessions. Each invited session should have at least 4 papers. Invited session organizers will solicit submissions, conduct reviews and recommend accept/reject decisions on the submitted papers. All invited session organizers will be acknowledged in the conference

proceedings. Each invited session proposal should include the following information: (1) the name(s) and contact information of invited session organizer(s); (2) the title and a short synopsis of the invited session.

<http://www.icnc-fskd2008.sdu.edu.cn>
<mailto:nc2008@sdu.edu.cn>

Workshops

Workshop on Population Dynamics and Mathematical Biology at CIRM Luminy, France

Date: 2008-06-16 to 2008-06-20

Purpose: The goal of this workshop is to bring together specialists from different fields to discuss recent progress in Population Dynamics and Mathematical Biology focusing on the qualitative analysis of structured population models, with regards to pattern formation, front propagation, and bifurcation phenomena. Special attention will be given to applications in the spread and control of epidemic diseases, invasion and persistence in ecological systems as well as in biomedical and cancer modeling.

<http://awal.univ-lehavre.fr/magal/Workshop-CIRM-2008/>
<mailto:pierre.magal@univ-lehavre.fr>

Open Positions

Bioconvection: hydrogen production and high concentrations in suspensions of swimming microorganisms at Department of Mathematics, University of Glasgow, Scotland

Deadline for applications: 2008-03-18

Applications are invited for an EPSRC funded postdoctoral research fellowship on "Bioconvection: hydrogen production and high concentrations in suspensions of swimming microorganisms." It is the aim of this project to investigate the coupling between algal swimming behaviour, bioconvective pattern formation, and hydrogen gas production

in sulphur-stressed suspensions of dilute and concentrated green algae, with a view to improve the hydrogen yield. Applicants are expected to have an excellent record of achievement in the fields of Mathematical Biology, Modelling and Fluid Dynamics. Practical knowledge of analytical and numerical techniques in Stokes flow is desirable. Applicants with both theoretical and experimental experience in a biological or fluids area are especially encouraged to apply, although a first-rate applicant with a theory only track record will stand an equal chance. The successful applicant will be expected to work with others to achieve several objectives.

The post is funded by the EPSRC (for 3 years at grade 6; or 2.5 years at grade 7) from 1st May 2008, or soon thereafter.

Further details, including project information, can be obtained via <http://www.maths.gla.ac.uk/> or by contacting Dr Bees (m.bees@maths.gla.ac.uk).

Applications should be submitted to Dr Martin A Bees, Department of Mathematics, University of Glasgow, Glasgow G12 8QW. Closing date: 18th March 2008.

Please contact: Dr Martin A Bees
<http://gla.ac.uk/jobs/vacancies/researchandteaching/14084g6ra/#d.en.66814>

A one-year CNRS funded postdoctoral position at Institut des Sciences de l'Evolution, Montpellier, France

Deadline for applications: 2008-03-30

Applications are invited for a one-year CNRS funded postdoctoral position on the general theme: Inference of epidemiological processes by maximum likelihood analysis of genetic data; application to Malaria.

The candidate will implement and evaluate the performance of coalescent algorithms for likelihood inference under models of recent population expansions and apply them to malaria biology. The post-doc will be based at the Institut des Sciences de l'Evolution (CNRS, UMR 5554) in Montpellier, where the applicant will work with Francois Rousset and collaborators in Montpel-

lier, (Francois Renaud, CNRS/IRD) and Paris (Raphael Leblois, Museum National d'Histoire Naturelle, CNRS UMR 5202). The post can start on September 1st or October 1st 2008 and will run for one year. Gross salary will be 2500 E per month.

Please contact: Francois Rousset
<https://www2.cnrs.fr/DRH/post-docs08/?pid=1&action=view&id=532&lang=en>

Ph D Scholarship - Complex socio-economic systems at Universidad Carlos III de Madrid, Spain

Deadline for applications: 2008-03-31

The Interdisciplinary Group for Complex Systems (GISC) at Universidad Carlos III de Madrid, Spain, is seeking outstanding, highly motivated candidates to join a research project at the interface between physics, mathematics, computer science and social sciences. The successful candidate is trained either in physics, mathematics or computer science, the main criteria being the potential to perform top-quality, cross-disciplinary research.

GISC is a very active research group on Complex Systems, providing excellent working conditions and opportunities for advanced research. Research conducted at GISC is multi-disciplinary and offers the possibility to interact with researchers working in other fields. Our location in Madrid adds the opportunity to enjoy the life of one of the liveliest towns in Europe, both culturally and socially.

Successful applicants will develop their research activities in the framework of GISC's research line in Applications of Complex Systems to Social Sciences, with faculty members Jos A. Cuesta and Anxo Snchez (<http://gisc.uc3m.es/cuesta>, <http://gisc.uc3m.es/anxo>). The research project is focused on the following areas:

- Evolutionary game theory on graphs
- Experimental mesoeconomics
- Analysis of social networks

We anticipate hiring a Ph.D. student within the MOSAICO project, supported by the Spanish Ministry of Education, which requires nationality of a EU member state. The PhD student position is available for 4 years, renewable every year. The

first two years are supported by a Scholarship, the second half of the period is supported by a Research Position. At the end of the 4-year period the student must have obtained a Ph.D. degree.

Interested applicants should send a Curriculum vitae and the name and contact information of a person who can provide a letter of reference. Please send information by email to anxo@math.uc3m.es. The official application period will begin shortly and will be open for a month, so interested applicants are encouraged to make contact immediately.

Please contact: [Angel \(Anxo\) Sanchez](#)

Chair in Complexity Science at Departments of Mathematics and Physics, University of Strathclyde, UK

Deadline for applications: 2008-04-18

Applications are invited for a new Chair in Complexity Science at the University of Strathclyde, based within the Departments of Physics (www.phys.strath.ac.uk) and Mathematics (www.maths.strath.ac.uk) and hosted by the Institute of Complex Systems at Strathclyde (ICSS, icss.strath.ac.uk). In 2007 the Faculty of Science launched the multidisciplinary ICSS in order to combine expertise on self-organization, networks,

nonlinear and stochastic dynamics of relevance to applied mathematics, physics, chemistry, biology, medicine, ecology and engineering. The post will be supported by a Research Excellence Fund of the University and by newly refurbished workshop space allocated to the ICSS including parallel computer facilities.

You will have a multidisciplinary outlook and a strong research record in broadly defined area of complexity science. Strong collaborations are already in place in the ICSS among participating groups from a wide base of disciplines (Mathematics, Physics, Biology, Engineering, Chemistry, Computer Science). You will be expected to further develop these collaborations and establish new ones.

The Department of Physics is a founder member of the SUPA (Scottish Universities Physics Alliance, www.supa.ac.uk) while the Department of Mathematics is presently involved in the setting of a Scottish Mathematical Sciences Research Pooling so opportunities for collaboration in Scotland are extensive.

The closing date for receipt of applications is 18 April 2008.

Please contact: [Gian-Luca Oppo](#)
<http://www.mis.strath.ac.uk/Personnel/open/142008.htm>