



School and Workshop on Dynamical Systems

30 June - 18 July 2008

Miramare, Trieste, Italy

The Abdus Salam International Centre for Theoretical Physics is organizing a **School and Workshop on Dynamical Systems** from 30 June to 18 July 2008. It will be directed by Professors **M. Viana** (IMPA, Rio de Janeiro, Brazil), and **J.-C. Yoccoz** (Collège de France, Paris). Honorary Directors, Professors **J. Palis** (IMPA, Rio de Janeiro, Brazil), **Ya. Sinai** (Princeton University, U.S.A., & Landau Institute for Theoretical Physics, Moscow, Russia). Local Organiser: **C. E. Chidume** (ICTP, Trieste)

The main topics to be covered will be:

- *Chaotic Dynamics: Homoclinic Bifurcations, Attractors, Generic Systems, Partial Hyperbolicity and Dominated Splitting, Lorenz Attractors*
- *Conservative Dynamics: KAM and Aubry-Mather theories, diffusion in Hamiltonian Systems, Billiards, Infinite Dimensional Systems, Celestial Mechanics*
- *Ergodic Theory: Sinai-Ruelle-Bowen Measures, Stochastic Stability, Lyapunov Exponents, Linear Cocycles, Spectral Theory of Schrödinger Operators, Recurrence and Applications to Number Theory*
- *Geometric, Algebraic, and Topological Aspects of Dynamics: Smooth Group Actions, Knots and Braids, Commutators*
- *One-Dimensional Dynamics: Density of Hyperbolicity, Parametrized Families of Transformations, Stochastic versus Regular Behavior*

The Structure of the School and Workshop will be the following:

- The School will take place during the first two weeks in parallel with research lectures
 - The Workshop will be mostly concentrated on the third week
- Three courses are planned, each lasting for two weeks with 5h a week
The first week will cover material introductory to the subject, to make it accessible to a wider audience. The second week will deal with recent developments in the corresponding field.

Courses will be the following:

- *From Dynamics to Group Theory via Examples,*
E. Ghys (ENS-Lyon), & A. Navas (Santiago de Chile)
- *Lyapunov Exponents,*
A. Avila, (CNRS-Paris) & J. Bochi (Porto Alegre)
- *Ergodic Theory, Combinatorics, Diophantine Approximations*
V. Bergelson (Ohio) & A. Gorodnik (Bristol, UK)

Mathematicians from all countries that are members of the United Nations, UNESCO or IAEA may attend the activity. Although the main purpose of the Centre is to help researchers from developing countries, through a programme of training activities within a framework of international co-operation, scientists from developed countries are also welcome to apply. As the activity will be conducted in English, participants should have an adequate working knowledge of this language. Participants should preferably have completed some years of study after a first degree.

As a rule, travel and subsistence expenses of the participants should be borne by the home institution. Every effort should be made by candidates to secure support for their fare (or at least half-fare). However, limited funds are available for some participants, who are nationals of, and working in, a developing country, and who are not more than 45 years old. Such support is available only for those who attend the entire activity. There is no registration fee.

Requests for Participation: The "Request for Participation" form is obtainable via Web server: http://cdsagenda5.ictp.it/full_display.php?email=0&ida=a07159 It should be completed, signed and returned by using only one of the following ways

If sending an application by e-mail to: smr1950@ictp.it please save and send file attachments in either PDF (preferably) or RTF zipped or DOC format.

If sending an application form by regular mail or courier it should be posted to:

School and Workshop on Dynamical Systems (to be returned before the 15 March)

(smr1950 c/o Ms. Patricia Wardell)

the Abdus Salam International Centre for Theoretical Physics

Strada Costiera 11

34014 Trieste, Italy

(recent photograph & signature of the candidate are compulsory)

ACTIVITY SECRETARIAT: Telephone: +39-040-2240576 Telefax: +39-040-2240585

E-mail: smr1950@ictp.it ICTP Home Page: <http://www.ictp.it/>

Honorary Directors

J. Palis Brazil
Ya. Sinai U.S.A./Russia

Directors

M. Viana Brazil
J.-C. Yoccoz France

Invited Speakers will include

J. F. Alves Porto, Portugal
N. Anantharaman Paris, France
V. Baladi Paris, France
M. Benedicks KTH, Stockholm
C. Bonatti Dijon, France
J. Buzzi Paris, France
S. Crovisier Paris, France
W. de Melo IMPA, Brazil
D. Dolgopyat Penn State, USA
G. Forni Toronto, Canada
V. Kaloshin Maryland, USA
K. Khanin Toronto, Canada
R. Labarca Santiago, Chile
C. Liverani Rome, Italy
S. Luzzatto London, UK
R. Markarian Montevideo, Uruguay
C.G. Moreira IMPA, Brazil
S. Newhouse Michigan, USA
M.J. Pacifico Rio de Janeiro, Brazil
M. Pollicot Warwick, UK
C. Pugh Toronto, Canada
E. Pujals IMPA, Brazil
J. Rivera Antofagasta, Chile
F. Rodriguez-Hertz Montevideo, Uruguay
M. Sambarino Montevideo, Uruguay
O. Sarig Warwick, UK
D. Szasz Budapest, Hungary
M. Shub Toronto, Canada
S. van Strien Warwick, UK
M. Tsujii Hokkaido, Japan
L. Wen Beijing, China
A. Wilkinson Northwestern, USA

DEADLINE

for requesting participation

15 MARCH 2008