



The Abdus Salam International Centre for Theoretical Physics



ICTP-ESF-SCHOOL AND CONFERENCE IN DYNAMICAL SYSTEMS

21 May - 8 June 2012

ICTP, Miramare - Trieste, Italy

The Abdus Salam International Centre for Theoretical Physics (ICTP) is organizing a "School and Conference in Dynamical Systems" within the framework of the ICTP-ESF Series of High Level Conferences on Geometry and Dynamics. The activity will be held from 21 May to 8 June 2012, in Trieste, Italy. It will be directed by S. Luzzatto (ICTP, Trieste, Italy), M. Viana (IMPA, Rio de Janeiro, Brazil) and J.-C. Yoccoz (Collège de France, Paris, France). This event is sponsored by ICTP, ESF, PRONEX - Dynamical Systems/CNPq and DynEurBraz.

TOPICS

- **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 Schrodinger 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.

During the **two first weeks (21 May - 1 June)**: courses on the following topics will be delivered:

Birkhoff sums for interval exchange maps: the Kontsevich-Zorich cocycle
Jean-Christophe Yoccoz (Collège de France) / Carlos Matheus (Paris Villetaneuse)

Dynamics of partially hyperbolic systems and rigidity
Federico Rodriguez-Hertz (Penn State) / Pablo Carrasco (IMPA)

Markov partitions for surface diffeomorphisms
Omri Sarig (Weizmann) / Klerley Oliveira (Maceió)

The **third week (4 - 8 June)** will be a conference. The invited speakers will include some of the best experts in the field as well as brilliant young researchers. They will provide the participants with some of the most recent and most interesting perspectives for future research.

Up to date information about the program of the school and conference can be found at the activity website
<http://agenda.ictp.it/smr.php?2340>

PARTICIPATION

Mathematicians from all countries that are members of the United Nations, UNESCO or IAEA may attend the Activity.

Scientific background on the area of the School and Conference is essential.

HOW TO APPLY FOR PARTICIPATION

Applicants located in ESF member countries (<http://www.esf.org/about-esf/what-is-the-european-science-foundation/78-member-organisations.html>) or non-developing countries can apply to ESF application link:
<http://www.esf.org/index.php?id=g261>

All other applicants should apply online, at the activity website:
<http://agenda.ictp.it/smr.php?2340>

Once in the website, comprehensive instructions will guide you step-by-step, on how to fill out and submit the application form.

Activity Secretariat:

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European Science Foundation

PRONEX - Dynamical Systems/CNPq



DYNEURBraz



SCUOLA
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DIRECTORS

STEFANO LUZZATTO (ICTP)
MARCELO VIANA (IMPA)
JEAN-CHRISTOPHE YOCOZ
(Collège de France)

INVITED SPEAKERS

José Alves (Porto)
Artur Avila (Paris-Jussieu/IMPA)
Jairo Bochi (PUC-Rio)
Viviane Baladi (Paris-ENS)
Christian Bonatti (Dijon)
Alexander Bufetov (Rice)
Sylvain Crovisier (Paris-Orsay)
Lorenzo J. Díaz (PUC-Rio)
Hakan Eliasson (Paris-Jussieu)
Carlangelo Liverani (Rome)
Mikhail Lyubich (Stony Brook)
Stefano Marmi (Pisa)
Marco Martens (Stony Brook)
Carlos Matheus (Paris-Villetaneuse)
Andrés Navas (PUC-Chile)
Carlos Gustavo Moreira (IMPA)
Maria José Pacífico (UFRJ-Rio de Janeiro)
Jacob Palis (IMPA)
Yakov Pesin (Penn State)
Vilton Pinheiro (Bahia)
Enrique Pujals (IMPA)
Juan Rivera-Letelier (PUC-Chile)
Sebastian van Strien (Warwick)
Masato Tsujii (Kyushu)
Dmitry Turaev (Imperial College)
Amie Wilkinson (Northwestern)

APPLICATION DEADLINE:
JANUARY 31, 2012