

**Workshop on Conservative Dynamics and Lagrangian Systems**  
**IMPA, Rio de Janeiro, August 15<sup>th</sup> to 19<sup>th</sup>, 2005**

**SCIENTIFIC REPORT**

The “Workshop on Conservative Dynamics and Lagrangian Systems”, held at IMPA, Rio de Janeiro, August 15<sup>th</sup> - 19<sup>th</sup>, 2005, was a small meeting joining a number of experts on Conservative Dynamics and Lagrangian systems, and a satellite workshop to the International Congress on Dynamical Systems

It covered several topics related to the Dynamics and Geometry of Conservative and Lagrangian systems, especially:

- Aubry-Mather theory
- Solutions and subsolutions of the Hamilton-Jacobi equation
- Floer homology
- Symplectic Geometry
- Contact Geometry

**Organizing Committee:**

Marcelo Viana, IMPA  
Leonardo Macarini, UFRJ

**Invited Speakers**

Albert Fathi (ENS-Lyon)  
Artur Lopes (UFRGS)  
Clodoaldo Ragazzo (USP)  
Diogo Pinheiro (Warwick)  
Enrique Bursztyn (IMPA)  
Eugene Gutkin (IMPA)  
Felix Schlenk (Leipzig)  
Gabriel Paternain (Cambridge)  
Gonzalo Contreras (CIMAT)  
John Mather (Princeton)  
Karl Siburg (Bochum)  
Leonid Polterovich (Tel Aviv)  
Mario Jorge Dias Carneiro (UFMG)  
Patrick Bernard (Grenoble)  
Rafael Ruggiero (PUC-RJ)  
Renato Iturriaga (CIMAT)

In what follows we describe the scientific activities held in the event:

- **Contact non-squeezing at the quantum scale**  
Leonid Polterovich
- **Variational and topological properties of invariant two dimensional tori**  
Mario Jorge Dias Carneiro
- **Some plane-fields related to vector fields on 3-manifolds**  
Clodoaldo Ragazzo

- **Fiberwise volume growth via Floer Homology**

Felix Schlenk

- **Arnold's diusion and weak KAM theory**

P. Bernard

- **Mather measures for the geodesicflow inconstant negative curvature and the bowen-series transformation**

Artur Oscar Lopes

- **Interaction of two charges in a magnetic field**

Diogo Pinheiro

- **Calabi Quasi-Morphism on Higher Genus Surfaces**

Pierre Py

- **Rigidity of surfaces whose geodesic flows preserve smooth codimension one foliations**

Rafael Ruggiero

- **Poincare's second species orbits**

Robert Mackay

- **Connecting Geodesics for locally symmetric spaces**

Eugene Gutkin

- **Quasi-Hamiltonian Geometry**

Henrique Bursztyn

- **Minimization and hyperbolicity**

Gonzalo Contreras

- **Large deviation for equilibrium states of Holder potentials at zero temperature**

Alexandre Tavares Baraviera

- **Chain recurrence and Aubry sets**

Albert Fathi