



106º EDAÍ
13 de setembro de 2024



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Fórum de Ciência e Cultura da UFRJ
Salão Nobre
Av. Rui Barbosa, 762, Flamengo, Rio de Janeiro



Palestra 1: 10h00 – 11h00

Quantitative recurrence: spatio-temporal point process and applications
Françoise Péne (Université de Bretagne Occidentale)

We consider chaotic probability preserving dynamical systems. We study a spatio-temporal point process capturing the information both in time and in space on visits of orbits in a set of small measure. More precisely, we are interesting in the convergence of this process to a Poisson Point process when the measure of the set goes to 0. We will focus on a strategy to prove such a convergence and on consequences of such a result : convergence of Birkhoff sums to stable law, point process of visits in a neighbourhood of a hyperbolic periodic point, time spent in a small neighbourhood of some position of a point particle evolving in the Sinai billiard, etc. This talk is based on joint works with Benoît Saussol.

Palestra 2: 11h00 – 12h00

Noise-induced phenomena in random dynamical systems
Yuzuru Sato (Hokkaido University)

Noise-induced phenomena are caused by interactions between deterministic dynamics and external noise. When a transition occurs owing to small noise, the stationary distribution of the deterministic dynamical system is substantially altered, and the unobservable structure of the original dynamics becomes observable. In such cases, nonlinear phenomena, which qualitatively differ from deterministic dynamics, emerge in the noised dynamics. This talk includes a brief review of classical noise-induced phenomena in statistical and nonlinear physics, such as noise-induced synchronization, stochastic resonance, noise-induced chaos, and noise-induced order, from random dynamical systems point of view. Recent results on multiple noise-induced transitions in one-dimensional maps and heterogeneous noise-induced order in a class of high-dimensional dynamical systems are presented as well.

Almoço: 12h00 – 14h00

Palestra 3: 14h00 – 15h00

Growth of horospheres in some Heintze spaces
Pablo Lessa (Universidad de la República de Uruguay)

In ongoing joint work with Gilles Courtois and Emiliano Sequeira we are exploring the volume growth of the horospheres of some homogeneous negatively curved spaces. The unit normal bundles of the horospheres are the strong stable manifolds of an Anosov flow (albeit on a non-compact space), so their volume growth is polynomial. We obtain an exact order of polynomial growth in some cases. Many interesting questions remain open.

Coffee-break: 15h00 – 15h30

Palestra 4: 15h30 – 16h30
Entropy and measures at the boundary
François Ledrappier (CNRS-Paris)

We describe equivariant families of measures on the boundary of the universal cover of a closed Riemannian manifold with negative curvature. We discuss the associated entropy and its rigidity properties. The same formalism can describe:

- 1.the Patterson-Sullivan family and the associated Burger-Roblin measure,
- 2.the Lebesgue family and the Liouville measure,
- 3.the harmonic measures and the drifted harmonic measures,
- 4.the Mohsen family giving the Rayleigh quotient and
- 5.the Gibbs-Patterson families.

Confraternização: Boteco Belmonte do Flamengo, 17h00 – ∞



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