

**99º EDAÍ**  
20 de outubro de 2023



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DMAT-PUC-Rio  
Sala de Reuniões do Decanato do CTC  
12 andar prédio Leme



**Palestra 1: 14h00 – 15h00**

Symmetries and rigidity of dynamical systems  
Danijela Damjanovic (KTH,Suécia)

I will talk about the interplay between structure of the symmetry group of a smooth diffeomorphism, and dynamical properties of the diffeomorphism. Just as symmetries of an object force topological and geometric properties of the object, symmetries of dynamical systems may force emergence of invariant homogeneous structures helping us to better, sometimes even completely, understand the dynamics of the system. I plan to present some recent results with A. Wilkinson and D. Xu concerning symmetry groups and rigidity of partially hyperbolic diffeomorphisms.

**Palestra 2: 15h10 – 16h10**

Ergodic Theory Motivated by Sarnak's and Chowla's Conjectures in Number Theory  
Yunping Jiang (CUNY - Queens Coll. and Grad. Center, EUA)

The Birkhoff ergodic theorem, a fundamental concept in ergodic theory, asserts that, in an ergodic measure-preserving dynamical system, the time average converges to the space average for almost every point. This convergence holds for every point, extending the theorem's applicability when dealing with a uniquely ergodic system on a compact metric space. Our current research, inspired by Sarnak's conjecture, delves into the study of weighted time averages for continuous functions within zero topological entropy dynamical systems on compact metric spaces. We aim to leverage the oscillating property of weight as a tool for classifying such systems. This talk will provide an overview of recent developments in this area. Sarnak's conjecture, closely tied to Chowla's conjecture in number theory, serves as a key motivator for our work. Further exploration of this connection unveils intriguing relationships between invariant measures, particularly in the Möbius and square-free flows. I will also touch upon recent advancements on this topic.

**Café: 16h10 – 16h40**

**Palestra 3: 16h40 – 17h40**

Complex rotation numbers and bubbles.  
Nataliya Goncharuk (Texas A&M University, EUA)

The notion of a complex rotation number for an analytic circle diffeomorphism was suggested by V. Arnold in 1978. The relation to usual rotation numbers was later established in a sequence of works by E. Risler, V. Moldavski, Yu. Ilyashenko, X. Buff, and myself. I will give a survey of results, applications, and open questions on complex rotation numbers and the related fractal-like set – bubbles.

**Confraternização: Local a determinar, 19h00 – ∞**



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