

115º EDAÍ
31 outubro de 2025



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DMAT-PUC-Rio
Auditório del Castillo (RDC)



Palestra 1: 10h30 – 11h25

Aaron Brown (Northwestern University, EUA)
Entropy in the classification of lattice actions

For n at least 3 and for lattices in $SL(n, \mathbb{R})$, we consider actions on n -manifolds. Assuming the existence of an element acting with positive topological entropy, we (measurably) classify the action (up to finite index and covers) as an action of $SL(n, \mathbb{Z})$ on the n -torus. This requires establishing a version of Yomdin-Newhouse semi-continuity of fiber entropy. This is joint work with Homin Lee.

Pausa de almoço

Palestra 2: 13h30 – 14h25

Balázs Bárány (Budapest Univ. Techno. and Economics, Hungria)
Exponential separation of analytic self-conformal sets on the real line

In a recent article, Rapaport showed that there is no dimension drop for exponentially separated analytic IFSs on the real line. We show that the set of exponentially separated IFSs in the space of analytic IFSs contains an open and dense set in the C^2 topology. Moreover, we give sufficient conditions for the IFS to be exponentially separated, allowing us to construct explicit exponentially separated examples. The key technical tool is the introduction of the dual IFS, which we believe has significant interest in its own right. As an application, we also characterise when an analytic IFS can be conjugated to a self-similar IFS. This is a joint work with Kolossváry and Troscheit.

Palestra 3: 14h35 – 15h30

Viveka Erlandsson (Univ. Bristol, Reino Unido)
Counting geodesics of given commutator length

It is a classical result by Huber that the number of closed geodesics of length bounded by L on a closed hyperbolic surface is asymptotic to e^L/L as L grows. This result has been generalized in many directions, for example by counting certain subsets of closed geodesics. Mirzakhani obtained the asymptotic growth of simple geodesics of given type, for example those that bound an embedded genus g surface. In another direction, the growth of geodesics that are homologically trivial was obtained independently by Phillips-Sarnak and Katsura-Sunada. A homologically trivial curve can be written as a product of commutators, and in this talk we will look at those that can be written as a product of g commutators and obtain their asymptotic growth. As a consequence we also get the growth of geodesics that bound an immersed genus g surface. As a special case, our methods give a geometric proof of Huber's classical theorem. This is joint work with Juan Souto.

Café

Palestra 4: 16h00 – 16h55

Ana Rechtman (Univ. Grenoble Alpes, França)
Broken book decompositions for generic Reeb vector fields

An important class of non-singular volume preserving vector fields are Reeb vector fields. In dimension 3 these have been the subject of study in the last few decades, in particular around the problem of the existence of periodic orbits. We now know that every Reeb vector has at least two periodic orbits (a result proved by Cristofaro-Gardiner and Hutchings in 2016).

In this talk I will explain that a non-degenerate Reeb vector fields admits a systems of transverse surfaces with boundary that form a broken book decomposition of the ambient 3-manifold. A broken book decomposition is a generalization of an open book decomposition. Broken book decompositions have proved to very useful for studying dynamical aspects of a Reeb vector field, in particular it allows to prove that a non-degenerate Reeb vector field has either two or infinitely many periodic orbits, and to give results on the topological entropy of the flow.

This is a joint work with V. Colin and P. Dehornoy.

Sarau, 17h00 – 18h00

Choradeira com os Musimáticos
Anfiteatro Junito Brandão

Confraternização: Local a determinar, 18h30 – ∞



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