55º EDAÍ   12 de junho de 2015

Auditório do bloco G, Campus do Gragoatá, UFF
☞ Atenção: novo local!

Matinée: 14h30 – 15h30
Chaos and Indecomposability
Udayan Darji (University of Louisville)

In this talk, we introduce three well-known concepts of topological chaos. We review some classical results concerning periodicity, chaos and horse shoes for dynamical systems on graphs. We discuss recent developments in local entropy theory. Using local entropy theory, combinatoric and topology, we show that if X is a compact connected metric space which admits a homeomorphism with positive topological entropy, then X must contain certain complicated substructures. In particular, if certain types of compact connected 1-dimensional space admit homeomorphisms with positive topological entropy, then the space must contain a compact connected subset which is indecomposable. All concepts and background results will be defined and explained in detail.

Palestra 1: 15h45 – 16h45
Quasisymmetric rigidity of multi-critical circle maps
Edson de Faria (USP)

A recent study by T. Clark and S. van Strien establishes the quasisymmetric rigidty of one-dimensional maps in a fairly general context comprising both multi-modal interval maps and multi-critical circle maps (all critical points being non-flat in both cases). Their proof is rather involved, and relies heavily on complex analytic tools. My aim in this talk is to show that, in the case of multi-critical circle maps, such quasisymmetric rigidity result can be proven by purely real variable methods. The talk is based on joint work (in progress) with Gabriela Estevez.

Café: 16h45 – 17h15

Palestra 2: 17h15 – 18h15
On the failure of Kronecker's density theorem for powers of an algebraic number
Maurizio Monge (UFRJ)

We will present a quantitative estimate on the failure of Kronecker's density theorem for the flow in the torus generated by a vector formed by m powers of an algebraic number, when m is big. We prove that the resulting subgroup is ϵ-dense, where ϵ is related to the Mahler measure of the algebraic number. The problem is motivated by a problem in control theory, where we assume that only the integral part of the behaviour is known. The estimate on the density is proved to be best-possible up to a constant, for m big enough; this optimality is proved by means of a result on linear recurrences of finite length, and estimates on the determinant of Toeplitz matrices. We formulate a conjecture on the constant provinding the best possible estimate, relating our problem to algebraic dynamical systems on the torus. (joint work with N. Dubbini)

Confraternização: 19h00 – ∞ - Chopp na Cantareira

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