



www.mat.puc-rio.br/edai

86° EDAÍ 25 de Outubro de 2019
Sala 207, 2º andar do Bloco H, Campus de Gragoatá, UFF

Matinê: 14h00 – 15h00

**Sarnak's conjecture implies Chowla's conjecture along a subsequence -
a dynamical proof**

Dominik Kwietniak (Jagiellonian University in Krakow)

The talk will have two parts: first, I will try to explain motivations and intuitions behind the conjectures of Chowla and Sarnak. Both problems remain open for some time (Chowla proposed his conjecture over 50 years ago), and both try to quantify randomness observed in the behavior of the Möbius function. I will rephrase these conjectures as problems about some specific dynamical system. In the second part of the lecture, I will discuss a recent result of Gomilko, Lemańczyk and me: the result says that the Sarnak conjecture implies that there is an increasing sequence of integers along which the Chowla conjecture holds. Our demonstration has two ingredients: the first is a result of Tao in the equivalence of logarithmic versions of the Sarnak and Chowla conjectures, and the second is a new tool: the set of limit points of the sequence of harmonic empirical measures.

Palestra 1: 15h10 – 16h10

Frações contínuas, constant de Lévy e geodésicas na superfície modular

Peter Hazard (UFABC/UFF)

A constante de Lévy de um irracional é um número positivo que mede o erro na aproximação diofantina pelos racionais. Ele também tem várias outras interpretações. Nesta palestra, vou discutir as relações entre constantes de Lévy e geodésicas na superfície modular, com foco no caso de irracionais quadráticos. Vou mostrar que certas séries de potência formais, associadas com a dinâmica simbólica do fluxo modular, são racionais se e somente se os irracionais são irracionais quadráticos. Em particular, temos expressões exatas para a constante de Lévy.

Café: 16h10 – 16h40

Palestra 3: 16h40 – 17h40

The action of Hamiltonian homeomorphisms on surfaces and its applications

Jian Wang (IMPA)

In symplectic geometry, the action function is a classical object defined on the set of contractible fixed points of the time-one map of a Hamiltonian isotopy. Under a weaker boundedness condition (WB for short), we can generalise the classical action function to the case of Hamiltonian homeomorphisms on surfaces. Through studying the properties of the generalised action function, we can generalise several classical results from the smooth world to the C^0 world, e.g., the C^0 -Schwarz's theorem (that is, the existence of two actions of a non-trivial Hamiltonian homeomorphism), the existence of three actions of a non-trivial Hamiltonian homeomorphism under the WB and a natural topological hypothesis (which is a strengthening of the C^0 -Arnold Conjecture on surfaces), etc. Mainly in collaboration with Frédéric Le Roux (work in progress).

Confraternização: 18h00 – ∞ - Chopp na Cantareira



Para receber informações sobre e divulgar eventos de Sistemas Dinâmicos na região fluminense, inscreva-se no mailinglist:

<http://groups.google.com/group/DinamiCarioca>

