



Colóquio Interinstitucional

Modelos Estocásticos e Aplicações

Quarta-feira, 14 de novembro de 2018

Programa

14:00 - 15:20 – **Natasha Morrison (Cambridge and IMPA)**

*Hypergraph Lagrangians:
Extremal combinatorics and the Frankl-Füredi conjecture*

In this talk, we explore the origins of hypergraph lagrangians and some of their applications to classical problems in extremal combinatorics.

We then focus on the Frankl-Füredi conjecture, which concerns the maximal value of the lagrangian of an r -uniform hypergraph with a fixed number of edges. In particular, we show that the conjecture is false in general, but holds for all sufficiently large 3-uniform hypergraphs.

[based on joint work with Vytautas Gruslys (Cambridge) and Shoham Letzter (ETH Zürich)]

15:40 - 17:00 – **Hubert Lacoïn (IMPA)**

Multiplicative chaos and multiplicative cascades

Multiplicative cascades were introduced in the 70s by Mandelbrot and Yaglom as a canonical model for self-similar fractal random measures. While initially designed by Yaglom as a model for turbulence, the richness of the model made it very popular in statistical mechanics, in particular in the spin glass community. In the 80s, Kahane introduced Gaussian Multiplicative Chaos which generalizes multiplicative cascades and received a renewed interest in the last decade as a fundamental building brick in the mathematical theory of Liouville Quantum Gravity.

The aim of this talk is to review some classical results concerning Gaussian Multiplicative Chaos in the simpler context of multiplicative cascades, and introduce some more recent results we have obtained studying this object in a complex setup.

[based on joint work with R. Rhodes (Marseille) and V. Vargas (Paris)]

17:00 – Discussão e lanche

Local

Sala de reuniões do Decanato do CTC
12^o andar do prédio Cardeal Leme
PUC-Rio, Gávea

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