

**109º EDAÍ**  
21 de março de 2025



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PGMAT-UFF  
Sala 407  
4º andar, Bloco H  
Campus do Gragoatá



**Matinê: 14h00 – 15h00**

**Historic behavior and pluripotent property for diffeomorphisms**  
Shin Kiriki (Tokai Univ., Japão)

In “history,” statistical methods are completely ineffective in describing changes in individual events. Thus, it was Ruelle who called it historic if there is a behavior for which the average (one of the most fundamental concepts in statistics) could not be defined. I will introduce the fact that there are persistent non-hyperbolic dynamical systems that exhibit historic behavior, which is an affirmative answer to Takens’ last problem. Moreover, the property that a dynamical system can be statistically approximated not only by historic behaviors but also by any other behaviors is called pluripotent. If time permits, I would also like to introduce the robust existence of pluripotent dynamical systems in the non-hyperbolic class. This talk is an introduction not only to [Kiriki-Soma’17] and [Kiriki-Nakano-Soma’23], but also to the ongoing collaboration with Professor Lorenzo J. Diaz.

**Palestra 1: 15h10 – 16h10**

**On the transitivity of Anosov diffeomorphisms**  
Luciana Salgado (UFRJ)

We derive a necessary and sufficient condition for an  $\Omega$ -stable diffeomorphism to be a topologically transitive Anosov diffeomorphism: to exhibit a nonempty intersection of the stable and unstable manifolds of any pair of periodic orbits. To elucidate its dynamical nature, we compare this condition with other properties known to be sufficient for an Anosov diffeomorphism to be topologically transitive. We also describe the  $C^1$  interior of the set of diffeomorphisms which comply with this condition, discuss examples with a variety of dynamics and present some applications of interest. This is a joint work with Maria Carvalho (CMUP) and Vinicius Coelho (UFOB).

**Café: 16h10 – 16h40**

**Palestra 2: 16h40 – 17h40**

**Superdiffusive limits for deterministic fast-slow systems**  
Ian Melbourne (Univ. of Warwick, Reino Unido)

Homogenisation of fast-slow systems leads to stochastic differential equations in the limit as the time-separation grows. I’ll focus superdiffusive case where the SDE is driven by an alpha-stable Levy process. Earlier results with Gottwald and with Chevyrev, Friz & Korepanov suggested a reasonably simple theory, but the full solution turns out to be a bit stranger. This is joint work with Chevyrev & Korepanov.

**Confraternização: Cantareira, 18h00 – ∞**



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