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Bernoulli Property for Partially Hyperbolic Diffeomorphisms

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Resumo

Smooth ergodic theory is the study of statistical and geometrical properties of invariant measures for a given system. A system (f, μ), is said to be ergodic if μ is a f- invariant measure and any f-invariant set has measure zero or one. Though ergodicity is a form of saying that the system is unpredictable from the point of view of the measure, we may find several "degrees of unpredictability". This different degrees of unpredictability constitutes what we call *ergodic hierarchy*. Intuitively speaking the ergodic hierarchy distinguish systems by how fast they mix sets along the time. Between those fine ergodic properties, we cite for example: Bernoulli property, Kolmogorov property, mixing, ergodicity. Kolmogorov property can be understood by the concept of entropy. A system (f, μ) is Kolmogorov if given any finite partition $\mathcal{P}$ the entropy $h_\mu(f, \mathcal{P})$ is positive. In this talk we will study the equivalence of the Kolmogorov and Bernoulli property for partially hyperbolic DA diffeomorphisms on $\mathbb{T}^3$. In a joint work with A. Tahzibi and R. Varão we proved the following theorem.

Theorem. [1] Let $f \in \mathcal{PH}_m^{1+\alpha}(\mathbb{T}^3)$ be homotopic to a linear Anosov. If f is Kolmogorov, then f is Bernoulli.

Referências

[1] G. Ponce, A. Tahzibi, and R. Varão. Bernoulli property for partially hyperbolic diffeomorphisms on the 3-torus. in preparation.