

Flexibility of statistical properties in smooth dynamics

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Smooth dynamical system can exhibit wide range of behaviors ranging from most regular, such as periodic or quasiperiodic to most stochastic such as Anosov diffeomorphisms. Anosov maps enjoy a wide range of statistical properties including ergodicity, weak mixing, mixing, positive entropy, K property, Bernoulli property, Central Limit Theorem, Large Deviations Bounds and Exponential Mixing. In this talk we discuss the following problem given two disjoint subsets P and A from the list above does there exist a system in which all properties from P are present and all properties from A are absent. After reviewing previous work on this topic we present several new examples constructed in a joint work with Changguang Dong, Adam Kanigowski and Peter Nandori.