Seminário de Sistemas Dinâmicos

Título:

Local-global mixing for intermittent maps

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Resumo

I will present ongoing joint work with I. Melbourne (University of Warwick) in which we show that a class C of *intermittent interval maps* (maps which are uniformly expanding except at finitely many fixed points) are *locally-globally mixing.* The maps we study preserve an infinite ergodic measure which is equivalent to Lebesgue on sets away from the neutral fixed points and the infinite mass of such a system is concentrated precisely at the neutral fixed points. In previous work (https://arxiv.org/abs/2407.07286), we showed that even though the class C is *non-statistical* (each member of the class has no physical/SRB measure) these systems nevertheless admit a distinguished *natural measure* and as a consequence we proved mixing properties for observables which are locally constant at the fixed points. This is a rather unsatisfactory kind of mixing as the observables we look at are essentially trivial in the interesting regions of the system. M. Lenci et. al. introduced an alternative type of mixing such infinite measure preserving systems known as *local-global* mixing which in essence allows one to consider observables that exhibit more complex behaviour at the fixed points. Lenci et al. (https://arxiv.org/abs/1911.02913) showed that intermittent maps with physical measures exhibit this type of mixing. In this talk we will show why this local-global mixing also holds for intermittent maps with no physical measure.