From small scales to large complexity

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Abstract

In the eighties, Yano proved that C^0-generic homeomorphisms have infinite topological entropy. The proof, simple and elegant, involves the construction of local pseudo-horseshoes of arbitrarily large topological entropy. In this talk I will discuss two results where the underlying idea that homeomorphisms on compact manifolds can be C^0-perturbed in order to create arbitrarily large chaotic behaviour play a key role:

(i) generic homeomorphisms cannot embed as time-1 maps of continuous flows, and

(ii) generic homeomorphisms have large (upper) metric mean dimension.