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Genericity of infinite entropy for maps with low regularity

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Abstract. For bi-Lipschitz homeomorphisms of a compact manifold it is known that topological entropy is always finite. For compact manifolds of dimension two or greater, we show that in the closure of the space of bi-Lipschitz homeomorphisms, with respect to either the Hölder or the Sobolev topologies, topological entropy is generically infinite. We also prove versions of the C^1-Closing Lemma in either of these spaces. Finally, we give examples of homeomorphisms with infinite topological entropy which are Hölder and/or Sobolev of every exponent.

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