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Title:

New Banach spaces for piecewise hyperbolic systems, including billiards

Abstract:

The (Ruelle) transfer operator is a powerful tool to study ergodic properties of dynamical systems enjoying some hyperbolicity. In order to obtain good spectral properties, it is essential to let this operator act on a well chosen Banach space. Due to the limited smoothness of dynamical foliations, this is a difficult problem, even for Anosov diffeomorphisms. After a burst of activity in the past 5 years or so (Gouezel, Liverani,Tsujii, myself...) the setting of smooth uniformly hyperbolic case is now fairly well understood (especially for diffeomorphisms, but also for flows). Piecewise hyperbolic systems pose new challenges. We shall present recent results, exploiting interpolation techniques and some estimates of Strichartz.