Mixing for infinite measure preserving semi-flows

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Abstract

We recall that the notion of ‘mixing’ for infinite measure preserving systems is very delicate: given a conservative ergodic infinite measure preserving transformation \((X,f,\mu)\) with transfer operator \(L\), we have \(\int L^n v \, d\mu \to 0\), as \(n \to \infty\), for all \(v \in L^1(\mu)\). Hence, to recover (in some sense) the classical notion of mixing, one needs to find a sequence \(c_n\) and a reasonably large class of functions \(v\) (within \(L^1\)) such that \(c_n \int L^n v \, d\mu \to C \int v \, d\mu\) for some \(C > 0\).

In previous joint work with Ian Melbourne [1], we develop a theory that recovers the classical notion of mixing for a very large class of discrete (non-invertible) dynamical systems with infinite measure. In work in progress, also joint work with Ian Melbourne, we obtain results for suspension semi-flows over the class of discrete dynamical systems with infinite measure considered in [1]. In this talk, after a brief review of some results in [1], I will present the new results on suspension semi-flows and describe the main steps of the construction.

References


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