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Title:

Decaying correlations and lifting to towers

Abstract:

Tower maps have become an important tool for obtaining the decay of correlations of maps with non-uniformly hyperbolic behaviour. Results by Young show that, at least for some specific rates, the correlations of certain observables and the tail of the return time to the tower base decay at the same speed. Here we present some reciprocal results, showing that if the correlations decay at certain speeds, then there is some tower map whose tail of the return time has the same type of decay.