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Weak classical and quantum chaos

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Abstract

We discuss, both analytically and numerically, two different families of zero-entropy dynamical systems of the two-dimensional torus: the so-called triangle map and a nontrivial two dimensional extension of the Pomeau–Maneville family in one dimension.

We aim first to present some results concerning ergodicity, the long-time behavior of recurrence, classical decay of correlations and spectral properties of the Perron–Frobenius operator, concluding with some recent observations concerning the semiclassical behavior of quantum eigenfunctions and statistical properties of quantum eigenvalues for the triangle map.