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Abstracts of Short Communications and Posters

Section:

11. Mathematical Physics

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Quantum dynamics in presence of fractal spectra

We study Jacobi matrices associated to self-similar measures given by invariant and ergodic measures of dynamical systems of the interval. We analyse dimensional properties of the spectral measures, and prove upper bounds for the asymptotic spread in time of wavepackets. These bounds involve the Hausdorff dimension of the spectral measure, multiplied by a correction calculated from the dynamical entropy, the density of states, and the capacity of the support. For Julia matrices, the correction disappears and the growth is ruled by the fractal dimension.