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Periodic boundary conditions for periodic Jacobi matrices on trees. (English) Zbl 07544304

Summary: We consider matrices on infinite trees which are universal covers of Jacobi matrices on finite graphs. We are interested in the question of the existence of sequences of finite covers whose normalized eigenvalue counting measures converge to the density of states of the operator on the infinite tree. We first of all construct a simple example where this convergence fails and then discuss two ways of constructing the required sequences: with random boundary conditions and through normal subgroups.

MSC:
47B36 Jacobi (tridiagonal) operators (matrices) and generalizations
47B15 Hermitian and normal operators (spectral measures, functional calculus, etc.)
20E08 Groups acting on trees

Keywords:
Jacobi matrices; trees; spectral theory

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