

Cantor Spectra on Periodic Quantum Graphs with Magnetic Fields

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joint work with J. Brüning and V. Geyler

For a class of square planar lattices placed into a magnetic field we reduce the spectral problem to the discrete magnetic Laplacian using self-adjoint extensions and Krein's resolvent formula. The recently solved ten martini problem and the well-known correspondence between the discrete magnetic Laplacian and the almost Mathieu operator imply that the spectrum is a Cantor set for the case of an irrational flux quanta number through the elementary cell of the lattice.