
SPECTRAL PROPERTIES OF OPERATORS ON APERIODIC GRAPHS

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April 17, 2023

We will discuss Schrödinger operators on graphs generated by aperiodic tilings. For several elements in the MLD class of the Penrose tiling, one finds eigenfunctions whose support is contained in a finite set of tiles. The presence of such eigenfunctions was known for the rhombic Penrose tiling since the work of Kohmoto—Sutherland in the 1980s. These eigenfunctions produce a discontinuity in the integrated density of states at the corresponding energy by linear repetitivity, and therefore the size of the discontinuity can then be estimated from below by the patch frequency corresponding to the support of the eigenfunction in question. [joint work with D. Damanik, M. Embree, and M. Mei.]