

On the degenerate spectral gaps of the one-dimensional Schroedinger operators with periodic point interactions

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We discuss the spectrum of the one-dimensional Schrödinger operator which possesses three point interactions in the basic period cell and investigate its band structure. We suppose that each point interaction on a lattice is given by a rotation or is defined by the Dirac delta function. Under some particular assumption on a lattice, we discuss the coexistence problem. Namely, we determine whether or not the j th spectral gap is degenerate for a given natural number j .