Eigenstates of a particle in an array of hexagons with periodic boundary condition

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Abstract
In this paper the problem of a particle in an array of hexagons with periodic boundary condition is solved. Using the projection operators, we categorize eigenfunctions corresponding to each of the irreducible representations of the symmetry group $D_6$. Based on these results, the Dirichlet and Neumann boundary conditions are discussed.

Keywords: potential well, hexagon, Schrödinger equation, symmetry group, character table, irreducible representation, projection operator

For full article, refer to the Persian section