

Energy Gap for Some Hamiltonian Systems Describing Polaron Systems Obtained via Invariant Eigen-operator Method

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Abstract: Based on the invariant eigen-operator method (IEO) [Phys. Lett. A 321 (2004) 75] we derive the exact energy gap for some Hamiltonians, which describe some polaron systems. The result shows that in some cases the IEO method, stemming from the Heisenberg approach, is more direct and convenient for deriving the energy-level gap formula than via the approach of solving the Schrödinger equation.

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Key words: polaron system, invariant eigen-operator, energy gap

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