Numerical Modeling for Generating the Bound State Energy via a Semi Inverse Variational Method Combined with a B-Spline Type Basis

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Abstract

This research concerns with the development of a linear three-dimensional numerical model in a quantum environment. We use the semi inverse variational method together with B-spline bases to extract the structures of bound states of the Schrödinger equation. The model performances are demonstrated for the Coulomb type problem. From realistic examples, some state configurations are presented to illustrate the effectiveness and the exactitude of the proposed method.

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