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Regularized Integrodifferential Equations Approach

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The traditional two-variable few-body integrodifferential equations approach is modified by introducing boundary conditions in both the hyperradial and hyperangular variables. In addition, the inclusion of the effects of higher partial waves of the interaction potential is also modified. The new approach reproduces results obtained by an exact method for boson systems. These results confirm that many-body correlations in large systems are very small in systems with short-range interactions and that effect of higher partial waves are adequately accounted for by the revised hypercentral potential.

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