



Two-body binding energy calculation using homogeneous and inhomogeneous Lippmann-Schwinger equations within three dimensional approach

F Tahamipour Zarandi*, and M Hassanvand

Department of Physics, Isfahan University of Technology, Isfahan, Iran

E-mail: f.tahamipourzarandi@ph.iut.ac.ir

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Abstract

Bound state equations are mostly solved in partial-wave truncated basis. In partial-wave method, we need to consider many partial waves to reach the accurate results. In this paper, we avoid partial-wave decompositions and directly work with vector variables to solve homogeneous and inhomogeneous Lippmann-Schwinger equations. We study binding energies of deuteron and atomic hydrogen using three-dimensional approach.

Keywords: Lippmann-Schwinger equation, homogeneous, inhomogeneous, three-dimensional approach, deuteron, atomic hydrogen

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