

Abstract Submitted
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Variational Calculations of the Ps-Ps System¹ GABRIEL MEDRANO, S. J. WARD, University of North Texas, P. VAN REETH, University of College London — Knowing the value of the o-Ps-o-Ps scattering length has enabled it to be shown that it is possible to create a Ps Bose-Einstein Condensate [1,2]. We intend to use the Kohn and inverse Kohn variational methods to calculate accurately the scattering length and phase shifts for o-Ps-o-Ps scattering, which is a four-body scattering system made entirely of leptons. These two methods, with flexible trial functions, have provided accurate results for other four-body scattering systems, such as Ps-H scattering [3]. We have determined the ground-state energy and binding energy of Ps₂ using the Rayleigh-Ritz variational method with a short-range interaction trial wave function [4]. We plan to investigate the variation of the energies with different trial wave functions.

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