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Variational calculations of low-energy elastic Ps-H scattering[1]
DENTON WOODS, S.J. WARD, University of North Texas, P. VAN REETH, University College London — Ps-H scattering is of interest, as it is a fundamental 4-body Coulomb problem, and measurements have been made of Ps scattering with atoms and molecules. We have computed accurate $^{1,3}S$ and $^{1,3}P$ phase shifts for elastic Ps-H scattering using the Kohn, inverse Kohn, generalized Kohn and complex Kohn variational methods [1-3]. We improved upon the numerics of the previous accurate Kohn and inverse Kohn variational calculations [4]. Using the quantum defect theory for the van der Waals interaction [5], we computed the ^1P and ^3P scattering lengths. We are in the process of computing the ^1D-wave phase shifts [3].

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