

Abstract Submitted  
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**Low-energy S-wave Positronium-Hydrogen Collisions**<sup>1</sup> D. WOODS, S.J. WARD, University of North Texas, P. VAN REETH, University College London — In response to proposed measurements discussed by St. Olaf's positron group of low-energy positronium-alkali atom scattering [1], we begun a theoretical investigation of Ps scattering. Recently, we computed singlet and triplet S-wave phase shifts for low-energy elastic Ps-H scattering process. This process is of interest since it is a fundamental four-body Coulomb process. We employed the Kohn variational method and a number of variants on the method, namely, the inverse Kohn, generalized Kohn, and the complex Kohn for the S-matrix and T-matrix. We compare our results to the earlier Kohn and inverse Kohn calculations [2,3].

[1] Jason Engbrecht, *Private Communication*.

[2] P. Van Reeth and J. W. Humberston, *J. Phys. B* **36**, 1923 (2003).

[3] P. Van Reeth and J. W. Humberston, *Nucl. Instrum. Methods Phys. Res. A* **221**,140 (2004).

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S.J. Ward  
University of North Texas

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