

Abstract Submitted
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High-lying resonances in Ps-H scattering below the $H^- - e^+$ threshold¹ Z.-C. YAN, University of New Brunswick Fredericton, New Brunswick, Canada, YEW KAM HO, Institute of Atomic and Molecular Sciences, Academia Sinica, Taipei, Taiwan — In this work, we carry out an investigation of high-lying S -wave resonances in Ps-H scattering below the ($H^- - e^+$) threshold. The method of complex-coordinate-rotation [1] is used together with employing highly correlated wave functions containing all six inter-particle coordinates. Using such Hylleraas-type bases [2] up to 6412 terms, the energy positions and widths up to the $7S$ state in the Rydberg series converging to the H^- threshold are calculated. The high-lying resonances from our present calculations are fitted to a quantum defect formula, and from which the energies of even higher members of the Rydberg series can be deduced. [1]. Y. K. Ho, *Phys. Rept.* **99**, 1 (1983). [2]. Z.-C. Yan and G. W. F. Drake, *J. Phys. B* **30**, 4723 (1997).

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Yew Kam Ho
Institute of Atomic and Molecular Sciences, Academia Sinica, Taipei, Taiwan

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