

Abstract Submitted
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Energy levels and mid-infrared spectrum of Rydberg states of triatomic hydrogen¹ JIA WANG, JILA and Department of Physics, University of Colorado, Boulder, VIATCHESLAV KOKOOLINE, Department of Physics, University of Central Florida, CHRIS GREENE, JILA and Department of Physics, University of Colorado, Boulder — In previous studies[1] of the dissociative recombination of H_3^+ , the rigid rotator approximation, and in some cases the adiabatic hyperspherical approximation as well, were adopted by calculations of the rovibrational states of H_3^+ . In this work, the Coriolis interaction is considered, and accurate rovibrational energy levels of H_3^+ are calculated, with the aim of eventually improving the approximations presently used in recombination theory. We also use these accurate rovibrational states of H_3^+ to study the energy levels and mid-infrared spectrum of nonpenetrating H_3 Rydberg states. [1] V. Kokoouline and C. H. Greene, Phys. Rev. A 68, 012703 (2003).

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Jia Wang
JILA and Dept. of Phys. University of Colorado, Boulder

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