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Quantum defect analysis of $H_3^+ + e^-$ system[1] JIA WANG, CHRIS GREENE, JILA and Department of Physics, University of Colorado, Boulder — The neutral triatomic hydrogen molecule (H_3) plays an important role in astrophysics because its cation form H_3^+ acts as a proton donor in chemical reactions occurring in interstellar clouds. As the simplest triatomic neutral molecule, H_3 also attracts fundamental interest. Treating the system of H_3 molecule as a Rydberg electron attaching to a H_3^+ ion, we carry out *ab initio* study of the system with quantum defect theory, improving on some approximations used in existing theory.

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