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Dissociative recombination of N_2H^{+1} VALERY NGASSAM, Universite of California Davis, ANN E. OREL, University of California Davis — Dissociative recombination of N_2H^+ plays an important role in astrochemistry since it is thought to be the main route for N_2 formation. A one-dimensional study of DR of N_2H^+ has failed to explain experimental results. Studies of dissociative recombination and attachment in other polyatomic systems have shown that simple one-dimensional models can fail to capture the correct dissociation dynamics. We have carried out an investigation of this multidimensional effect on N_2H^+. We study the system in limited dimensionality (*i.e.* as a diatomic N_2-H^+) and then contrast this with multidimensional studies. We perform electron scattering calculations using the complex Kohn variational method to determine the resonance parameters of this system. The time dependent wave packet method is used to solve the one dimension problem and the Multi-Configuration Time-Dependent Hartree method is used for the wave packet propagation on the multi-dimensional resonant potential energy surfaces. We report the computed DR cross sections compared to available experiments and we discuss the mechanisms leading to dissociation into the various product channels.

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