

Abstract Submitted
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Simplified model to describe the dissociative recombination of linear polyatomic ions of astrophysical interest¹ SAMANTHA FONSECA DOS SANTOS, NICOLAS DOUGUET, University of California Davis, VIATCHESLAV KOKOOLINE, University of Central Florida, ANN OREL, University of California Davis — We will present theoretical results on the dissociative recombination (DR) of the linear polyatomic ions HCNH^+ , HCO^+ and N_2H^+ . Besides their astrophysical importance, they also share the characteristic that at low electronic impact energies their DR process happens *via* the indirect DR mechanism. We apply a general simplified model successfully implemented to treat the DR process of the highly symmetric non-linear molecules H_3^+ , CH_3^+ , H_3O^+ and NH_4^+ to calculate cross sections and DR rates for these ions. The model is based on multichannel quantum defect theory and accounts for all the main ingredients of indirect DR. New perspectives on dissociative recombination of HCO^+ will also be discussed, including the possible role of HOC^+ in storage ring experimental results.

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