Renner-Teller effects in HCO$^+$ dissociative recombination$^1$ VI-
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University of Colorado — A theoretical description of the dissociative recombina-
tion process for the HCO$^+$ ion suggests that the Renner-Teller coupling between
electronic and vibrational degrees of freedom plays a vital role. This finding is con-
sistent with a recent study of this process for another closed-shell molecule, the H$_3^+$
ion, where Jahn-Teller coupling was shown to generate a relatively high rate. The
theoretical cross section obtained here for the dissociative recombination of HCO$^+$
exhibits encouraging agreement with a merged-beam experiment.

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