

Abstract Submitted
for the DAMOP06 Meeting of
The American Physical Society

Renner-Teller effects in HCO^+ dissociative recombination¹ VIATCHESLAV KOKOOLINE, IVAN MIKHAYLOV, Department of Physics, University of Central Florida, ASA LARSON, Department of Physics, Stockholm University, STEFANO TONZANI, CHRIS GREENE, Department of Physics and JILA, University of Colorado — A theoretical description of the dissociative recombination 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 consistent 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.

¹This work is supported by NSF-ITR grant #PHY-0427460

Viatcheslav Kokoouline
Department of Physics, University of Central Florida

Date submitted: 27 Jan 2006

Electronic form version 1.4