Abstract Submitted
for the DAMOP05 Meeting of
The American Physical Society

Measurement of alignment dependence in single ionization of hydrogen molecules by fast protons[1] NORA G. JOHNSON, E. WELLS, Department of Physics, Augustana College, Sioux Falls, SD 57197, K.D. CARNES, I. BEN-ITZHAK, J.R. Macdonald Laboratory, Department of Phyics, Kansas State University, Manhattan, KS 66506 — Relative cross sections for the 4 MeV H^+ + D_2 $(^1\Sigma_g^+)$ $\rightarrow$ $D_2^+(1s\sigma)$ + e^- process are measured as a function of the molecular alignment during the interaction. The angle between the molecular axis and the projectile is obtained by using a momentum imagining technique and isolating the events in which the $D_2^+(1s\sigma)$ ions are excited to the vibrational continuum of the electronic ground state and subsequently dissociate. While several theoretical models suggest different angular distributions, and anisotropic distributions have been observed for double ionization of D_2, our preliminary results do not show significant anisotropies.

[1]Supported by the Chemical Sciences, Geosciences and Biosciences Division, Office of Basic Energy Sciences, Office of Science, U.S. Department of Energy, NASA and the South Dakota Space Grant, and the Augustana Research / Artist Fund

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Date submitted: 28 Jan 2005 Electronic form version 1.4