Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Double Resonance Spectroscopy of the $B"\overline{B}^1\Sigma_u^+$state of H_2above the double well barrier.[1] ROBERT EKEY, AARON MARKS, ELIZABETH MCCORMACK, Bryn Mawr College, Bryn Mawr, PA 19010 — Double resonance spectroscopy via the$EF^1\Sigma_g^+, v'_{EF} = 6, J'$ state has been used to probe the rovibrational the *ungerade* double-well $B"\overline{B}^1\Sigma_u^+$state of H_2. Many transitions to levels of the outer-well and the combined inner and outer-well above the barrier have been observed for the first time by detecting both molecular and atomic ion production as a function of energy by using a time of flight mass spectrometer. While significant perturbations are observed in the energy region above the double-well barrier, assignments to states with dominant inner and outer-well characteristics can still be made. Distinct dynamical behaviors of the levels below, at and above the barrier have also been observed.

[1]This work was supported by a grant from the National Science Foundation (PHY-0140296).

Robert Ekey
Bryn Mawr College, Bryn Mawr, PA 19010

Date submitted: 30 Nov 2005 Electronic form version 1.4