ROTATIONAL SPECTRA AND $AB\ INITIO$ CALCULATIONS OF THE Ne-H_2CO VAN DER WAALS COMPLEX

DEAN COURT and WOLFGANG JÄGER, *Department of Chemistry, University of Alberta, Edmonton, AB, Canada, T6G 2G2*.

Rotational spectra of the Ne-H_2CO van der Waals complex were measured between 4 and 26 GHz using a pulsed jet cavity Fourier transform microwave spectrometer. The isotopomers studied include those of H_2CO and D_2CO with two isotopes of Ne. Deuterium nuclear quadrupole hyperfine structure was resolvable for some transitions and analyzed. Rotational and centrifugal distortion constants were determined and used to calculate structural parameters. Structural parameters from $ab\ initio$ calculations on the MP2 level will be compared with experimental results.