A MICROWAVE INVESTIGATION OF THE CO_2-PYRIDINE VAN DER WAALS COMPLEX

J. L. DORAN, B. J. HON, and K. R. LEOPOLD, *Department of Chemistry, University of Minnesota, Minneapolis, MN 55455.*.

Rotational spectra of the NC_4H_4-CO_2 dimer and four isotopologs have been observed using Fourier transform microwave spectroscopy. Analysis of the rotational and quadrupole coupling constants will be presented. Preliminary structural analysis indicates the complex is planar; the CO_2 axis is perpendicular to the C_2 axis of pyridine with a C-N van der Waals bond length of 2.83 $\AA$. This complex provides the first step in the microsolvation of an organic solute using CO_2 as a solvent and therefore may be useful in understanding solute-solvent interactions in supercritical CO_2.