

ABSORPTION SPECTROSCOPY of the $n = 0 \rightarrow n = 2$ PSEUDOROTATIONAL BAND in TETRAHYDROFURAN

DMITRY G. MELNIK, SANDHYA GOPALAKRISHNAN, TERRY A. MILLER, *The Ohio State University, Dept. of Chemistry, Laser Spectroscopy Facility, 120 W. 18th Avenue, Columbus, Ohio 43210*; REBECCA A. H. BUTLER and FRANK C. DE LUCIA, *The Ohio State University, Dept. of Physics, Microwave Laboratory, 174 W. 18th Avenue, Columbus OH 43210*.

The previously reported^a rotational structure observed in the region of 193-335 GHz using the pulsed jet FASSST scan spectrometer in tetrahydrofuran (THF) is assigned as originating from pseudo-rotational bands. A total of 121 lines were observed of which 112 lines were assigned to $n = 0 \rightarrow n = 2$ band, and 9 are tentatively assigned to $n = 1 \rightarrow n = 2$ band using the molecular constants of THF reported in microwave studies^b. All available data from the microwave and the present studies were globally fit to produce an improved set of molecular constants. The origin of the $n = 0 \rightarrow n = 2$ is determined to be equal to 269613.25 MHz. An experimentally observed deviation of the selection rules from those previously derived^c is discussed.

^aD.Melnik, S.Gopalakrishnan, T.A.Miller, and F.C.De Lucia, 54th International Symposium on Molecular Spectroscopy

^bR. Meyer, J. C. Lopez, J. L. Alonso, S. Melandri, P. G. Favero, and W. Caminati *J. Chem. Phys.*, 111, 7871 (1999)

^cJ. A. Greenhouse and H. L. Strauss, *J. Chem. Phys.* 50, 124 (1969)