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

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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.

[a] D.Melnik, S.Gopalakrishnan, T.A.Miller, and F.C.De Lucia, 54th International Symposium on Molecular Spectroscopy

[b] R. Meyer, J. C. Lopez, J. L. Alonso, S. Melandri, P. G. Favero, and W. Caminati J. Chem. Phys, 111, 7871 (1999)

[c] J. A. Greenhouse and H. L. Strauss, J. Chem. Phys. 50, 124 (1969)