TERAHERTZ SPECTROSCOPY OF THE GROUND STATE OF METHYLAMINE (CH_3NH_2)

SHANSHAN YU and BRIAN J. DROUIN, *Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA 91109.*

Measurements of the torsion-rotation spectrum of methylamine have been extended into the terahertz region. The accuracy of these measurements is estimated to be ranging from 50 kHz to 100 kHz.. About 1000 lines were assigned based on a SPCAT prediction. The Hamiltonian model follows the group-theoretical formalism developed by Ohashi and Hougen[a]. These assigned lines were fitted together with all prior available data (1800 lines) using the SPFIT program, and improved molecular parameters were obtained for CH_3NH_2 by adding the new measurements. New frequency and intensity predictions have been made based on the obtained molecular parameters. This Hamiltonian model may facilitate future studies on protonated methanol ($CH_3OH_2^+$).

[a]N. Ohashi and J. T.Hougen J. Mol. Spectrosco. 121, 474 (1987).