

MILLIMETER WAVE SPECTRUM OF NITROMETHANE

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A new study of the millimeter wave spectrum of nitromethane CH_3NO_2 is reported. The new measurements covering the frequency range from 49 GHz to 236 GHz have been carried out using spectrometer in IRA NASU (Ukraine). The transitions belonging to the $m \leq 8$ torsional states have been analyzed using the RAM36 program^a, which has been modified for this study to take into account the quadrupole hyperfine structure due to presence of the nitrogen atom. The dataset consisting of 5838 microwave line frequencies and including transitions with J up to 50 was fit using a model consisting of 93 parameters and weighted root-mean-square deviation of 0.89 has been achieved. In the talk the details of this new study will be discussed.

^aV. Ilyushin, Z. Kisiel, L. Pszczółkowski, H. Mäder, J. T. Hougen *J. Mol. Spectrosc.* 259 (2010) 26-38.