THz SPECTROSCOPY OF EXCITED TORSIONAL STATES OF MONODEUTERATED METHYL FORMATE ($DCOOCH_3$)

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Recently, a measurement of the rotational spectrum of $DCOOCH_3$ has been carried out in the frequency range from 0.85 to 1.5 THz at Jet Propulsion Laboratory (JPL) (Duan et al. 2015). These JPL data and the available spectroscopic millimeter- and submillimeter-wave data (Margulès et al. 2010 and references therein) of the ground state were analyzed using the Rho Axis Method (RAM) (Kleiner 2010).

At present, a new analysis of JPL lines of $DCOOCH_3$ in the first excited v_t=1 torsional states is undertaken. This analysis may help the future identification of v_t=1 lines in the interstellar and circumstellar media as was carried out for the v_t=0 lines in Orion KL (Margulès et al. 2010). In this communication, the progress of this study is presented as well as a short outline of the spectral analyses accomplished for other methyl formate isotopologues. [a]

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[a]This research is supported by the FIS2014-53448-C2-2-P project (MINECO, Spain), the French PCMI (Programme National de Physique Chimie du Milieu Interstellaire), and the National Natural Science Foundation of China (Grant No. 11174098). Portions of this work is carried out at the Jet Propulsion Laboratory, California Institute of Technology, under contract with the National Aeronautics and Space Administration. Government sponsorship is acknowledged.