

Microwave spectroscopy of $^{13}\text{CH}_3\text{OH}$

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CH_3OH is one of the most known interstellar molecules. As it is quite abundant, it is no doubt that its isotopologues are also good candidates as interstellar weeds. In this study, we carried out a microwave spectroscopic study of $^{13}\text{CH}_3\text{OH}$. Recommended rest frequencies based on the reviewed previous microwave results are compiled by Xu and Lovas. However, many experimental data are missing and the excited torsional state is limited up to the first excited state. We wish to supplement the experimental data and revise the analysis.

The microwave experiments below and above 40 GHz were carried out with conventional Stark- and source-modulation spectrometers, respectively at room temperature. Data up to 200 GHz and 215-225 GHz were accumulated without gaps. The bottom figure is an example of our spectrum in the 215 GHz region, showing assigned lines as well as unassigned lines.

Analysis has been done with RAM Hamiltonian. The detailed molecular constants will be reported.

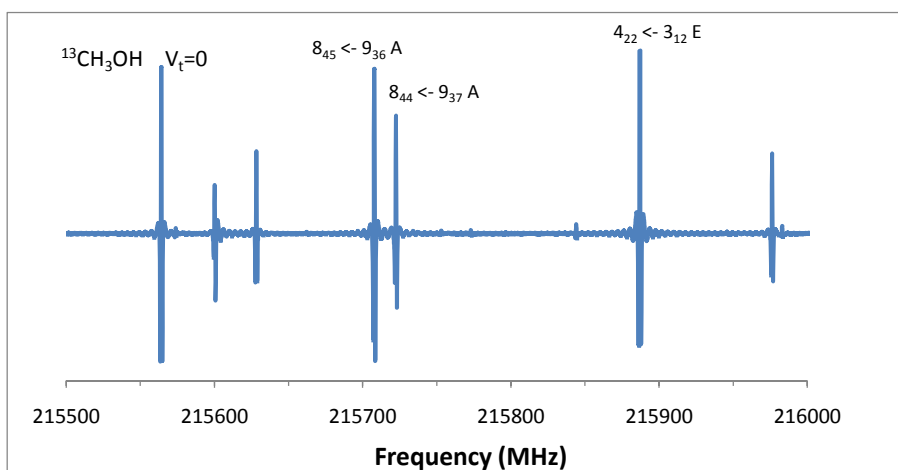


Figure 1: The spectrum of $^{13}\text{CH}_3\text{OH}$ in the 215 GHz region.

References

- [1] Li-Hong Xu, F. J. Lovas, *J. Phys. Chem. Ref. Data*, 26(1) pp. 17-156 (1997)