

MICROWAVE SPECTRA OF METHYL FORMATE ISOTOPOMER ($\text{HCOO}^{13}\text{CH}_3$)

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Methyl formate is a well-known interstellar molecule found in the star-forming region. One possible methyl formate production reaction is the reaction of methanol with other chemical species. Since the methyl rotor is originated from the methanol and $^{13}\text{CH}_3\text{OH}$ has already been identified in space, it is quite likely to detect $\text{HCOO}^{13}\text{CH}_3$ in the near future. The microwave spectra of the methyl formate isotopomer ($\text{HCOO}^{13}\text{CH}_3$) could provide the rest frequencies as well as some indication about the production mechanism. We observed the microwave spectra of $\text{HCOO}^{13}\text{CH}_3$ by means of the FT-microwave spectrometer and the conventional source modulation spectrometer. The lines in the ground state were assigned and analyzed based on Hougen's tunneling matrix formulation.