

EXTENSION OF THE MILLIMETER AND SUBMILLIMETER SPECTRUM OF GLYCOLIC ACID: ROTATIONAL SPECTROSCOPIC STUDY OF A POTENTIAL PREBIOTIC INTERSTELLAR MOLECULE

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Glycolic acid ($\text{HOCH}_2\text{CO}_2\text{H}$) is a promising candidate for interstellar detection because it is the next step in molecular complexity from known interstellar species such as formic acid and methyl formate. Glycolic acid has also been confirmed as a product of the UV photolysis of simple ($\text{H}_2\text{O}:\text{CO}:\text{NH}_3$) interstellar ice analogues. Glycolic acid has two conformers: The SSC, or syn-syn-cis, conformer is the most stable species, followed by the trans conformer ATT, anti-trans-trans. Previous rotational spectral study of glycolic acid reported lines in the range of 113 – 318 GHz. We have extended the spectra of both the SSC and ATT conformers from 318 GHz to 1 THz using long-pathlength direct absorption flow cell spectroscopy. Here we will report on the spectroscopic results and the associated analysis for glycolic acid.