PROSPECTIVE WORK FOR ALMA: THE MILLIMETERWAVE AND SUBMILLIMETERWAVE SPECTRUM OF ^{13}C-GLYCOLALDEHYDE

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Glycolaldehyde has been identified in interstellar sources [a]. The relative abundance ratios of the three isomers (acetic acid) : (glycolaldehyde) : (methylformate) were estimated . The detection of $^{13}C_1$ and $^{13}C_2$ isotopomers of methylformate has been recently reported in Orion, as a result of the detailled labororatory spectroscopic study[b]. Therefore the spectroscopy of the ^{13}C isotopomers of glycolaldehyde is investigated in laboratory in order to provide data for an astronomical search. The instrument ALMA will certainly be a good instrument to detect them. Up to now, only the microwave spectra of $^{13}CH_2OH$-CHO and of CH_2OH-^{13}CHO have been observed several years ago in the 12-40 GHz range[c].

Spectra of both species are presently recorded in Lille in the 150-950 GHz range with the new submillimetre-wave spectrometer based on harmonic generation of a microwave synthesizer source, using only solid-state devices, and coupled to a cell of 2.2 m length[d]. The absolute accuracy of the line positions is better than 30 KHz. The rotational structure of the ground state and of the three first excited vibrational states has been observed. Two ^{13}C enriched samples were used. The analysis is in progress.

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