THE MICROWAVE SPECTROSCOPY OF AMINOACETONITRILE IN THE VIBRATIONAL EXCITED STATE

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Aminoacetonitrile (NH_2CH_2CN) is a potential precursor of the simplest amino acid, glycine and was detected toward SgrB2(N). [a] It is expected that the strongest transitions will be found in the terahertz region so that we have extended measurements up to 1.3 THz. [b] This study gave an accurate prediction of aminoacetonitrile up to 2 THz which is useful for astronomically search. This molecule has a few low-lying vibrational excited states and the pure rotational transitions in these vibrational excited states are expected to found. [c] We found a series of transitions with intensity of about 30%. Eighty-eight spectral lines including both *a*-type and *b*-type transitions were recorded in the frequency region of 400 - 450 GHz, and centrifugal distortion constants up to the sextic term were determined. Perturbation was recognized. We will report the current status of the analysis.

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[b] Y. Motoki, Y. Tsunoda, H. Ozeki, and K. Kobayashi, *Astrophys. J. Suppl. Ser.* **209**, 23 (2013).

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