

## THE MICROWAVE SPECTROSCOPY OF AMINOACETONITRILE IN THE VIBRATIONAL EXCITED STATE

CHIHO FUJITA, HIROYUKI OZEKI, *Department of Environmental Science, Toho University, Funabashi, Japan*; KAORI KOBAYASHI, *Department of Physics, University of Toyama, Toyama, Japan*.

Aminoacetonitrile ( $\text{NH}_2\text{CH}_2\text{CN}$ ) is a potential precursor of the simplest amino acid, glycine and was detected toward SgrB2(N). <sup>a</sup> 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. <sup>b</sup> This study gave an accurate prediction of aminoacetonitrile up to 2 THz which is useful for astronomical search. This molecule has a few low-lying vibrational excited states and the pure rotational transitions in these vibrational excited states are expected to be found. <sup>c</sup> 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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<sup>a</sup>A. Belloche, K. M. Menten, C. Comito, H. S. P. Müller, P. Schilke, J. Ott, S. Thorwirth, and C. Hieret, 2008, *Astronom. & Astrophys.* **482**, 179 (2008).

<sup>b</sup>Y. Motoki, Y. Tsunoda, H. Ozeki, and K. Kobayashi, *Astrophys. J. Suppl. Ser.* **209**, 23 (2013).

<sup>c</sup>B. Bak, E. L. Hansen, F. M. Nicolaisen, and O. F. Nielsen, *Can. J. Phys.* **53**, 2183 (1975).