MILLIMETER AND SUBMILLIMETER-WAVE SPECTRUM OF AMINOACETONITRILE (NH_2CH_2CN)

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Aminoacetonitrile (NH_2CH_2CN) draws an attention with respect to a synthesis of amino acid in interstellar space, as it is considered to be a direct precursor of the simplest amino acid, glycine. Recently the molecule was detected toward SgrB2(N) [a], in which spectral line frequencies are predicted on the basis of the previous millimeter-wave study[b]. We have measured pure rotational spectrum of aminoacetonitrile in the millimeter and the submillimeter-wave region. About 300 spectral lines including both a-type and b-type transitions were recorded up to 661 GHz, and centrifugal distortion constants up to the octic term were precisely determined. We had to reinvestigate most of the b-type transition lines due to wrong assignments in the previous study. The updated frequency catalogue of the aminoacetonitrile are now accurate enough for astronomically search up to 1000 GHz.

[a] A. Belloche et al., *A&A*, 482, 179 (2008)
[b] M. Bogey, H. Dubus and J. C. Guillmin, *J. Mol. Spectrosc.*, 143, 180 (1990)