

SUB-DOPPLER AND FTMW SPECTROSCOPY OF HC₃N ISOTOPOLOGUES

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We report results of precise sub-Doppler spectroscopy of HC₃N, H¹³CCCN, HC¹³CCN, HCC¹³CN and HCCC¹⁵N at 45–510 GHz with Lamb-dip spectrometer of IAP RAS. Hf structure of rotational transitions of all above species below 27 GHz as well as inversion transitions of NH₃(1,1) and (2,2) were measured using FTMW spectrometer of University of Hannover. New comparison of HC₃N and NH₃ laboratory frequencies with radio astronomical observations of dark clouds^{a,b} shows an upper limit of m_e/m_p variation in our Galaxy as $\leq 3 \cdot 10^{-9}$.

^aS. A. Levshakov, A. V. Lapinov, C. Henkel et al. *Astron. Astrophys.* **524**, A32, 2010.

^bS. A. Levshakov, P. Molaro, A. V. Lapinov et al. *Astron. Astrophys.* **512**, A44, 2010.