

Abstract Submitted
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Sensitivity of microwave spectra of molecules to variation of electron-to-proton mass ratio¹ MIKHAIL KOZLOV, Petersburg Nuclear Physics Institute, Russia, ALEXANDER LAPINOV, Institute of Applied Physics, Russia, SERGEY LEVSHAKOV, Ioffe Physical-Technical Institute, Russia — We estimate sensitivity coefficients Q_μ to variation of the electron-to-proton mass ratio $\mu = m_e/m_p$ for microwave transitions in partly deuterated ammonia and for Λ -doublet transitions in light diatomics. For NH_2D and ND_2H molecules the rotational and inversion degrees of freedom are mixed. Because of that, the coefficients Q_μ strongly depend on the quantum numbers of the transition. The same applies to the Λ -doublet transitions in such molecules as CH and OH, where electron spin decouples from the molecular axis as rotational quantum number J increases. Microwave lines with large coefficients Q_μ can be used for astrophysical and laboratory search for possible variation of the constant μ .

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