ON THE NEW PRECISE SPECTROSCOPIC STUDY OF THE CH_3D MOLECULE

O. N. ULENIKOV, G. A. ONOPENKO, N. E. TYABAEVA, *Tomsk State University, Tomsk, Russia*; J. SCHRODERUS, S. ALANKO, and R. ANTTILA, *University of Oulu, Finland*.

On the basis of recorded (Oulu, Finland) high resolution Fourier transform spectra (ν_3, ν_5, and ν_6 bands) and of "supercombination differences" method[a] A_1–A_2 (K=3) splittings were first time determined in the ground vibrational state of the $^{12}CH_3D$ molecule for the states with $10 < J < 22$. Problem of simultaneous determination of the $\tilde{\epsilon}$ and $\tilde{h}_3$ parameters which are responsible for such splittings is solved on the basis both of theoretical calculation and of analysis of resonance interactions in the recorded experimental spectra. Numerous peculiarities in the spectra of the ν_3, ν_5, and ν_6 bands (in particular A_1–A_2 splittings for the K=1,2,3,4,5,6,7, and other effects) are discussed. Analogous problems for the $^{13}CH_3D$ molecule are considered.

[a] O.N. Ulenikov, S. Alanko, M. Koivusaari, and R. Anttila, *Chem. Phys. Lett.* **268**, p.242-248 (1997)