“SUPERCOMBINATION DIFFERENCES” AS THE METHOD OF DETERMINATION OF $A_1$–$A_2$ SPLITTINGS IN THE GROUND VIBRATIONAL STATES OF SYMMETRIC TOP MOLECULES: CHD$_3$ MOLECULE

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“Supercombination differences” method was derived in order to determine the $A_1$–$A_2$ ($K'=3$) ground state splittings in symmetric top molecules from their infrared spectra, and was applied to study of CHD$_3$ molecule on the base of high resolution Fourier transform spectra of its 12 absorption bands. Possibility of simultaneous determination of $\epsilon$ and $h_3$ ambiguous parameters of Watson’s ambiguity theory is discussed. It is shown that this problem can be positively solved on the base of analysis of high resolution rotational structure of the $\mu_5$ band. New set of ground state energies was determined, which allowed us to explain some earlier unexplained peculiarities in infrared spectra of CHD$_3$. 