THE HIGH RESOLUTION INFRARED SPECTRUM OF CH_3D IN THE REGION 900 - 3200 cm^{-1}

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The high resolution absorption spectrum of CH_3D in the region 900 - 3200 cm^{-1} has been revisited on the basis of new long path experimental data recorded with the Fourier transform spectrometer at Kitt Peak. A theoretical model used previously for spherical rotors has been adapted for symetric top molecules in order to analyze the vibrational polyads of CH_3D simultaneously. The Triad-GS, Nonad-GS and Nonad-Triad band systems have been investigated.

The standard deviation achieved for 3377 line positions of the Triad was 0.56 10^{-3} cm^{-1}, representing an improvement of one order of magnitude with respect to the most recent analysis. The standard deviation achieved for 2335 line positions of the Nonad was 3.15 10^{-3} cm^{-1}, representing the first global analysis of such a complex system of nine interacting bands. Intensities of the Triad and Nonad have been fitted as well. The hot band intensities were estimated through direct extrapolation of the Triad dipole moments.