FAR-INFRARED LASER STARK SPECTROSCOPY OF $^{13}CD_3OD$

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The Stark spectrum of $^{13}CD_3OD$ has been investigated in the far-infrared region using the HCN and DCN lasers. The spectra were taken at room temperature for both parallel and perpendicular polarizations using electric fields up to 60 000 $\frac{V}{cm}$. An extensive series of absorption lines observed with the 337 μm line has been assigned to the J = 9 to 15 members of the $K = 5 \leftarrow 4\ E_2$ Q-branch in the v_t = 1 torsional state[a]. Further analysis of this Q-branch multiplet has yielded the branch origin, ν_0 = 882 847.7 MHz, and expansion coefficients, a = 93.6785 MHz and b = −0.2689 MHz. An R-branch transition observed at 337 μm has been assigned as $J_K = 9_7 \leftarrow 8_6\ A\ v_t$ = 0. Two families of resonances observed with the 195 μm line have been tentatively identified as members of the Q-branch multiplet $J_K = J_7 \leftarrow J_8\ E_2\ v_t$ = 2 for J = 11 and 12. Zero-field frequencies for all assigned transitions are given with improved accuracy over those calculated from the available molecular constants.

[a] M. Jackson, G. R. Sudhakaran, E. Gansen, *J. Mol. Spectrosc.*, **176**, 439-441 (1996).