The calculation is based on the method described in Pearson et al. 2012, Journal of Molecular spectroscopy, in press. DOI 10.1016/j.jms.2012.06.012. Additional data from


was used in the analysis. CH$_2$DOH is an asymmetric top with a ground state comprised of three sub-states $e_0$, $e_1$ and $o_1$. These are denoted with $v=0,1,2$, respectively. The lower $K_a$ levels are strongly interacting and should not be trusted beyond $J=30$ where the stated accuracy will be much worse than reality. $K_a$ values to 10,9,9 in $v=0,1,2$ were connected. Calculated levels with higher $K_a$ value will deviate strongly in the absolute energy. This means any transition changing $K_a$ above $K_a=10,9,9$ in $v=0,1,2$ will not be accurate with the exception of the $e_1$ $K_a=11$ to $o_1$ $K_a=10$ band where the relative energies are correct. The a-type R branches to K=11 were
included in the data and are calculated reasonable well. Because of the poor extrapolative power of the model the accuracy of predictions rapidly deteriorates above 2 THz and for $K_a > 10.9,9$.

The intensites were calculated with the first order Fourier term of the dipole from normal methanol. The strongly allowed bands are reasonably well reproduced, but the weaker ones are not as well re-produced. Extreme caution should be used in determining columns (or concentrations) directly from b-type and c-type transitions as significant errors can occur. The a-type transitions should be much more reliable for column determinations.