

CHIRPED-PULSED FTMW SPECTRUM OF 4-FLUOROBENZYL ALCOHOL. STRUCTURE AND TORSIONAL MOTIONS IN THE GROUND ELECTRONIC STATE PHASE^a

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Previous studies of 4-fluorobenzyl alcohol (4FBA) in the gas phase have revealed the existence of tunneling splittings in its high resolution electronic spectrum. These could be attributed either to the ground S_0 state, or the excited S_1 state, or both. Motivated by this finding, we report here a study of the CP-FTMW spectrum of 4FBA. Its pure rotational spectrum was collected using a series of 250 MHz chirped pulses, over the frequency range of 6.5-18 GHz. Analysis of this data shows that 4FBA has a gauche structure and yields the V_2 barrier for CH_2OH torsion, from which the predicted tunneling splittings in the ground state have been extracted.

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