Microwave-Microwave Double-Resonance Assignment Of The *Gauche* Conformer Of Methyl Vinyl Ether

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An electric-resonance optothermal spectrometer has been used to perform microwave-microwave double-resonance measurements on the less stable conformer of methyl vinyl ether. The measured rotational constants are consistent with a *gauche* structure. The dipole moment components for this conformer have been measured using the Autler-Townes splitting of states that occcurs in the presence of a strong, resonant microwave field. Rotational constants, dipole moments and the threefold barrier to internal rotation, V_3, will be reported. We have searched in double-resonance for the second tunneling component for the equivalent *gauche* conformer but have found no transitions. This suggests the tunneling gap is larger than about 2GHz.