PRECISE DETERMINATION OF DIPOLE MOMENT OF METHANOL BY MICROWAVE STARK SPECTROSCOPY

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In this work, precise Stark effect measurements have been carried out on several transitions in the first three torsional states of methanol. The Stark shifted transition frequencies for a wide range of steady electric field have been measured with an accuracy of about 10 kHz. Detailed analysis of the data allowed the determination of the dipole moment components in the first three torsional states of the ground vibrational state and the corresponding zero field frequencies have been determined. The present study represents the measurement of the most accurate dipole moment values of methanol.