MICROWAVE SPECTRUM OF HEXAFLUOROISOPROPANOL

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Hexafluoroisopropanol (HFIP) is an important organic solvent and probably the only solvent which can dissolve polythene. IR studies, on this molecule confirm the existence of antiperiplanar (**ap**) and synclinical (**sc**) conformers[a]. We have observed pure rotational spectrum of this molecule and the fitted rotational constants (A= 2105.1208(11) MHz, B= 1053.9942(3) MHz, C= 932.3398(3) MHz) confirm the presence of **ap** conformer. There are many other observed lines which most probably corresponds to **sc** structure and due to the large amplitude motion of H-atom, some of these transitions show tunneling splitting. Work is in progress for the deuterated (OD) and C-13 isotopologues of the monomer. HFIP is expected to exhibit interesting hydrogen bonding properties and we are planning to investigate them by studying its complex with water. The results will be presented in this talk.

[a] H. Schaal, T. Höber, and M. A. Suhm, J. Phys. Chem. A 104, 265 (2000).