

DOES WATER PREFER TO DONATE A PROTON TO AN F OR TO a Cl ATOM? - A ROTATIONAL STUDY OF CH₃CHClF...H₂O

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We measured the molecular beam Fourier transform microwave spectra of six isotopologues of the 1:1 adduct of CH₃CHClF with water. The water prefers to form an O-H...F rather than an O-H...Cl hydrogen bond. This is exactly the contrary of what observed in the chlorofluoromethane-water adduct, where a O-H...Cl link was formed^a. Besides the rotational constants, the quadrupole coupling constants of the chlorine atom have been determined. In addition, information on the internal dynamics has been obtained.

^aW.Caminati, S.Melandri, A.Maris and P.Ottaviani, *Angew. Chem. Int. Ed.* 45, 2438-2442 (2006)