# Lone–Pair···π interactions are competitive with weak hydrogen bond and halogen bond: the rotational spectrum of chlorotrifluoroethylene–water

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We investigated the Fourier transform microwave rotational spectra of several isotopologues of chlorotrifluoroethylene–water. We could precisely determine the configuration and structure of the complex, showing that a lp…π interaction between the water oxygen lone pair and the π-system of the iperhalogenated ethene molecule is the one which binds together the two subunits. In the molecular complex under analysis, this kind of interaction (see the Figure below) overwhelms much well-known interactions such as weak hydrogen bond and halogen bond.