

MICROWAVE SPECTRA AND STRUCTURES OF $\text{H}_2\text{O} \cdots \text{AgF}$

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A Balle-Flygare FT-MW spectrometer coupled to a laser ablation source has been used to measure the pure rotational spectra of $\text{H}_2\text{O} \cdots \text{AgF}$. Generation is via laser ablation (532 nm) of a silver rod in the presence of SF_6 , argon, a low partial pressure of H_2O and the molecules are stabilized by supersonic expansion. The spectra of eight isotopologues have been measured. Rotational constants, B_0 and C_0 , and the centrifugal distortion constant, Δ_J have been determined. Isotopic substitutions are available at the silver, oxygen and hydrogen atoms. The spectra are consistent with a linear arrangement of oxygen, silver and fluorine atoms and the structure is either C_{2v} planar at equilibrium or C_s pyramidal but with a low potential-energy barrier to planarity such that the $v = 0$ and 1 states associated with the motion that inverts the configuration at the O atom are well separated.