EFFECTS OF $^2$H ISOTOPIC SUBSTITUTION ON THE ROTATIONAL SPECTRA AND POTENTIAL SPLITTING IN THE OH-$OH_2$ COMPLEX: FOURIER TRANSFORM MICROWAVE SPECTRA OF OD-$OH_2$

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Rotational spectra of OD-$OH_2$ have been recorded using Fourier transform microwave spectroscopy with complete resolution of hyperfine structure from both the deuterium and the water protons. The spectra were analyzed according to the model of Marshall and Lester [*J. Chem. Phys.* **121**, 3019 (2004)], which simultaneously accounts for the $^2A'$ and $^2A''$ potential surfaces and allows for partial quenching of the electronic orbital angular momentum in the complex. Preliminary fits give a potential splitting, $\rho$, -142.62360(8) cm$^{-1}$. This value is 3.93667 cm$^{-1}$ smaller in magnitude that of parent complex, and the reduction is interpreted as arising from differences in vibrational averaging. This talk will also present a brief study of low magnetic field non-linear Zeeman effects arising in the presence of magnetic super-hyperfine structure.