ADDITIONAL MEASUREMENTS AND ANALYSES OF H$_{2}^{17}$O AND H$_{2}^{18}$O

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Historically the analysis of the spectrum of water has been a balance between the quality of the data set and the applicability of the Hamiltonian to a highly non-rigid molecule. Recently, a number of different non-rigid analysis approaches have successfully been applied to $^{16}$O water resulting in a self-consistent set of transitions and energy levels to high J which allowed the spectrum to be modeled to experimental precision$^a$. The data set for $^{17}$O and $^{18}$O water was previously reviewed and many of the problematic measurements identified$^c$, but Hamiltonian modeling of the remaining data resulted in significantly poorer quality fits than that for the $^{16}$O parent. As a result, we have made additional microwave measurements and modeled the existing $^{17}$O and $^{18}$O data sets with an Euler series model$^d$. This effort has illuminated a number of additional problematic measurements in the previous data sets and has resulted in analyses of $^{17}$O and $^{18}$O water that are of similar quality to the $^{16}$O analysis. We report the new lines, the analyses and make recommendations on the quality of the experimental data sets.