PERTURBATIONS, MIXINGS, AND SPECTRAL CONSTANTS AS A FUNCTION OF VIBRATIONAL STATE

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We have observed and assigned spectra in more than 30 excited states of HNO_3 and $ClONO_2$. While one of the primary motivations of this work has been our interest in the relation between the pure rotational and rotation-vibration spectrum of each of these molecules, the results of these analyses provide a perhaps unique opportunity to explore the relations among the many rotation and distortion parameters that describe these spectra. We will show that although the constants are strongly influenced by the mixings of the states, these perturbations can be removed and constants more directly related to molecular properties obtained.