HIGH RESOLUTION COHERENT 3D SPECTROSCOPY OF BROMINE

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The high resolution gas phase electronic spectrum of bromine is rather congested due to many overlapping vibrational and rotational transitions with similar transition frequencies, and also due to isotopomeric effects. Expansion into the second dimension will remove some of this congestion; however through the implementation of High Resolution Coherent 3D Spectroscopy, the density of peaks is further reduced by at least two orders of magnitude. This allows for the selective examination of a small number of spatially resolved multidimensional bands, separated by vibrational quantum number and by isotopomer, which facilitates the fitting of many rovibrational peaks in bromine. The ability to derive information about the molecular constants for the electronic states involved will be discussed.