LASER SPECTROSCOPY OF HOLMIUM MONOCHLORIDE.

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As part of a continuing investigation of the properties and structure of lanthanide molecules, a laser spectroscopic study of the lanthanide halides is presently in progress. High-resolution spectra are obtained via a Broida oven source using a cw ring laser. At present, high-resolution spectra of three electronic transitions of Holmium Chloride have been obtained. A global fit of the A9-X8, B8-X8 and C9-X8 transitions has been completed and other transitions are presently being investigated. The results and analysis will be presented and discussed in terms of the electron configurations of the electronic states. In addition, work continues on constructing a map of the low-lying electronic states. The nature and energy of these states will be compared and contrasted with calculations done via the Ligand Field Theory and previous work completed on HoF.