LASER SPECTROSCOPY OF DYSPROSIUM MONOCHLORIDE.

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A preliminary investigation into the spectroscopic properties of Dysprosium Monochloride has commenced. To date three transitions from a common upper state have been studied at high resolution and identified as the [16.3]8.5-X7.5, [16.3]8.5-[0.1]8.5, and [16.3]8.5-[0.8]7.5 transitions respectively. A global fit including all these transitions has been completed and the results of the analysis of the rotational structure will be presented. The energy pattern of the low lying states, their vibrational frequencies and the rotational structure will be discussed in terms of the electron configurations of the electronic states and an attempt will be made to correlate the observed states with those predicted by Ligand Field theory. In addition, the results for DyCl will be compared with those obtained from previous work on DyF.