INFRARED PHOTODISSOCIATION SPECTROSCOPY OF $Cr^{2+}(H_2O)Ar_n$ AND Cr^{+}(H2O)Ar COMPLEXES

P. D. CARNEGIE,B. BANDYOPADHYAY, AND M. A. DUNCAN, *Department of Chemistry, University of Georgia, Athens, GA, 30602-2556*.

$Cr^{2+}(H_2O)Ar_n$ and $Cr^{+}(H_2O)$Ar complexes are generated via laser vaporization in a pulsed supersonic expansion source and analyzed by infrared photodissociation spectroscopy. The shifts in the OH stretching frequencies and IR intensities of the water on the doubly charged metal cation are compared to those of the singly charged species. Additionally, from rotationally resolved spectra the structures of the doubly and singly charged cationic complexes can be determined.