PROBING SOLVATION EFFECTS OF $IBr^-(CO_2)_n$ BY PHOTOELECTRON SPECTROSCOPY

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We report photoelectron spectra of $IBr^-(CO_2)_n$ to understand the changes in IBr^- structure due to clustering. These experiments utilize anion photoelectron spectroscopy combined with velocity map imaging (VMI) to obtain photoelectron energy and angular distributions. Photodetachment of $IBr^-(X^2\Sigma^+)$ with 300 nm radiation accesses three neutral states of IBr: the ground state ($X^1\Sigma^+$) and the next two excited states ($^3\Pi_2$ and $^3\Pi_1$). Known excitation energies between the neutral states allow a direct calculation of the EA of IBr, 2.53 eV. Observed vibrational progressions resulting from transitions to the excited 3Π states of IBr lead to equilibrium distances. Current experiments on $IBr^-(CO_2)_n$ will be compared to that of the bare anion to understand changes in the structure of the cluster with additional CO_2 molecules.