ELECTRONIC SPECTROSCOPY OF COBALT-NEON CATION

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Co^+Ne was generated via laser vaporization in a pulsed supersonic expansion source, mass selected, and analyzed by visible photodissociation spectroscopy. An electronic band system was observed with an origin beginning at 13529 cm^{-1}. A progression of fifteen peaks beginning from the origin until the convergence limit can be seen, corresponding to the vibrational bands in the excited state of Co^+Ne. The excited state constants (ω_e=113 cm^{-1}, $\omega_e x_e$=4.76 cm^{-1}) were determined, and the electronic cycle leads to a ground state binding energy (D_0=933 cm^{-1}). The ground state binding energy can be compared to other rare gas binding energies, which is correlated to the polarizability of the rare gas. Resolved rotational structure in the (0,0) transition gives the excited and ground state bond lengths.