THE C_3-BENDING VIBRATIONAL LEVELS OF C_3-NE AND C_3-XE VAN DER WAALS COMPLEXES

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The C_3-Ne and C_3-Xe van der Waals (vdW) complexes were produced from 193-nm photolysis of an allene-rare gas atom gas mixture under supersonic expansion. The C_3-bending vibrational levels (v_b=2-10) of the ground electronic states of these two complexes have been obtained from the wavelength-resolved emission from vdW levels observed near the C_3, $\tilde{A}$-$\tilde{X}$, $2_0^{2-}K_0^1$, $2_0^{4-}K_0^1$, $2_0^{2+}K_0^1$, and $1_0^1K_0^1$ bands. A "free rotor" model was used to fit the observed C_3-bending vibrational levels to parameters of dipole-induced dipole interaction of these complexes. Comparison of level structure observed among four C_3-Rg complexes will be presented.