LARGE AMPLITUDE VAN DER WAALS VIBRATIONS IN ARGON-FOUR MEMBERED RINGS FROM EXPERIMENTAL AND THEORETICAL CENTRIFUGAL DISTORTION CONSTANTS

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We have previously reported the pulsed jet Fourier transform microwave spectra and molecular spectral constants for the argon van der Waals complexes of chlorocyclobutane, thietane and cyclobutanone. The centrifugal distortion constants are dominated by the relatively weak ring puckering, rocking, and van der Waals forces. Cartesian force constants predicted from *ab initio* methods are used to calculate centrifugal distortion constants. Using the theoretical and experimental centrifugal distortion constants, we predict the large amplitude stretching and two bending vibrations of these van der Waals complexes.