

List of symbols

A, B, C	Rotational constants (see 1.2.1)
$\tilde{X}, \tilde{A}, \tilde{B}, \tilde{C}$	Labels for electronic states, ground state conventionally labelled \tilde{X}
$\tilde{a}, \tilde{b}, \tilde{c}, \dots$	Labels for excited electronic states of spin-multiplicity differing from that of the ground state \tilde{X}
r	Internuclear distance ($X-Y$ = bond distance, $X\dots Y$ = nonbonded distance)
r_e	Distance between equilibrium nuclear positions
r_{av}, r_z, r_α^0	Distance between average nuclear positions (ground vibrational state, $v_1 = v_2 \dots = 0$)
r_α	Distance between average nuclear positions (thermal equilibrium)
r_0	Distance between effective nuclear positions derived from rotational constants of zero-point vibrational level ($v_1 = v_2 \dots = 0$)
r_s	Distance between effective nuclear positions derived from isotopic differences in rotational constants
r_m	Distance between effective nuclear positions derived from the mass-dependence method of Watson
r_m^p	r_m obtained by a slightly modified method of Harmony et al.
r_g	Thermal average value of internuclear distance
r_a	Constant argument in the molecular term, Eq. (8), see Table 1.3.3
θ	Bond angle; for indices, see r . For example, θ_e , θ_z and θ_α represent angles defined by a set of three nuclear positions, equilibrium, average (ground vibrational state) and average (thermal equilibrium), respectively, and θ_a by a set of three internuclear distances r_a . Some electron diffraction papers report distances as r_g and angles as θ_α or θ_z .
f, k	Force constant for a weakly bound complex
k_s	Stretching force constant of an intermolecular bond of a weakly bound complex
ν	Vibrational wavenumber for a weakly bound complex
ν_s	Wavenumber of a stretching intermolecular vibration of a weakly bound complex

List of abbreviations

CEI	Coulomb explosion imaging	ac	anticlinal
ED	Electron diffraction	ap	antiperiplanar
IR	Infrared spectroscopy	ax	axial
LIF	Laser induced fluorescence	b	bending vibrational mode
LMR	Laser magnetic resonance	b	bridge
MW	Microwave spectroscopy	cm	center of mass
NMR	Nuclear magnetic resonance	eq	equatorial
PES	Photoelectron spectroscopy	s	stretching vibrational mode
Ra	Raman spectroscopy	sc	synclinal
REMPI	Resonance enhanced multiphoton ionization	sp	synperiplanar
TPI	Two photon ionization (spectroscopy)	t	terminal
UV	Ultraviolet spectroscopy		
ZEKE	Zero kinetic energy photoelectron spectroscopy		