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$\mathbf{D}_{\kappa\kappa'}(\mathbf{q})$	3 × 3 submatrix of the dynamical matrix
$\mathbf{D}^{i}_{\alpha}$	matrix of rotation about axis i by the angle α
$\mathbf{e}_{\kappa}(\mathbf{q}, j)$	polarization vector of atom κ corresponding to the phonon $(\mathbf{q}, j)$
$\mathbf{e}(\mathbf{q}, j)$	eigenvector of the dynamical matrix corresponding to the phonon $(\mathbf{q}, j)$
E	identity
$\mathbf{E}(\mathbf{q}, sa\lambda) = (E^{\alpha}_{\kappa}(\mathbf{q}, sa\lambda))$	matrix of symmetry coordinates
E_o	zero-point energy
$E_{\rm ph}$	lattice energy
$E_{\mathbf{q},j}$	contribution of the phonon $(\mathbf{q}, j)$ to the energy of the lattice
$f_o(\kappa, S)$	atom transformation table
f_{σ}	degeneracy of the eigenfrequency $\omega_{\mathbf{q},\sigma}$
$\mathbf{F}(\mathbf{q}) = (\mathbf{F}_{\kappa,\kappa'}(\mathbf{q}))$	Fourier-transformed force-constant matrix
$\mathbf{g}$	reciprocal-lattice vector
$G(\mathbf{q})$	space group of the wavevector $\mathbf{q}$
$G_o(\mathbf{q})$	point group of the wavevector $\mathbf{q}$
$G_o(\mathbf{q}, -\mathbf{q})$	augmented point group of the wavevector $\mathbf{q}$
$\vert G\vert$	order of group G
$G(\omega)$	density of phonon states
$G^{\rm Debye}(\omega)$	density of phonon states according to the Debye model
$G^{\rm Einstein}(\omega)$	density of phonon states according to the Einstein model
H	Hamiltonian
$\hbar$	Planck constant (1.0546×10^{-34} J s)
I	inversion
k	Boltzmann constant (1.381×10^{-23} J K^{-1})
$\mathbf{K}_o$	anti-unitary operator
$\mathbf{M}$	mass tensor
m_i	mirror plane perpendicular to axis i
m_{κ}	mass of atom κ
$n_{\mathbf{q},j}$	Bose factor corresponding to the phonon state $(\mathbf{q}, j)$
N	number of atoms within the primitive cell
N_Z	number of primitive cells
p	pressure
$\mathbf{p}_{\kappa l}$	momentum of atom (κl)
p_n	occupation probability of quantum state n
$\mathbf{P}^{(s)}(\mathbf{q}) = (P^{(s)}_{\lambda\lambda'}(\mathbf{q}))$	projection operator
$\mathbf{q}$	phonon wavevector
$\mathbf{q}_{\rm BZ}$	wavevector on the Brillouin-zone boundary
$Q_{\mathbf{q},j}$	normal coordinate corresponding to the phonon $(\mathbf{q}, j)$
$\mathbf{r}_l$	vector to the origin of the lth primitive cell
$\mathbf{r}_{\kappa l}(t)$	time-dependent position vector of atom (κl)
$\mathbf{r}^{o}_{\kappa}$	equilibrium position of atom κ with respect to the origin of the primitive cell
$\mathbf{r}^{o}_{\kappa l}$	equilibrium position of atom κ within the lth primitive cell
$\mathbf{R}$	element of the point group of the wavevector $G_o(\mathbf{q})$
$\bar{\mathbf{R}}$	element of $G_o(\mathbf{q}, -\mathbf{q})$
$\{\mathbf{S}\vert\mathbf{v}(\mathbf{S}) + \mathbf{x}(m)\}$	symmetry operation (Seitz notation)
$\mathbf{S} = (S_{\alpha\beta})$	matrix of rotation
$\mathbf{S}_{-}$	space-group element that inverts the wavevector
t	time
T	temperature
$\mathbf{T}(\mathbf{q}, \mathbf{R}) = (T^{\alpha\mu}_{K\kappa}(\mathbf{q}, \mathbf{R}))$	matrix operator associated with a symmetry operation $\mathbf{r}$ of the point group of the wavevector $\mathbf{q}$
$\mathbf{u}^{o}$	polarization vector for elastic waves
$\mathbf{u}_{\kappa l}(t)$	displacement vector of atom (κl)
V	potential energy
V	volume
$\mathbf{V}(\kappa l, \kappa' l') = (V_{\alpha\beta}(\kappa l, \kappa' l'))$	matrix of force constants acting between atoms (κl) and $(\kappa' l')$
v_s	sound velocity
$\mathbf{v}(\mathbf{S})$	fractional translation associated with symmetry operation $\mathbf{S}$
$\mathbf{x}(m)$	lattice translation
Z	partition function
$\boldsymbol{\alpha} = (\alpha_{kl})$	tensor of thermal expansion
β	coefficient of volume expansion
γ	mean Grüneisen parameter
$\gamma_{\mathbf{q},j}$	averaged-mode Grüneisen parameter
$\gamma_{\mathbf{q}j,kl}$	generalized-mode Grüneisen parameters
$\boldsymbol{\Gamma} = (\Gamma_{jl})$	propagation tensor
$\boldsymbol{\Gamma} = (\Gamma^{\alpha\mu}_{K\kappa}(\mathbf{q}, \{\mathbf{S}\vert\mathbf{v}(\mathbf{S}) + \mathbf{x}(m)\}))$	transformation matrix
δ_{kl}	Kronecker delta
$\delta(\omega)$	Dirac delta function
$\boldsymbol{\Delta}(\mathbf{q}, \mathbf{R})$	block-diagonal matrix of irreducible representations
$\boldsymbol{\varepsilon} = (\varepsilon_{kl})$	strain tensor
χ	character of a representation
$\varphi(\mathbf{q}, \mathbf{r}_i, \mathbf{r}_j)$	multiplier associated with two symmetry operations $\mathbf{r}_i$ and $\mathbf{r}_j$ of the point group of the wavevector $\mathbf{q}$
Φ	potential energy
κ	isothermal compressibility
Θ_D	Debye temperature
Θ_E	Einstein temperature
ρ	density
$\boldsymbol{\sigma} = (\sigma_{kl})$	stress tensor
$\boldsymbol{\tau}^{(s)}(\mathbf{q}, \mathbf{R}) = (\tau^{(s)}_{\lambda\lambda'}(\mathbf{q}, \mathbf{R}))$	irreducible representation
$\overline{\boldsymbol{\tau}^{(s)}}(\mathbf{q}, \mathbf{R})$	conjugated representation
$\boldsymbol{\tau}_v$	vector representation
$\boldsymbol{\tau}_T$	tensor representation
ω_D	Debye frequency
ω_E	Einstein frequency
$\omega_{\mathbf{q},j}$	frequency of phonon $(\mathbf{q}, j)$
$\boldsymbol{\Psi}$	arbitrary vector
$*$	denotes the complex-conjugate quantity
$+$	denotes the Hermitian conjugate matrix
T	denotes the transposed matrix

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