List of symbols

< >	time mean
{ }	a reference time mean (may not equal the time mean of data set under investigation)
[ ]	a zonal or a space mean
‘	departure from a time mean (or climatological mean)
*	departure from space mean

A	amplitude
A	verification attribute
A(s)	spatial map
a	regression coefficient
a	radius of the earth
a , b	sine/cosine coefficients of harmonic expansion
a	vector a in Q b = a
b	vector b in Q b = a
b	regression coefficient
B	general matrix
B(s)	spatial map
c, d	sine/cosine coefficients of harmonic expansion
c	intercept (regression)
c_{gx}, c_{gy}	zonal, meridonal component of group speed (m/s)
$\mathbb{C}$	phase speed (m/s)
C	time lagged covariance matrix
c	a positive constant
d	basis function
e	basis function
e	eigenvector (solution of B e = λ e)
E	matrix containing eigenvectors
f (s, t)	function of time and space, or a data set at n_s (n_t) points in space (time)
f	Coriolis parameter (2 Ω sinϕ)
G	growth rate
g	acceleration of gravity
g(s, t)	function of time and space, or a data set at n_s (n_t) points in space (time)
h(s, t)	function of time and space, or a data set at n_s (n_t) points in space (time)
F	Rossby radius of deformation
i, j	counter for position in time and space
k	mode number (for EOF, EOT etc)
K	multi-dimensional wavenumber
K	optimal number of years (for climatic normals)
L	sample size
$\mathfrak{L}$	linear operator
M	size of a data set (e.g. number of years)
M	total number of orthogonal modes, <= the smaller of n_s and n_t

M (s,t)	complex mode
M	diagonal matrix with elements μ_m
m	zonal wavenumber
m	mode number (for EOF, EOT etc)
N	effective degrees of freedom
$\mathbb{N}$	non-linear operator
n	meridional wavenumber
n	total wavenumber (for associated spherical harmonics)
n_s	total number of gridpoints (or stations) in space
n_t	total number of time levels in a data set
$\mathcal{P}$	constructed analogue prediction operator
P	precipitation
Q	covariance matrix
Q^a	alternative covariance matrix
q_{ij}	elements of Q
R	matrix of random forcing
S	spatial domain
s	space coordinate
SST	Sea-surface Temperature
u, v	west-east, south-north wind components (m/s)
u(t), v(t)	time series
U	west to east back ground wind (m/s)
U	residual to be minimized
t	time (coordinate)
Δt	time increment
T	temperature
T	period
w	weighting factor
w	soil moisture
x	west-east coordinate
x	state vector
y	south-north coordinate
Z	geopotential height (geopotential meter)
Z500	geopotential height of 500mb height surface

$\alpha(t)$	time series of expansion coefficients as in $f(s,t) = \Sigma\, \alpha_m(t)e_m(s)$
α_j	weight multiplying an observed anomaly map
γ	threshold value
β	meridional derivative of the Coriolis parameter
$\beta(s)$	spatial pattern
$\beta(t)$	time series of expansion coefficients as in $f(s,t) = \Sigma\, \beta_m(t)e_m(s)$
ϵ	phase angle
ϵ	distance between two states of the atmosphere

ρ	damping factor
ρ_{ij}	shorthand for $\rho(s_i, s_j)$, the correlation between two positions in space
Ω	rotation of the earth
τ	lead of the forecast; lag in (auto)correlation
λ , ϕ	longitude, latitude
λ	wavelength
Λ	matrix containing eigenvalues along the main diagonal and zero elsewhere
λ	eigenvalue
ψ,	streamfunction. Under geostrophic assumption: $\psi=Z/f$,
υ	probability
χ	velocity potential; any two-dimensional vector field V, on a closed spherical domain, can be written $V = (\partial\chi/\partial x-\partial\psi/\partial y, \partial\psi/\partial x+\partial\chi/\partial y)$
σ	singular value