List of symbols

$\ddot{x}$ Second derivative wrt time of x—i.e. acceleration along x

$\ddot{y}$ Second derivative wrt time of y—i.e. acceleration along y

ΔP Pressure difference (N m^{-2} or Pa)

ΔP change in pressure

Δx change in distance

ν Number of ions that solute dissociates into

Ω Rotation frequency of earth in radians per second. i.e $\frac{2\pi}{24\,hours}$

ω Angular frequency of oscillation (rad s^{-1})

ϕ Latitude: watch radians and degrees mode

ρ_a Density of air (units of kg m^{-3})

ρ_s Density of the solute (units of kg m^{-3})

ρ_v Mass of water per unit volume

ρ_w Density of pure water, 1000 kg m^{-3}

ρ_{sol} Density of the water / solute mixture (units of kg m^{-3})

ρ Density of air ~ 1 kg m^{-3}

σ Surface tension of water, 0.075 N m^{-1}

a   acceleration (a vector quantity measured in m s^{-2})

F   Force (a vector quantity measured in newtons)

F$_A$ Force exerted by object A on something else

F$_B$ Force exerted by object B on something else

v   Velocity (a vector quantity measured in m s^{-1})

A   Area of a window (m^2)

c   phase speed of gravity wave

D   Diameter of aerosol particle (e.g. units of metres)

e   Partial pressure of water vapour (units of pascals)

e_s Saturation vapour pressure (units of pascals)

f   Coriolis parameter (rad s^{-1})

f   Coriolis parameter

F_x Force per unit volume in the *x* direction

F_y Force per unit volume in the *y* direction

g   Acceleration due to gravity (9.8 m s^{-2}

h   Depth of fluid (m

L_v Latent heat of vapourisation, 2.5×10^6 J kg^{-1}

m   Mass (measured in kg)

M_a Molecular weight of air, 29 g mole^{-1}

M_s Molecular weight of solute

M_w Molecular weight of water, 18 g mole^{-1}

n   number of moles of gas

N_p Number concentration of particles (units of m^{-3})

n_s Number of moles of solute

n_w Number of moles of water

P   Pressure (units of pascals)

PGF   pressure gradient force per unit volume

R_v Specific gas constant for water vapour, 461 J kg^{-1} K^{-1}

R   Radius of a circle (m)

R   radius that air travels around (m)

R_a Specific gas constant for air, 287 J kg^{-1} K^{-1}

r_w Mass mixing ratio of water vapour (e.g. units of kg kg^{-1} or g kg^{-1})

R_{gas} Universal gas constant, 8.314 J mole^{-1} K^{-1}

RH Relative humidity, unit-less, can be expressed as a percentage.

T Temperature (units of kelvin)

t time (s)

u East-west velocity (m s^{-1})

u_g Component of geostrophic wind in the x direction

V Volume of gas (units cubic metres)

v North-south velocity (m s^{-1})

v_g Component of geostrophic wind in the y direction

v_t Velocity around circle (m s^{-1})

v_{gr} Gradient wind (m s^{-1})

W an objects weight. Equal to its mass, m, multiplied by the field strength due to gravity, $g = 9.8$ m s^{-2}.

x East-west position (m)

y North-south position (m)