

Symbols and acronyms

α	Albedo
α_p	Planetary albedo
δ	Solar declination
$\delta^{13}\text{C}$	Delta value for the relative abundance of ^{13}C in a sample
$\delta^{18}\text{O}$	Delta value for the relative abundance of ^{18}O in a sample
ΔQ	Radiative forcing at the tropopause
ε	Emissivity of an object
ε_{obl}	Obliquity
ϕ	Latitude (on Earth)
ρ	Density
θ_s	Solar zenith distance
λ	Longitude (on Earth)
λ_f	Feedback parameter
λ_t	True longitude
η	Sea-surface elevation
σ	Stefan-Boltzman constant ($= 5.67 \cdot 10^{-8} \text{ W m}^{-2} \text{ K}^{-4}$)
τ_a	Infrared transmissivity of the atmosphere
$\tilde{\omega}$	Longitude of the perihelion measured from the vernal equinox
$\vec{\Omega}$	Angular velocity vector of the Earth
AABW	Antarctic Bottom Water
AAIW	Antarctic Intermediate Water
ACC	Antarctic Circumpolar Current
AD	Anno Domini, yr AD is the number of years since the beginning of the Christian (or Common) era
AGCM	Atmospheric General Circulation Model
<i>Alk</i>	Alkalinity
AOGCM	Atmosphere Ocean General Circulation Model
BC	Before Christ, yr BC is the number of years before 1AD
BP	Before Present, i.e. before 1950 AD
<i>C</i>	Condensation
CCD	Calcite Compensation Depth
CDW	Circumpolar Deep Water
CGCM	Coupled General Circulation Model
c_p	Specific heat ($\text{J K}^{-1} \text{ kg}^{-1}$)
CRF	Cloud Radiative Forcing
DGVM	Dynamic Global Vegetation Model
<i>DIC</i>	Dissolved Inorganic Carbon
DJF	December, January and February
<i>E</i>	Evaporation
EBM	Energy Balance Model
<i>ecc</i>	Eccentricity
EMIC	Earth Model of Intermediate complexity
ENSO	El Niño Southern Oscillation
e_s	Saturation vapour pressure (Pa)
f_f	Feedback factor

F_{fric}	Force due to friction
$F_{IR\downarrow}$	Downward longwave radiation at the surface (W m^{-2})
$F_{IR\uparrow}$	Upward longwave radiation at the surface (W m^{-2})
F_{LH}	Latent heat flux at the surface (W m^{-2})
F_{SH}	Sensible heat flux at the surface (W m^{-2})
F_{SOL}	Incoming solar radiation at the surface (W m^{-2})
g	Acceleration due to gravity at the Earth's surface ($= 9.8 \text{ m s}^{-2}$)
GCM	General Circulation Models
GtC	Gigaton of carbon (10^{15} grams of carbon)
HA	Hour Angle
IPCC	Intergovernmental Panel on Climate Change (http://www.ipcc.ch/)
ITCZ	Intertropical Convergence Zone
J	Joule
JJA	June, July and August
K	Kelvin
ka	1000 years
K_H	Solubility (of CO_2)
kyr	1000 years
L_f	Latent heat of fusion of water ($= 334 \text{ kJ kg}^{-1}$ at 0°C)
LGM	Last Glacial Maximum (around 21 kyr BP)
L_v	Latent heat of vaporisation of water ($= 2250 \text{ kJ kg}^{-1}$ at 100°C , 2500 kJ kg^{-1} at 0°C)
m	Metre
NADW	North Atlantic Deep Water
NAM	Northern Annular Mode
NAO	North Atlantic Oscillation
nm	Nanometre (10^{-9} m)
NPP	Net Primary Production
OGCM	Ocean General Circulation Model
p	Pressure (Pa)
p_s	Surface pressure (Pa)
P	Precipitation
Pa	Pascal
PDE	Partial Differential Equation
PERH	Longitude of the perihelion measured from the autumn equinox
PETM	Paleocene Eocene Thermal Maximum
PFT	Plant Functional Type
PgC	Petagrams of carbon (10^{15} grams of carbon)
ppb	Parts per billion
ppm	Parts per million
psu	Practical salinity unit
PW	10^{15} W
q	Specific humidity (kg/kg)
R	Earth's radius ($= 6371 \text{ km}$)
R_g	Perfect gas constant
RF_{TOA}	Net radiative flux at the top of the atmosphere (W m^{-2})
RH	Relative Humidity
r_m	Mean distance between the Earth and the Sun
RMS	Root Mean Square

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R_v	Gas constant for water vapour ($= 461.39 \text{ J Kg}^{-1} \text{ K}^{-1}$)
R_{riv}	River runoff
S	Ocean salinity
S_0	Solar constant ($\sim 1368 \text{ W m}^{-2}$)
SAM	Southern Annular Mode
SOI	Southern Oscillation Index
Sv	Sverdrup ($= 10^6 \text{ m}^3 \text{ s}^{-1}$)
TCR	Transient climate response
T_e	Effective emission temperature of the Earth
T_s	Surface temperature
\vec{v}	Velocity vector
W	Watt
WMO	World Meteorological Organisation
yr	Year
z	Altitude or depth, measured from the bottom upwards