Wavelength-Dependent Files

Bottom of the Atmosphere Radiance Files:

Filename Template:
aeronet-g5nr.$SCAN.lc2.vlidort.vector.$YYYYMMDD_$HHz_$LAMBDAd00nm.nc4

Filename Variable	Description
SCAN	Describes the type of scan simulated for the sunphotometer. Can be one of two options: al: almucantar scan pp: principle plane scan
YYYY	Year
MM	Month
DD	Day
HH	Hour in UTC
LAMBDA	Wavelength in nm

Data Variable	Description	Units
time	Time of simulated observation	seconds since YYYY-MM-DD 00:00:00
x	Longitude of station (included for compatibility with GrADS)	degrees east
y	Latitude of station (included for compatibility with GrADS)	degrees north
station	Index of station (included for compatibility with grads)	None Goes from 0 to nstations-1
angle	Almucantar scan: azimuth angle relative to the sun. Principle plane scan: scattering angle from sun.	Degrees. Azimuth angles are positive in the clockwise direction. Scattering angles are negative when pointing below the sun.
lev	Vertical level	None
leve	Vertical level edge	None

stnLon	Station longitude	Degrees east
stnLat	Station latitude	Degrees west
stnName	Station name	None
Isotime	Time of simulation observation in ISO format	UTC
I_normalized	Normalized bottom of the atmosphere radiance at wavelength LAMBDA. pi*I/cosSZA*SOLAR_FLUX (see **NOTE**)	None.
I	Bottom of the atmosphere radiance at wavelength LAMBDA	W m-2 sr-1 nm-1 (see **NOTE**)
Q	Q Component of the stokes vector for wavelength LAMBDA	W m-2 sr-1 nm-1 (see **NOTE**)
U	U Component of the stokes vector for wavelength LAMBDA	W m-2 sr-1 nm-1 (see **NOTE**)
surf_reflectance	Surface reflectance at the time, location, and viewing geometry of the simulation for wavelength LAMBDA	None
ROT	Vertical profile of Rayleigh optical thickness at the time and location of the simulation for wavelength LAMBDA	None
ssa	GOCART Aerosol single scattering albedo at the time and location of the simulation for wavelength LAMBDA	None
aod	GOCART Aerosol optical depth at the time and location of the simulation for wavelength LAMBDA	None
riso	Isotropic BRDF kernel weight at the time and location of the simulation for wavelength LAMBDA (N/A for UV wavelenghts)	None
rgeo	geometric BRDF kernel weight at the time and	None

	location of the simulation for wavelength LAMBDA (N/A for UV wavelenghts)	
rvol	volumetric BRDF kernel weight at the time and location of the simulation for wavelength LAMBDA (N/A for UV wavelenghts)	None

NOTE: In the model, the solar constant (SOLAR_FLUX) is set to 1.

Extinction Vertical Profile Files:

G5NR Native Resolution Filename Template:
aeronet-g5nr.lc2.aer_Nv.ext.$YYYY$MM$DD_$HHz_$LAMBDAd00nm.nc4

G5NR Coarse Resolution Filename Template
aeronet-g5nr.lc2.aer_Cv.ext.$YYYY$MM$DD_$HHz_$LAMBDAd00nm.nc4

Filename Variable	**Description**
YYYY	Year
MM	Month
DD	Day
HH	Hour in UTC

Data Variable	**Description**	**Units**
time	Time of simulated observation	seconds since YYYY-MM-DD 00:00:00
x	Longitude of station (included for compatibility with GrADS)	degrees east
y	Latitude of station (included for compatibility with GrADS)	degrees north
station	Index of station (included for compatibility with grads)	None Goes from 0 to nstations-1
lev	Vertical level	None
leve	Vertical level edge	None
longitude	Station longitude	Degrees east

latitude	Station latitude	Degrees west
stnName	Station name	None
isotime	Time of simulation observation in ISO format	UTC
ext	Aerosol total extinction	km^{-1}
scatext	Aerosol scattering extinction	km^{-1}
backscat	Aerosol back scattering	km^{-1} sr^{-1}
aback_sfc	attenuated aerosol backscatter at the surface	sr^{-1}
aback_toa	attenuated aerosol backscatter at TOA	sr^{-1}
depol	depolarization ratio	None
ext2back	extinction to backscatter ratio	sr
tau	aerosol optical depth	None
ssa	Single scattering albedo	None
g	assymetry parameter	None
vol	Aerosol volume concentration	m^3/m^3
refi	Imaginary refractive index	None
refr	Real refractive index	None
reff	Aerosol effective radius	m
area	Aerosol cross sectional area	m^2/m^3

Additional Data Files (Wavelength Independent Data):

Filename Template:
aeronet-g5nr.lc2.add.$YYYY$MM$DD_$HHz.nc4

Filename Variable	**Description**
YYYY	Year
MM	Month
DD	Day
HH	Hour in UTC

Data Variable	**Description**	**Units**
time	Time of simulated observation	seconds since YYYY-MM-DD 00:00:00
x	Longitude of station (included for	degrees east

	compatibility with GrADS)	
y	Latitude of station (included for compatibility with GrADS)	degrees north
station	Index of station (included for compatibility with grads)	None Goes from 0 to nstations-1
lev	Vertical level	None
leve	Vertical level edge	None
stnLon	Station longitude	Degrees east
stnLat	Station latitude	Degrees west
stnName	Station name	None
Isotime	Time of simulation observation in ISO format	UTC
temperature	GEOS-5 Temperature vertical profile at the time and location of the simulation	K
pressure	GEOS-5 pressure vertical profile at the time and location of the simulation	Pa
altitude	GEOS-5 altitude above the surface at the location of the station	m
solar_zenith	Solar zenith angle at time and location of simulated observation	degrees
solar_azimuth	Solar azimuth angle at time and location of simulated observation	Degrees Azimuth angles are positive in the clockwise direction. Azimuth angle is equal to zero due north.
aer_dist	Aerosol size distribution dV(r)/dln(r)	$^{3}\mu m/\mu m^{2}$
radius	Aerosol radius	μm
angstrom_exponent	Aerosol angstrom exponent between 440 and 870 nm	None