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Description of files and variables

Variables in lad_sunfrac.dat
'height' is the vertical dimension of the model in meters

'sunfrac4' is the sunlit fraction of leaves for a leaf area index of 4

'lad4' is the leaf area density for a leaf area index of 4 in units m^2 m^{-3}

'sunfrac2' is the sunlit fraction of leaves for a leaf area index of 2

'lad2' is the leaf area density for a leaf area index of 2 in units m^2 m^{-3}

Variables in the drySU.dat, intermSU.dat, wetSU.dat, wetSU_10DEP.dat, wetMU.dat, wetSU_ENTRAIN.dat, dryMU.dat, and wetSU_FASTSTOM.dat files. File names correspond to simulations in Table 1.

'height' is the vertical dimension of the model in meters

'ozone' is ozone mixing ratio in ppb

'std_ozone' is the standard deviation of the ozone mixing ratio in ppb

'r_wO3' is the correlation coefficient between vertical velocity and ozone mixing ratio

'corr_o3_theta' is the correlation coefficient between ozone mixing ratio and potential temperature

'vd' is the ozone deposition velocity in units cm/s

'ozone_flux' is the vertical ozone flux in units ppb m/s

'egs' is the effective stomatal conductance in units 1/s

'egcut' is the effective cuticular conductance in units 1/s

'std_egs' is the standard deviation of the effective stomatal conductance in units 1/s

'std_egleaf' is the standard deviation of the effective leaf conductance in units 1/s

'var_gleaf' is the variance of the leaf conductance in units $(1/s)^2$

'var_gs' is the variance of the stomatal conductance in units $(1/s)^2$

'var_gcut' is the variance of the cuticular conductance in units $(1/s)^2$

'covar_gs_gcut' is the covariance between the stomatal conductance and the cuticular conductance in units $(1/s)^2$

'corr_gb_egleaf' is the correlation coefficient between the leaf boundary layer conductance and the effective leaf conductance

'corr_tleaf_egleaf' is the correlation coefficient between the leaf temperature and the effective leaf conductance

'seg_leaf_sink' is the segregation intensity of the leaf ozone sink in percentage units

'corr_egleaf_o3' is the correlation coefficient between the effective leaf conductance and ozone mixing ratio

'corr_gb_gleaf' is the correlation coefficient between the leaf boundary layer conductance and the leaf conductance

'corr_egs_tleaf' is the correlation coefficient between the effective stomatal conductance and leaf temperature

'seg_stom_sink' is the segregation intensity of the stomatal ozone sink in percentage units

'corr_egs_o3' is the correlation coefficient between the effective stomatal conductance and ozone mixing ratio

'corr_tleaf_theta' is the correlation coefficient between leaf temperature and potential temperature

'corr_tleaf_rhleaf' is the correlation coefficient between leaf temperature and leaf-level relative humidity

'corr_gb_tleaf' is the correlation coefficient between the leaf boundary layer conductance and leaf temperature

'corr_gs_tleaf' is the correlation coefficient between stomatal conductance and leaf temperature

'corr_gb_gs' is the correlation coefficient between the leaf boundary layer conductance and the stomatal conductance

‘covar_gb_tleaf’ is the covariance between the leaf boundary layer conductance and the leaf temperature in units K/s

‘var_gbleaf’ is the variance of the leaf boundary layer conductance in units $(1/s)^2$

‘suntk_sqr’ is the variance of the sunlit leaf temperature in units K^2

‘shdtk_sqr’ is the variance of the shaded leaf temperature in units K^2

Variables in the slice*.dat files.
Horizontal slices (2-D arrays) of (ozone) and egleaf (effective leaf conductance) anomalies from the wet SU and wet MU simulations (Table 1). There are 1024 x 1024 grid points; the resolution is 2-m so the slices span 2048 m in each direction. Units for ozone are ppb, and units for effective leaf conductance are s^{-1}. The ‘pt6’ files are for 0.6 x canopy height, and the ‘6’ files are 6 x canopy height, corresponding to what is shown in Figure 1.

Variables in spectra.dat files.
Azimuthally- and time-averaged two-dimensional spectra and co-spectra.

‘k’ is the horizontal wavenumber

‘wo3_wetSU’ is the co-spectra between vertical velocity and ozone for wet SU at canopy height in units $(ppb\ m\ s^{-1})^2$

‘gs_wetSU’ is the spectra for stomatal conductance for wet SU at canopy height in units $(s^{-1})^2$

‘gs_FASTSTOM’ is the spectra for stomatal conductance for FAST-STOM at canopy height in units $(s^{-1})^2$

‘egleaf_wetSU’ is the spectra for effective leaf conductance for wet SU at canopy height in units $(s^{-1})^2$

‘egleaf_FASTSTOM’ is the spectra for effective leaf conductance for FAST-STOM at canopy height in units $(s^{-1})^2$

‘o3_10h_wetSU’ is the spectra for ozone in wet SU at 10 x canopy height in units $(ppb)^2$

‘o3_10h_ENTRAIN’ is the spectra for ozone in ENTRAIN at 10 x canopy height in units $(ppb)^2$

‘o3_h_wetSU’ is the spectra for ozone in wet SU at 1 x canopy height in units $(ppb)^2$

‘o3_h_ENTRAIN’ is the spectra for ozone in ENTRAIN at 1 x canopy height in units $(ppb)^2$