

datalist (Boreal Winter 2006 series)

1. experimental design (Miura et al. 2007)

Horizontal grid spacing:

14 km (glevel-09), 7 km (glevel-10), 3.5 km (glevel-11)

Integration:

7-km, 14-km run: 30 days from 15 Dec 2006

3.5-km run: 7 days from 25 Dec 2006

Initial conditions:

Interpolated from NCEP tropospheric analyses

(6 hourly, 1.0x1.0 degree grids)

2006-12-15 00:00:00 (14-km and 7-km run)

2006-11-01 00:00:00 (14-km and 7-km run) ... MISMO run (Miura et al. 2009, GRL)

2006-12-25 00:00:00 (3.5-km run)

Boundary conditions:

Reynolds SST, Sea ICE (weekly data)

ETOPO-5 topography, Matthews vegetation

UGAMP ozone climatology (for AMPI2)

Vertical domain:

0 m ~ 38,000 m, 40-levels (stretching grid)

2. output variables (Grads format)

[MULTI LEVEL -- 13 variables]

(glevel-09, 10:6-hourly) (glevel-11: daily) snapshot

ml_dh : diabatic heating rate (cloud microphysics) [K/s]

ml_pres : pressure [Pa]

ml_qc : cloud water mixing ratio (microphysics) [kg/kg]

ml_qi : cloud ice mixing ratio [kg/kg]

ml_qr : rain mixing ratio [kg/kg]

ml_qs : snow mixing ratio [kg/kg]

ml_qv : water vapor mixing ratio [kg/kg]

ml_rh : relative humidity [frac.]

ml_rho : density (all species) [kg/m³]

ml_tem : temperature [K]

ml_ucos : zonal velocity (multiplied by cos(lat)) [m/s]

ml_vcos : meridional velocity (multiplied by cos(lat)) [m/s]

ml_w : vertical velocity [m/s]

[SINGLE LEVEL -- 27 variables] (1.5-hourly mean)

sl_albedo : albedo [frac.]
 sl_cld_frac : cloud fraction [frac.]
 sl_cldi : column integrated solid water [kg/m²]
 sl_cldw : column integrated liquid water [kg/m²]
 sl_evap : evaporation rate [kg/m²/s]
 sl_lw_toa : outgoing long-wave flux at TOA [W/m²]
 sl_lw_toa_c : outgoing long-wave flux at TOA (clear sky) [W/m²]
 sl_ps : surface pressure [Pa]
 sl_q2m : 2 m water vapor mixing ratio [kg/kg]
 sl_slh : surface latent heat flux [W/m²]
 sl_slwd : surface long-wave radiation (downward) [W/m²]
 sl_slwu : surface long-wave radiation (upward) [W/m²]
 sl_ssh : surface sensible heat flux [W/m²]
 sl_sswi : surface short-wave radiation (downward/incident) [W/m²]
 sl_sswr : surface short-wave radiation (upward/reflected) [W/m²]
 sl_sw_toai : downward short-wave radiation at TOA [W/m²]
 sl_sw_toar : upward short-wave radiation at TOA [W/m²]
 sl_sw_toar_c : upward short-wave radiation at TOA (clear sky) [W/m²]
 sl_t2m : 2 m temperature [K]
 sl_tauucos : surface stress by zonal velocity (multiplied by cos(lat)) [N/m²]
 sl_tauvcos : surface stress by meridional velocity (multiplied by cos(lat)) [N/m²]
 sl_tem_atm : mass weighted column averaged temperature [K]
 sl_tem_sfc : surface temperature [K]
 sl_tppn : surface precipitation rate [kg/m²/s]
 sl_ucos10m : 10 m zonal velocity (multiplied by cos(lat)) [m/s]
 sl_vap_atm : precipitable water [kg/m²]
 sl_vcos10m : 10 m meridional velocity (multiplied by cos(lat)) [m/s]

notes:

* a single element (3077,4176) in gl_11 dataset is undefined for all variables

* dh (diabatic heating rate in gl_09, gl10, and gl11 dataset only count diabatic heating calculated in the cloud microphysical scheme (i.e., condensation and evaporation) and not include partial condensation calculated in the turbulent scheme.

3. data size

7 km mesh, single-level (32days, 1.5 hourly) = 27GB

3.5 km mesh, single-level (7days, 1.5 hourly) = 21GB

7 km mesh 40L, (32days, 6 hourly) = 270GB

3.5 km mesh 40L, (7days, daily) = 52.5GB