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Supplement of

Near-global-scale high-resolution seasonal simulations with WRF-Noah-MP v.3.8.1

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```
&time_control
 run_days                            = 0,
 run_hours                           = 0,
 run_minutes                         = 0,
 run_seconds                         = 0,
 start_year                          = 2015,
 start_month                         = 05,
 start_day                           = 08,
 start_hour                          = 00,
 start_minute                        = 00,
 start_second                        = 00,
 end_year                            = 2015,
 end_month                           = 05,
 end_day                             = 09,
 end_hour                            = 18,
 end_minute                          = 00,
 end_second                          = 00,
 interval_seconds                    = 21600,
 input_from_file                     = .true.,
 history_interval                    = 360,
 frames_per_outfile                  = 1,
 restart                             = .true.,
 restart_interval                    = 360,
 io_form_history                     = 11,
 io_form_restart                     = 11,
 io_form_input                       = 11,
 io_form_boundary                    = 11,
 io_form_auxinput1                   = 11
 debug_level                         = 0,
 cycling                             = .false.,
 use_netcdf_classic = .true.
 diag_print=2,
 auxhist23_outname='wrfpress_d<domain>_<date>'
 io_form_auxhist23 = 11,
 auxhist23_interval=360,
 frames_per_auxhist23 = 1,
 nocolons= .true.
 io_form_auxinput4                   = 11
 auxinput4_inname                    = "wrflowinp_d<domain>"
 auxinput4_interval                  = 360
 iofields_filename = "additional_fields_2d.txt"
ignore_iofields_warning = .false.
 auxhist7_outname='surface_d<domain>_<date>'
 io_form_auxhist7 = 11
 auxhist7_interval = 30,
 frames_per_auxhist7 = 1
 override_restart_timers=.true.
 /

&diags
 p_lev_diags                         = 1
 num_press_levels                    = 10
 press_levels                        = 100000, 92500, 85000, 70000,
60000, 50000, 40000, 30000, 20000, 10000
 use_tot_or_hyd_p                    = 2
```

```
/


 &domains
 time_step                           = 10,
 time_step_fract_num                 = 0,
 time_step_fract_den                 = 1,
 max_dom                             = 1,
 e_we                                = 12000,
 e_sn                                = 4060,
 num_metgrid_levels                  = 138,
 p_top_requested                      = 1000.
 eta_levels =
1.000,0.997,0.993,0.989,0.983,0.972,0.962,0.952,0.942,0.932,0.917,0.903,0
.889,0.875,0.852,0.826,0.799,0.771,0.748,0.725,0.7,0.678,0.653,0.628,0.59
0,0.557,0.515,0.480,0.445,0.410,0.375,0.340,0.305,0.280,0.25,0.219,0.191,
0.174,0.157,0.142,0.128,0.114,0.102,0.091,0.080,0.070,0.061,0.052,0.044,0
.037,0.030,0.024,0.018,0.013,0.008,0.003,0.000,
 e_vert                              = 57,
 dx                                  = 3335.324,3335.324
 dy                                  = 3335.324,3335.324
 grid_id                             = 1,
 parent_id                           = 1,
 i_parent_start                      = 1,
 j_parent_start                      = 1,
 parent_grid_ratio                   = 1,
 parent_time_step_ratio              = 1,
 feedback                            = 0,
 smooth_option                       = 0,
 use_surface                         = .false.,
 use_adaptive_time_step              = .false.
 adaptive time stepping, ARW only
 step_to_output_time                 = .true.
 target_cfl                  = 1.2,
 max_step_increase_pct       = 10,
 starting_time_step          = 10,
 max_time_step               = 14,
 min_time_step              = -1,
 /

&physics
 sst_update                          = 1,
 mp_physics                          = 8,
 ra_lw_physics                       = 4,
 ra_sw_physics                       = 4,
 radt                                = 3,
 sf_sfclay_physics                   = 1,1,
 sf_surface_physics                  = 4,4,
 bl_pbl_physics                      = 1,
 YSU_TOPDOWN_PBLMIX      =           1,
 bldt                                = 0,
 topo_wind                           = 2,
 cu_physics                          = 0,
 cudt                                = 5,
 isfflx                              = 1,
```

```
 ifsnow                              = 1,
 icloud                              = 3,
 surface_input_source                = 1,
 num_soil_layers                     = 4,
 mp_zero_out                         = 0,
 sf_urban_physics                    = 0,
 maxiens                             = 1,
 maxens                              = 3,
 maxens2                             = 3,
 maxens3                             = 16,
 ensdim                              = 144,
 slope_rad                           = 1,
 topo_shading                        = 0,
 num_land_cat                        = 22,
 iz0tlnd                             = 1,
 shcu_physics                        = 3,
 do_radar_ref = 0
 sf_lake_physics = 0
 o3input         = 2
 aer_opt= 2
 aer_aod550_opt = 2
 aer_asy_opt = 3
 aer_angexp_opt = 3
 aer_ssa_opt  = 3
 usemonalb = .true.
 rdlai2d = .true.
 hail_opt = 1
 seaice_threshold = 271.5
 seaice_thickness_default= 1.
 seaice_albedo_opt = 0
 /

 &noah_mp
 dveg=9
 opt_crs=1
 opt_sfc=1
 opt_btr=2
 opt_run=3
 opt_frz=1
 opt_inf=2
 opt_rad=3
 opt_alb=2
 opt_snf=1
 opt_tbot=2
 opt_stc=1
 opt_gla=1
/

 &fdda
  grid_fdda                           = 0,
 /

 &dynamics
 w_damping                           = 1,
 gwd_opt                             = 0,
```

```
 diff_opt                            = 2,
 km_opt                              = 4,
 diff_6th_opt                        = 2,
 diff_6th_factor                     = 0.12,
 base_temp                           = 290.
 damp_opt                            = 3,
 zdamp                               = 5000.,
 dampcoef                            = 0.2,
 khdif                               = 0,
 kvdif                               = 0,
 non_hydrostatic                     = .true.,
 moist_adv_opt                       = 1,
 scalar_adv_opt                      = 1,
 use_input_w                         = .true.
 epssm = 0.8
 base_lapse_strat                    = -11.
/


 &bdy_control
 spec_bdy_width                      = 5,
 spec_zone                           = 1,
 relax_zone                          = 4,
 !spec_exp = 0.33
 specified                           = .true.,
 nested                              = .false.,
 periodic_x                          = .true.
/
```