

NMME Phase-II Data Plan
May 27, 2014

The NMME data plan has two components:

- 1) "Real-time monthly data." This data is made available in near real-time by CPC (ftp://ftp.cpc.ncep.noaa.gov/NMME/realtime_anom/). The supporting hindcasts are made available by the IRI at <http://iridl.ldeo.columbia.edu/SOURCES/.Models/.NMME/> and this site is typically updated with the real-time data by the end of the month. This update is important as the CPC data delivery only include the most recent forecast. The real-time monthly data include the following fields: SST, T2m, precipitation, 200 mb geopotential height, Tmax, Tmin, soil moisture and runoff, and is updated as the NMME-II models are brought on line. This data set is an important historical marker of the evolution of the NMME project. All NMME-II models (and NMME-I models up to their retirement) listed below participate in this data distribution. The real-time monthly data will also be ported to the NCAR portal as time and resources permit.
- 2) "Extended NMME-II data." The fields to be archived and the forecast models participating in the Extended NMME-II data are listed in the tables below. The extended NMME-II data is portal is served at NCAR (<https://www.earthsystemgrid.org/search.html?Project=NMME>). This data is designed to support research, and while the real-time data will be ported to the NCAR data server, the timeliness will not meet real-time prediction requirements.

The NMME-Phase 2 models include the following:

- NOAA NCEP CFSv2
- NASA Goddard Space Flight Center (GSFC) GEOS5
- NCAR/University of Miami CCSM4.0
- NCAR CESM
- GFDL CM2.1, CM2.5 [FLORa06 and FLORb01]
- Environment Canada CanCM3 and CanCM4

The daily and monthly fields noted in the tables below cover the retrospective forecast period 1982-2010, and as feasible will include the real-time predictions. Retrospective forecasts were initialized each month of each year. The lead-time and number of ensemble members varies with forecast provider.

The NMME-II extended data will be available by 31 July 2014 as described below with the following exceptions:

1. GEOS5 data will include July and November start months on 31 July 2014. The remaining start months will come on line soon after 31 July 2014.
2. 6-hourly data from CFSv2 for additional fields with high frequency initialization during 1999-2012 will also be served.
3. GFDL will deliver the variables that are labeled as "Monthly" below along with the three daily variables (Tmax, Tmin and precipitation) for a FLOR model by mid-August, making these variables for the other models over time. GFDL will make other variables available as resources permit.

Note: some modeling centers will provide total precipitation and some will separately provide convective large-scale precipitation.

Model Data Specifications

Real-Time Monthly fields (8)

2m T daily max	Tasmax	air_temperature
2m T daily min	Tasmin	air_temperature
2m temperature	Tas	air_temperature
200 mb Geopotential	G	geopotential
Total precipitation	prlr	precipitation_rate
Total soil moisture	Mrsov	volume_fraction_of_water_in_soil
Surface temperature (SST+land)	Ts	surface_temperature
Surface runoff	mrros	Surface runoff flux

Daily atmospheric and land surface fields (22)

Variable	Var. Name	CF Standard Name
Surface temperature (SST+land)	Ts	surface_temperature
2m T daily max	Tasmax	air_temperature
2m T daily min	Tasmin	air_temperature
Mean sea level pressure	Psl	air_pressure_at_sea_level
Snow water equivalent	swe	Snow water equivalent
Total soil moisture	Mrsov	volume_fraction_of_water_in_soil
Total precipitation*	prlr	precipitation_rate
Downward surface solar	Rsds	surface_downwelling_shortwave_flux_in_air
Downward surface longwave	Rlds	surface_downwelling_longwave_flux_in_air
Net surface solar	Rss	surface_net_downward_shortwave_flux
Net surface longwave	Rls	surface_net_downward_longwave_flux
Top net solar	Rst	toa_net_downward_shortwave_flux
Top net longwave	Rlt	toa_net_downward_longwave_flux
Surface latent flux	Hflsd	surface_downward_latent_heat_flux
Surface sensible flux	Hfssd	surface_downward_sensible_heat_flux
Surface stress (x)	Tauu	surface zonal stress positive to the west
Surface stress (y)	Tauv	surface meridional stress positive to the south
2m temperature	Tas	air_temperature
Total cloud cover	Clt	cloud_area_fraction
10m wind (u)	Uas	eastward_wind
10m wind (v)	Vas	northward_wind
Surface specific humidity	huss	Surface specific humidity

Daily atmospheric pressure level fields (5)

Provided at 850, 500, 200, 100, 50 hPa

Variable	Var. Name	CF Standard Name
Geopotential	G	geopotential
Temperature	Ta	air_temperature
Zonal velocity	ua	eastward_wind
Meridional velocity	va	northward_wind
Specific humidity	hus	specific_humidity

Monthly sea ice fields (2)

Variable	Var. Name	CF Standard Name
Sea ice concentration	sic	sea_ice_area_fraction
Sea ice thickness	sit	sea_ice_thickness

Monthly ocean fields (7)

3D ocean fields thetao/so/uo/vo/wo are provided at depths of 0.0, 10.0, 20.0, 30.0, 50.0, 75.0, 100.0, 125.0, 150.0, 200.0, 250.0, 300.0, and 400.0 m

Variable	Var. Name	CF Standard Name
Potential temperature	thetao	sea_water_potential_temperature
Salinity	so	sea_water_salinity
Zonal velocity	uo	sea_water_x_velocity
Meridional velocity	vo	sea_water_y_velocity
Vertical velocity	wo	upward_sea_water_velocity
Sea level	zoh	sea_surface_height_above_geoid
Mixed layer depth	zmlo	ocean_mixed_layer_thickness