

Dear Potential CONDUIT / Unidata Users:

NCEP is asking that a new modeling product be added to the CONDUIT feed. It is the Fire Weather / IMET Support (FWIS) run. The FWIS runs are high resolution innermost nests of the new NAM that are placeable within either the 4 km CONUS or 6 km Alaska nests that run every cycle of the new NAM (beginning ~20 Sept). We can afford to run just one FWIS each cycle at 00z, 06z, 12z and 18z and we run it to 36 hours. If it is placed inside the CONUS, then it runs with a 1.33 km horizontal spacing using a 375x375x60 grid. If it is placed inside Alaska, then it runs with a 1.5 km horizontal spacing using a 333x333x60 grid. FWIS runs on a rotated lat-long grid and uses a B-grid stagger of variables. The vertical coordinate & resolution are identical to NAM and its nests – i.e. sigma-pressure hybrid with a top at 2 mb. More information about the new NAM upgrade package can be found at

http://www.emc.ncep.noaa.gov/impdoc/NAM3.0/EMC_CCB.NAM+NAQF_CupgradeBundle_4April2011.ppt

FWIS runs are initialized using a standard application of the Grid-point Statistical Interpolation (GSI) 3d-variational analysis. There are, at the moment, no special attempts to adjust parameters like de-correlation length in this run and since the observational input is identical to that of the 12 km NAM and 4 km CONUS, the initial fields are essentially identical. Future versions will have more targeted attempts to reflect smaller stormscale features in the FWIS initial and lower boundary conditions. With the FWIS nest running as an inline run inside the NAM, it receives frequent lateral boundary updates after every 4 km CONUS nest time step or every ~9 seconds.

For FWIS inside CONUS, all output fields are mapped to a 1.27 km Lambert conic-conformal grid whose size varies to encompass as completely as possible the FWIS computational domain. For FWIS inside Alaska, all output fields are mapped to a 1.48825 km polar-stereographic grid whose size varies to encompass as completely as possible the FWIS computational domain. This gridded output is packed GRIB2 so the precise navigation information is provided but they are subsets of grid 90 (CONUS) and grid 92 (Alaska) as defined for GRIB1 at

<http://www.nco.ncep.noaa.gov/pmb/docs/on388/tableb.html> . The variability in this remapping will go away completely when we allow nests in the NMMB to differ from their parent's grid orientation (in 2012 or 2013). The output fields being generated are listed at

<http://www.emc.ncep.noaa.gov/mmb/mmbpll/misc/nam.t12z.firewxnest.hiresf24.tm00.grib2.shtml> .

For IMETs, these FWIS runs are destined to be processed by the NWS regions who will use LDM to acquire the FWIS fields which are then processed onto FX-Net servers for use by the IMETs in the field via their satellite equipped laptops. In the meantime, they have been evaluating a small number of output fields from the parallel runs at NCEP via Eric Rogers' most excellent webpage

<http://www.emc.ncep.noaa.gov/mmb/mmbpll/firewx/> .

The choice of where the FWIS runs are made each cycle is coordinated by NCEP's Senior Duty Meteorologist (SDM) and made primarily by the National Interagency Fire Center (NIFC) in Boise, Idaho. When no IMETs are deployed and/or during the fire-weather off-season, NCEP's SPC has first choice but with input from any of the other NCEP service centers (AWC, HPC, NHC, or OPC), any of the NWS regions or from the NWS liaison to DHS. While not specifically designed for any one application, we did run FWIS for Irene – see the attached PowerPoint for an early example.