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Technical Implementation Notice 15-38
NOAA National Ocean Service Headquarters Washington DC
Relayed by National Weather Service Headquarters Washington DC
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From:     Pat Burke
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          NOS Center for Operational Oceanographic Products and Services
          (CO-OPS)

Subject: Updating National Ocean Service's Oceanographic Forecast Modeling
Systems: Effective October 6, 2015

Effective October 6, 2015 beginning at 1500 Coordinated Universal Time
(UTC) (11AM EDT), updates of National Ocean Service Operational Forecast
Systems will be implemented on NOAA's Weather Climate Operational
Supercomputing System (WCOSS) operated by the National Centers for
Environmental Prediction (NCEP) Central Operations (NCO).  The updates
include ROMS and FVCOM version updating and shared framework (COMF)
updates.  COMF updates include using NCO standard module files and other
enhancements.  The details of this implementation are:

ROMS version Updates for CBOFS, DBOFS, and TBOFS

The core ocean model currently used for CBOFS, DBOFS and TBOFS is ROMS3.6
v90 released in 2007, which is no longer supported by ROMS developers at
Rutgers University.  The latest ROMS3.7 Version 766, released in June
2015, will replace the ROMS version 90.  Version 766 includes many bug
fixes in ROMS version 90 and adds new features.

The horizontal and vertical mixing schemes for tracers are replaced by
Fourth-order Akima advection based on recommendations of ROMS developers
and semi-operational testing results.  A new option of C-preprocessor
(CPP) in the surface heat flux boundary condition subroutine (set_vbc.F)
was developed by Rutgers University to prevent the water temperature
decreasing beyond the freezing point of seawater (when a sea ice model is
not active).  This option was tested by the CO-OPS Modeling team using
CBOFS and DBOFS and the expected results were achieved.  This option is
critical for Cook Inlet OFS (CIOFS), which will be implemented in fiscal
year (FY) 2016.

There are not major changes regarding hydrodynamics and physics in this
version compared with ROMS3.6 version 90.  Therefore, the results obtained
from using ROMS3.6 and ROMS3.7 are similar for CBOFS, DBOFS and TBOFS.

There are no changes of CBOFS, DBOFS and TBOFS products (e.g., file name and contents, deliver time, etc.) for end users.

FVCOM version updates for NGOFS, NEGOFS, NWGOFS, and SFBOFS FVCOM version updates will resolve and enhance the following features:

- Fix the jetty bug in the present FVCOM version used by NWGOFS (vertvl_edge.F) which will currently impact NWGOFS.  This bug causes modeled water temperature near jetties to be unrealistically cold for NWGOFS.

- Resolve repeatability issue, important for FVCOM model failure debugging.

- Add a new module to calculate heat flux for Great Lakes OFS (mod_solar.F).

- Add similar feature as in ROMS to prevent the water temperature decreasing beyond the freezing point of water when an ice model is not active.

- Implement other enhancements required by FVCOM-based Lake Erie OFS implementation.

Gridded and point forecast guidance from parallel runs will be available in netCDF files on the NCEP NOAA Operational Model Archive and Distribution System (NOMADS) server (para.nomads.ncep.noaa.gov) in the directory:

/pub/data/nccf/com/nos/para/

Graphics products are displayed on the CO-OPS webpage at:

https://tidesandcurrents.noaa.gov/ofs/dev/{OFS}/{OFS}.html

Where OFS is cbofs, dbofs, tbofs, ngofs, sfbofs, etc.

For concerning these changes, please contact:

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National Technical Information Notices are online at:

https://www.weather.gov/notification/archive

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