WRF for Hurricanes

Status report by the Developmental Testbed Center Ligia Bernardet



HRD Modeling Meeting, August 19 2010

Goal

Support HFIP goal of improving hurricane forecast skill by facilitating transition of new developments onto operations

Method

- Make HWRF model available and supported to community
- Add new developments to community code
- Create HWRF testing infrastructure in HFIP computer
- Perform testing and evaluation of HWRF in support of EMC and HFIP



Community HWRF released in March 2010:

a coupled atmospheric-ocean prediction system



HWRF code management. Part 1: WRF.



HWRF code management. Part 2: Vortex initialization, POM, POM initialization, coupler, tracker



WRF for Hurricanes: joint site DTC/MMM/EMC http://www.dtcenter.org/HurrWRF/users/

lome	WRF For Hurricanes	Events
Ferms of Use Overview Jser Support Downloads Documentation	Welcome to the users page on WRF for Hurricanes. The <u>Weather Research</u> and <u>Forecasting (WRF)</u> Model is designed to serve both operational forecasting and atmospheric research needs. It features two dynamic cores, multiple physical parameterizations, a variational data assimilation system, ability to couple with an ocean model, and a software architecture allowing for computational parallelism and system extensibility. WRF is suitable for a broad spectrum of applications, including tropical storms.	Vents NUOPC Workshop - by invitation 08.16.2010 to 08.18.2010 Location: NCAR's Foothills Lab, Boulder, CO DTC Ensemble Testbed (DET) Workshop - by invitation 08.18.2010 to 08.20.2010 Location: NCAR's Foothills Lab, Boulder, CO
Tutorial Information Additional Links	Two robust configurations of WRF for tropical storms are the NOAA operational model <u>Hurricane WRF (HWRF)</u> and the National Center for Atmospheric Research (NCAR) <u>Advanced Research Hurricane WRF (AHW)</u> . In this website users can obtain codes, datasets, and information for running both HWRF and AHW. The <u>Developmental Testbed Center</u> and the <u>Mesoscale and Microscale</u> <u>Meteorology (MMM)</u> Division of NCAR support the use of all components of AHW and HWRF to the community, including the WRF atmospheric model with its Preprocessing System (WPS), various vortex initialization procedures, the Princeton Ocean Model for Tropical Cyclones (POM-TC), the <u>NOAA National</u> <u>Centers for Environmental Prediction (NCEP)</u> coupler, the NOAA <u>Responsional Fluid Dynamics Laboratory (GFDL</u>) Vortex Tracker, and various postprocessing packages and graphical utilities. The effort to develop AHW has been a collaborative partnership, principally among NCAR, the <u>Rosenstiel School at the University of Miami</u> , and the <u>Air</u> <u>Force Weather Agency (AFWA)</u> .	Announcements 1 2 March 2010: Beta V0.9 release of the HWRF system 3 1 March 2010: WRF V3.2 release. 4 August 2010: Full release of the HWRF system, following the V3.2.1 WRF release. Drganizations contributing to this webss Developmental Testbed Center (DTC) NCAR's Mesoscale & Microscale Meteorology Division (MMM) Sponsors of WRF for Hurricanes

- AHW and HWRF
- •Code downloads
- •Users' Guide
- •Scientific documentation
- •Datasets
- •Helpdesk

One hundred registered users

Developmental Testbed Center

6

Testing infrastructure on njet

- DTC has created testing suite for HWRF on jet using NOAA Workflow Manager for automation – now including GSI.
- This suite will be made available to HFIP participants for HWRF testing.
- Further testing will continue to:
 - Quantify impacts of bug fixes and porting changes in vortex initialization and other non-WRF codes
 - Assess forecast skill using HYCOM
 - Assist EMC with 2011 implementation



