

# Summer plans

Various groups are running real-time model systems during the upcoming hurricane season, some involving data assimilation, some in cooperation with HFIP.

# PSU/Fuqing Zhang

WRF-ARW

EnKF using radar and non-radiance satellite data.

[radar includes airborne Doppler and ground-based, if available]

30-member ensemble

Assimilation at 4.5 km, model as low as 1.5 km

Starting in July.

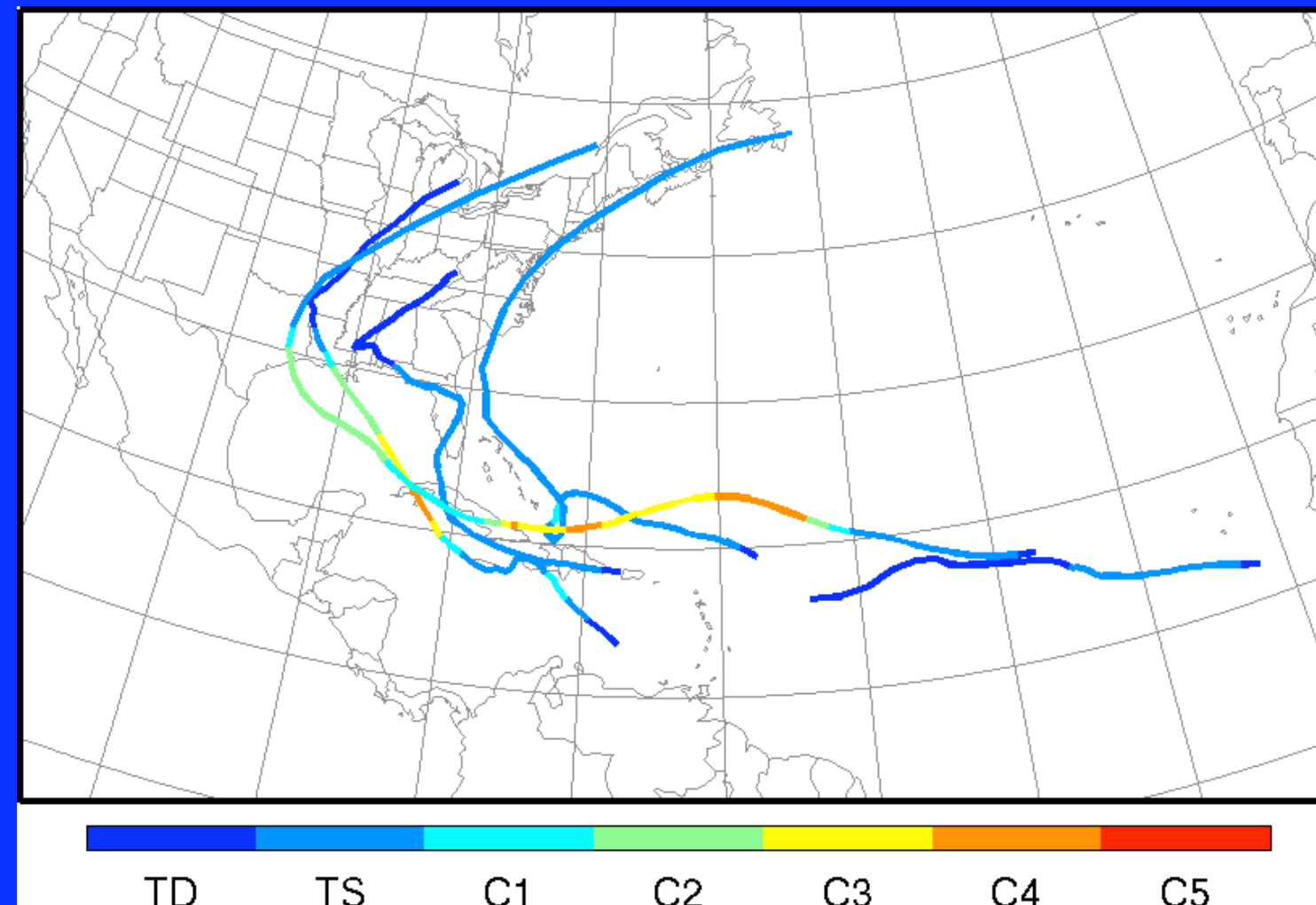
Atlantic only.

In cooperation with HFIP

# NCAR/U. Albany Plans

- NCAR/MMM participated in DTC/HFIP High Resolution Hurricane Test. Initial conditions were generated using mesoscale ensemble data assimilation system
- High resolution forecast (up to 1.33 km) initialized off of 36 km resolution ensemble member analysis
- Idea was not to generate best analysis of TC itself, rather goal was to generate an analysis that:
  - Has a good estimate of environment
  - Has a decent estimate of TC structure
  - Does not lead to initialization problems
- Want to build off of success of generating initial conditions for HFIP storms by running real-time in 2009

- Starting 1 August, will generate ensemble analyses in real-time at same resolution on similar domain
- Assimilate each six-hours
  - Surface pressure, rawinsondes, environment drops, ACARS, sat winds, TC position/intensity
- Initialize high-resolution forecast off one member analysis; forecast will be included in super-ensemble
- Demonstration will be performed from 10 Aug. to 15 Sept. 2008



# ESRL

LAPS in the Caribbean region.

10-km resolution

hourly

<http://laps.noaa.gov/cgi/laps/domains/h1/>

[laps\\_anl\\_h1\\_wd0\\_latest.cgi](#), for more information

# ESRL

STMAS (eventually generalized 4DVAR to Kalman Filter)

WRF-ARW

25-km resolution, no inner-core data yet

# **NRL-MRY**

COAMPS-TC (possibly fully coupled version)

45/15/5-km resolution

3DVAR (NAVDAS) every 6h with synthetic vortex

# **HFIP Demonstration Project**

To run on TACC.

EnKF

FIM at 30 km resolution

60-member ensemble

6 h cycling



# Considerations

Users must make sure they understand limitations and characteristics of aircraft datasets, especially Doppler radar and dropwindsondes.

1. Airborne Doppler radar data - quality-controlled radial wind data  
[http://www.aoml.noaa.gov/hrd/Storm\\_pages/Doppler.html](http://www.aoml.noaa.gov/hrd/Storm_pages/Doppler.html)
2. Dropwindsonde data  
[http://www.aoml.noaa.gov/hrd/Storm\\_pages/sondeformat.html](http://www.aoml.noaa.gov/hrd/Storm_pages/sondeformat.html)

HRD is working on code to account for dropwindsonde drift (akin to code for rawinsonde drift), and will make it available once it is tested. [Now in final testing.]

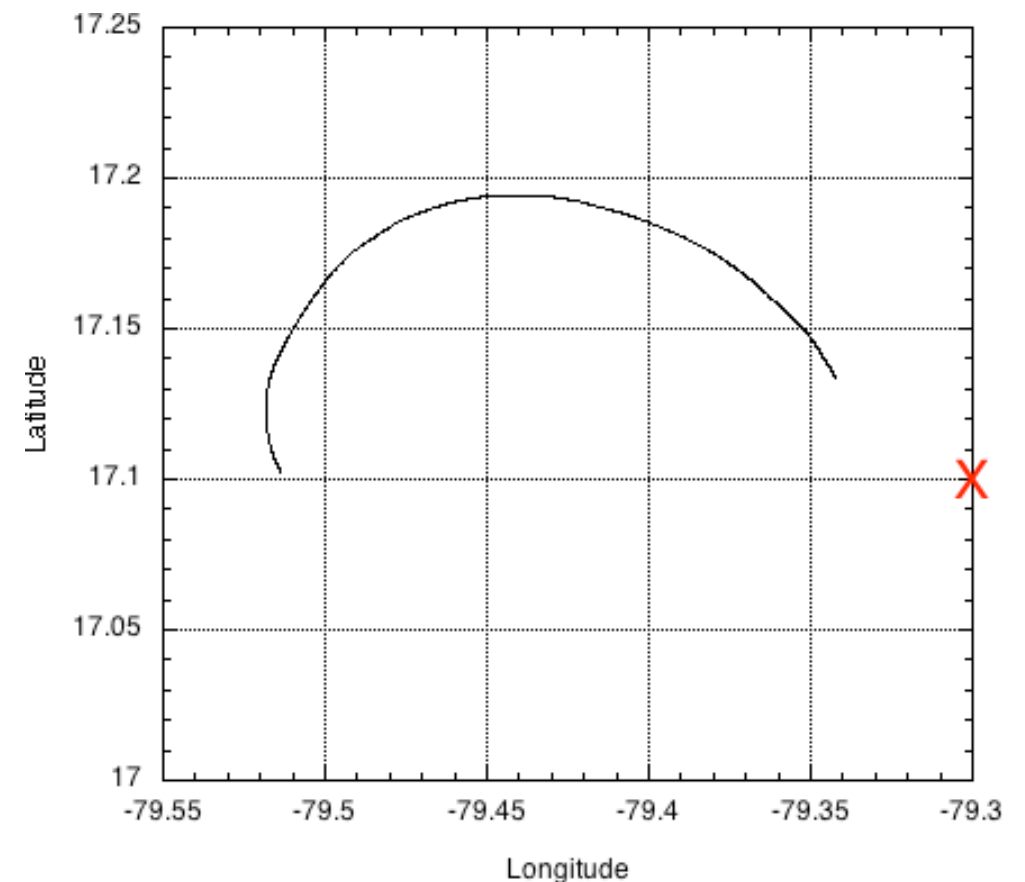


Figure 5. Trajectory of a dropwindsonde released in the eyewall of Hurricane Emily 16 July 2005. The 'X' marks the location provided on the TEMPDROP message and represents the only location available for assimilation of the dropwindsonde data.

