Second HFIP regional modeling team workshop

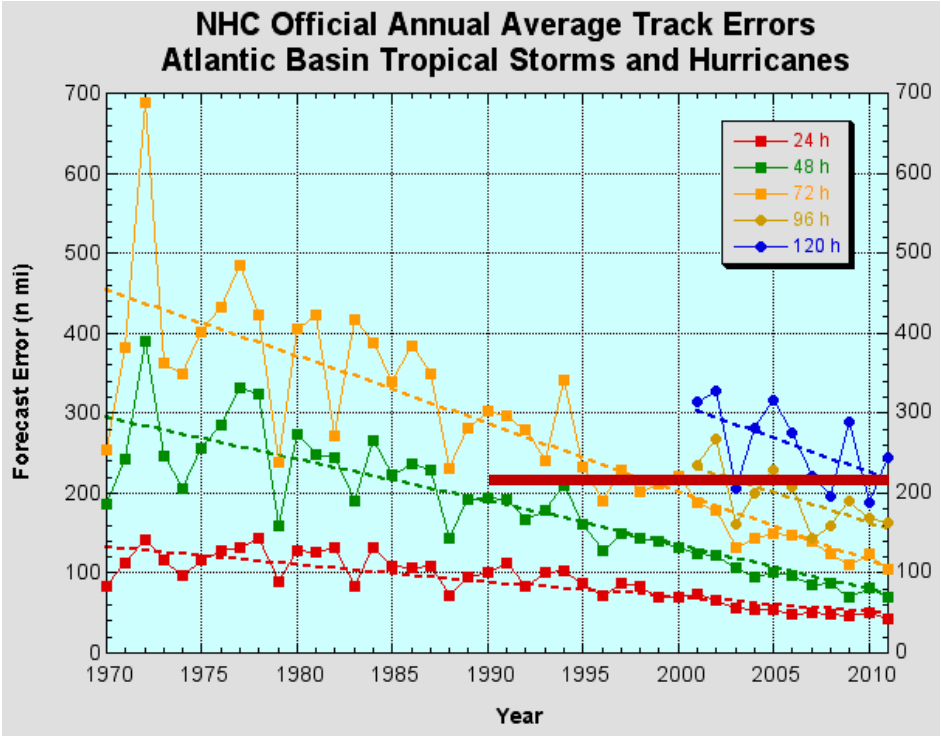
Sept. 17 – Sept. 18 2012

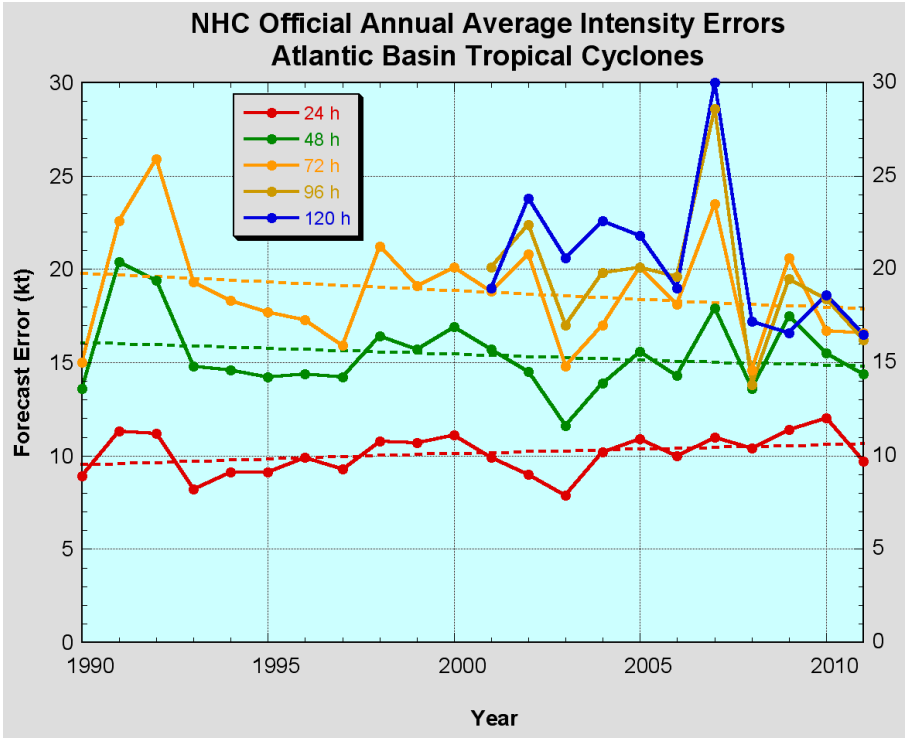
Conference room 2890 EMC

Young C. Kwon

Main topic of the workshop:

How to improve hurricane intensity forecast skills of operational regional dynamical models, especially R.I.





Questions to be answered/addressed:

1. What approaches would be better strategy for intensity forecast improvement in terms of physics upgrades Incremental upgrades vs. experiments with new physics suite
2. How to identify the processes which govern the hurricane intensity changes
3. How to utilize observation data and diagnostics tools collaboration with HFIP observation team and diagnostics team
4. Predictability of hurricane intensity

Workshop schedule

Sept. 17 (Monday)

13:00 – 13:15 Welcome remarks: Robert Gall & William Lapenta
13:15 – 13:25 **Young Kwon**: Workshop introduction
13:25 – 13:40 **Young Kwon**: EMC's activity on physics development
13:40 – 14:00 **Hua-lu Pan**
14:00 – 14:15 **Qingfu Liu**
14:15 – 14:35 **Dave Zelinsky**
14:35 – 14:55 **Ligia Bernardet**

14:55 – 15:10 Break

15:10 – 17:00 Discussion on moist physics and hu GoTo Meeting not
Chair: Hua-lu Pan; Co-Chai available 3-4PM

17:30: reception (1st floor cafeteria)

Sept. 18 (Tuesday)

09:10 – 09:40 **Joe Cione/Eric Ulhorn**
09:40 – 10:00 **Isaac Ginis**
10:00 – 10:20 **James Doyle**
10:20 – 10:40 **Mark DeMaria**

10:40 – 11:00 Break

11:00 – 12:30 Discussion on role of air-sea interaction on hurricane intensity.
Chair: Isaac Ginis; Co-Chair: JW Bao

12:30 – 13:30 Lunch

13:30 – 13:50 **Jun Zhang**
13:50 – 14:10 **JW Bao & C. Fairall**
14:10 – 14:30 **Gopal**
14:30 – 15:00 **Dave Nolan**

15:00 – 15:30 Break

15:30 – 17:30 Discussion and wrap-up.
Chair: Vijay Tallapragada and Co-Chair: Young Kwon

17:30 Adjourn

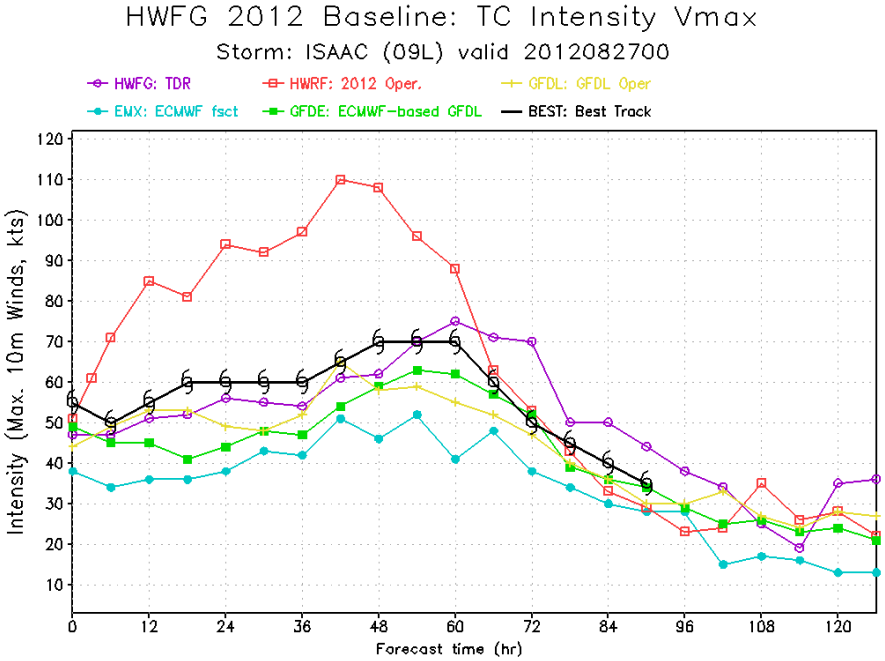
Possible three contribution factors on hurricane intensity change

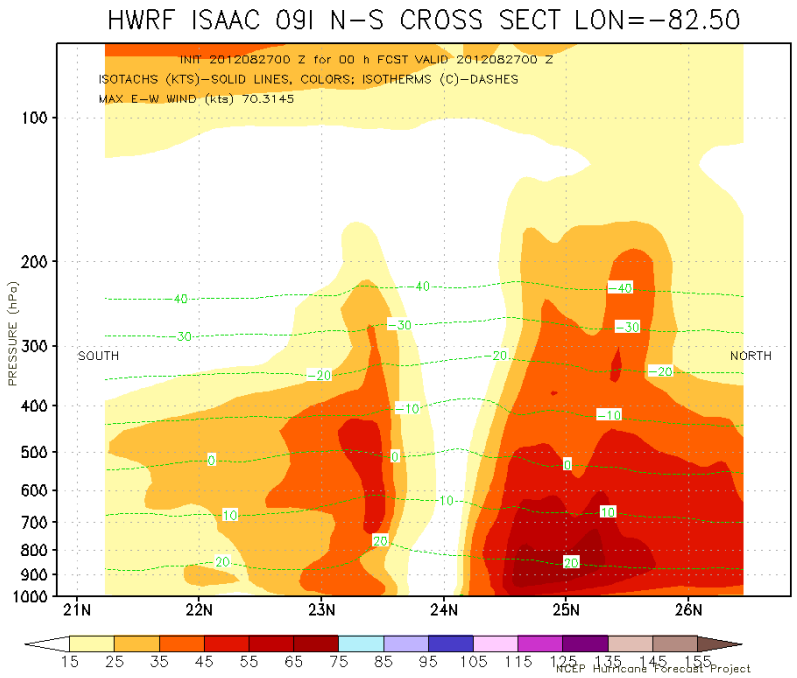
1. Large scale environment:
   SST, lower-level convergence, upper-level divergence, TUTT and so on.
   Relatively well simulated.

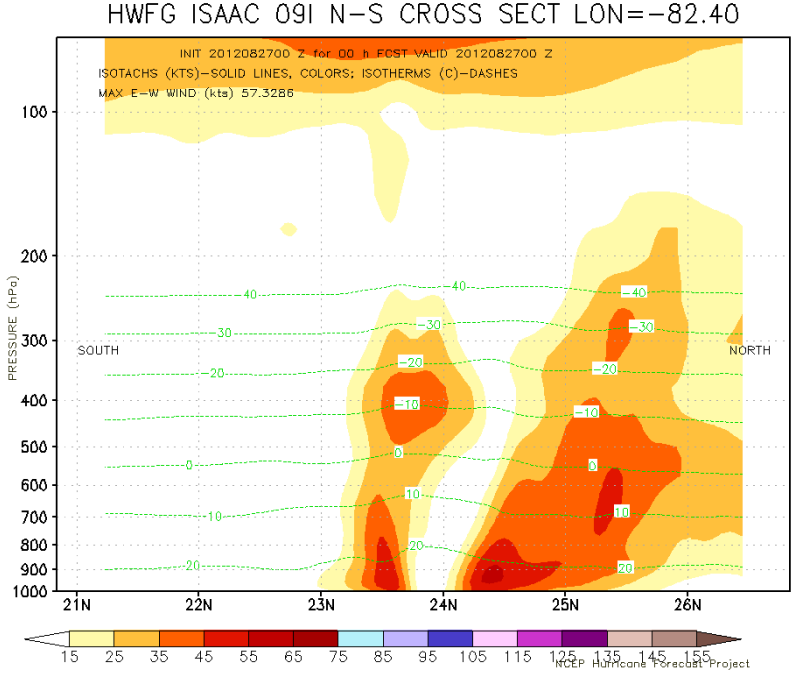
2. Vortex internal dynamics:
   Vortex Rossby waves, vortex internal instabilities (brotropic & baorlcinic)
   Need fine resolution grids – necessary condition but not sufficient condition

3. Large scale and vortex interactions:
   Interaction between large scale shear and vortex

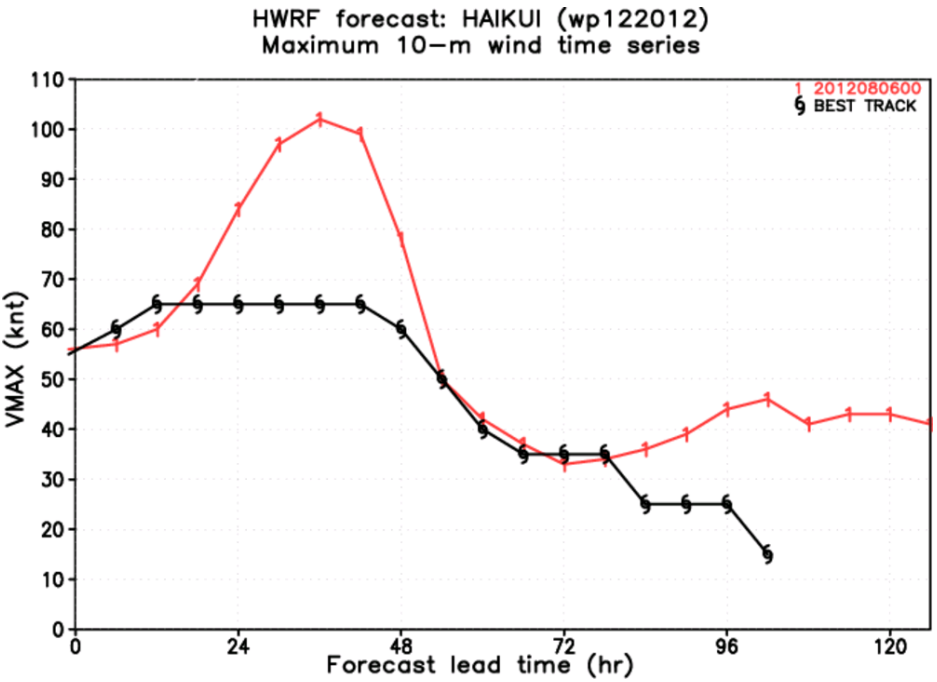
Impact of TDR data to hurricane intensity forecast



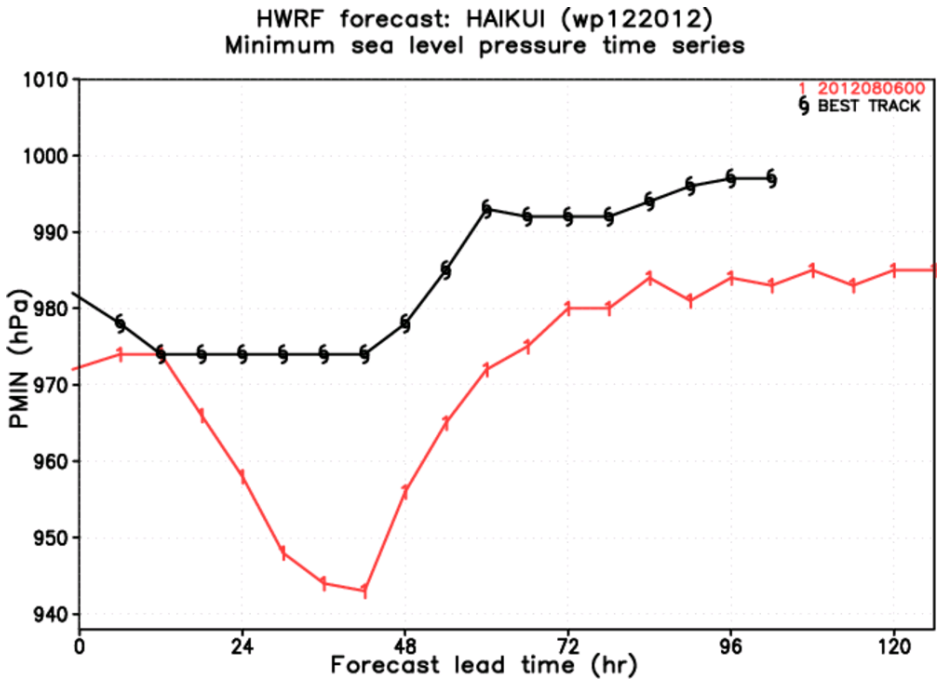




Typhoon Haikui (2012080600) intensity forecast by HWRF model



Maximum 10m Wind



Minimum Pressure