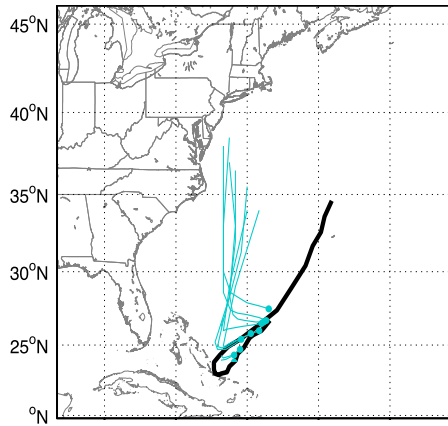
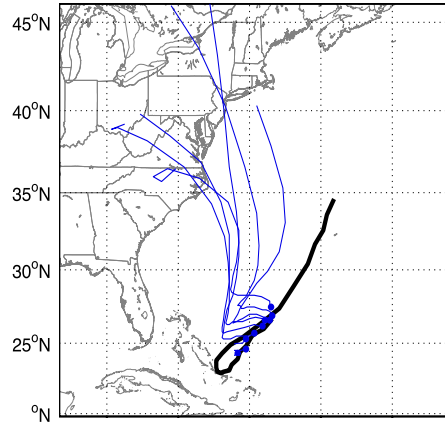


# PSU HWRf-EnKF and ARW-HWRf real-time systems for Joaquin (2015)

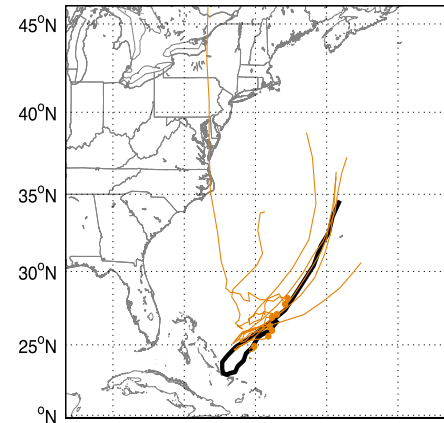
## NHC OFCL



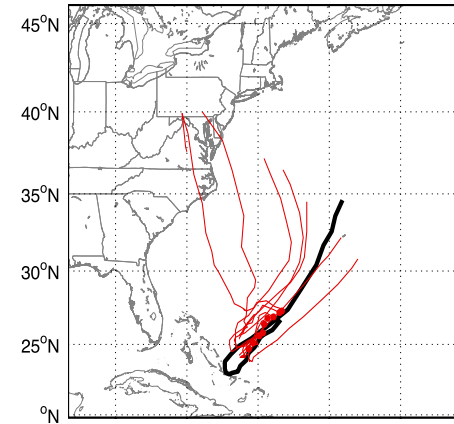
## EMC HWRf



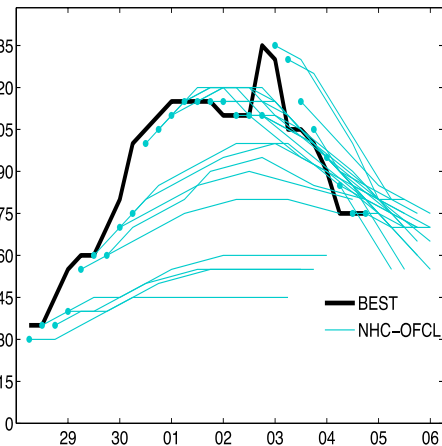
## PSU HWRf-EnKF



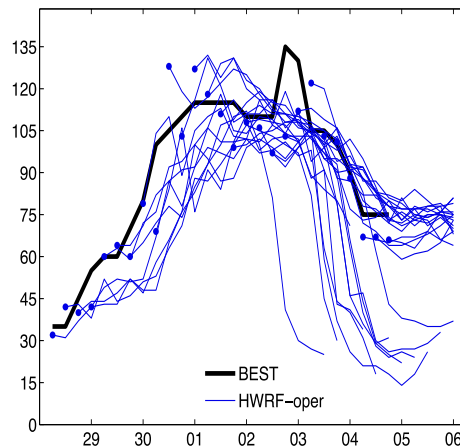
## PSU ARW-EnKF



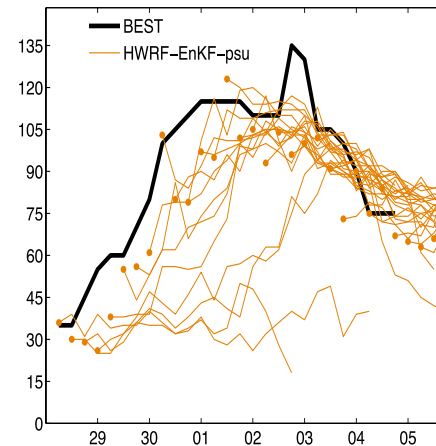
## NHC OFCL



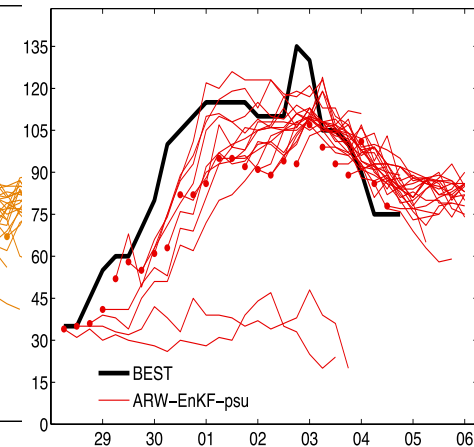
## EMC HWRf



## PSU HWRf-EnKF



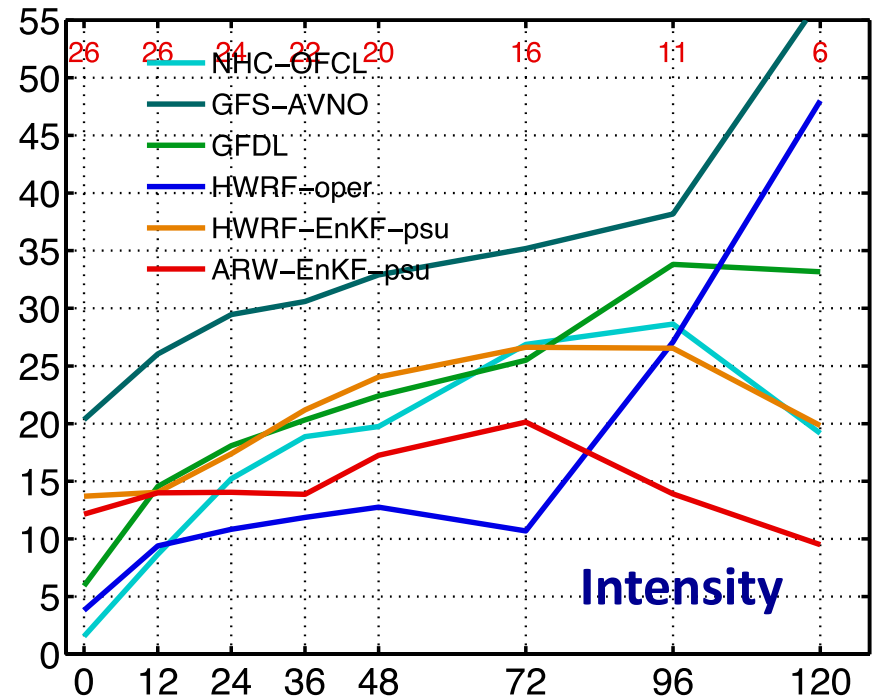
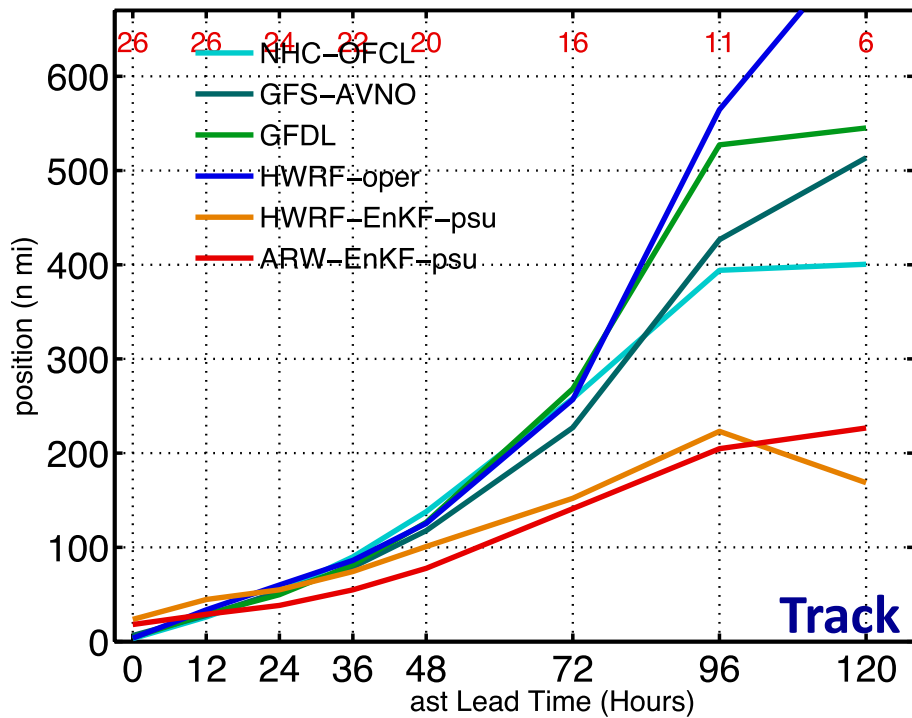
## PSU ARW-EnKF



- PSU HWRf-EnKF system initialized at 12Z Sep. 28, 2015 with GDAS analysis and its 80 perturbations;
- PSU ARW-EnKF system initialized at 00Z Sep. 28, 2015 with GDAS analysis, and generated 60-member ensemble with WRFDA;
- 6 hourly Cycling for both systems and ended at 00Z Oct. 6;
- All conventional observations including Recon, satellite derived winds were assimilated;
- ARW-EnKF system is stream 2.0, and was performed in real-time; HWRf-EnKF system was conducted without real-time computing resources.

# PSU HWRF-EnKF and ARW-EnKF real-time systems for Joaquin (2015): homogeneous comparison of mean absolute errors with operational products

Abs Error of position (n mi) for al112015-OFCLAVNOGFDLHWRFHPSUAPSU



OBEST

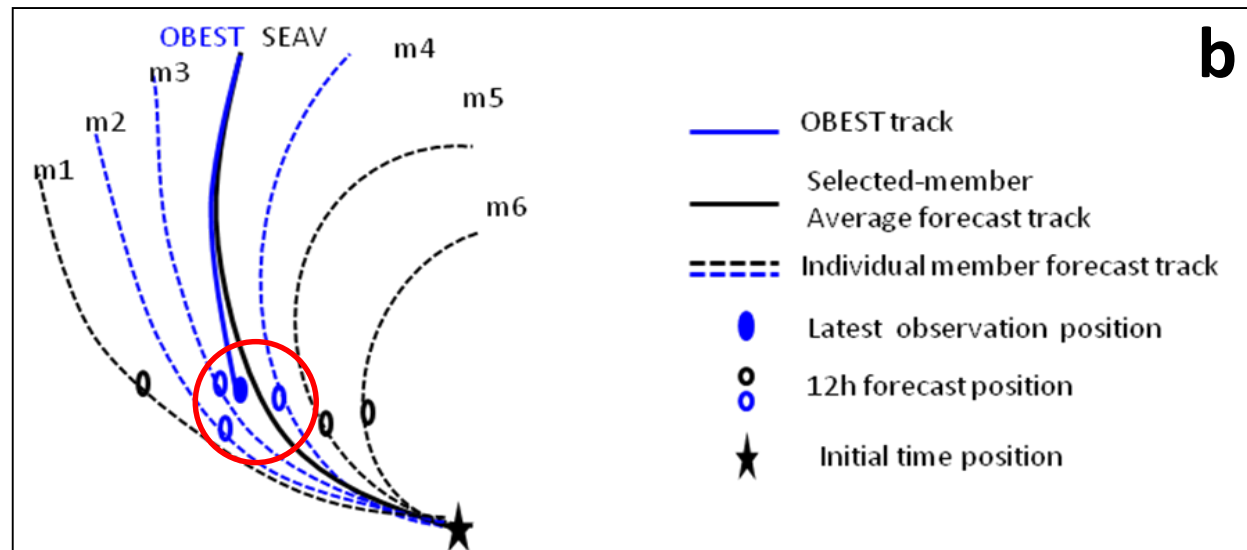
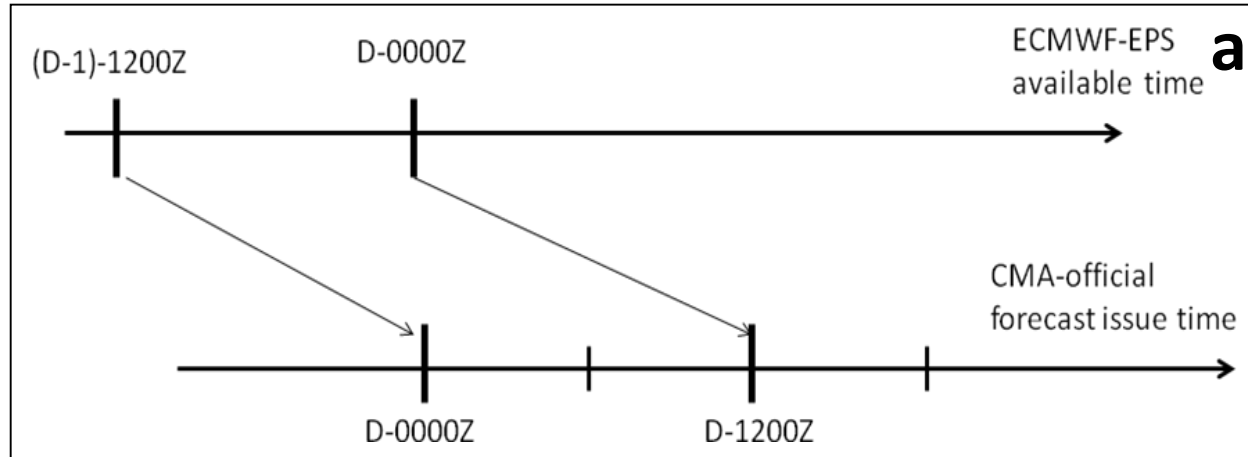
Observation-Based Ensemble  
Sub-setting Technique for Tropical  
Cyclone Track Prediction

*Lin Dong*

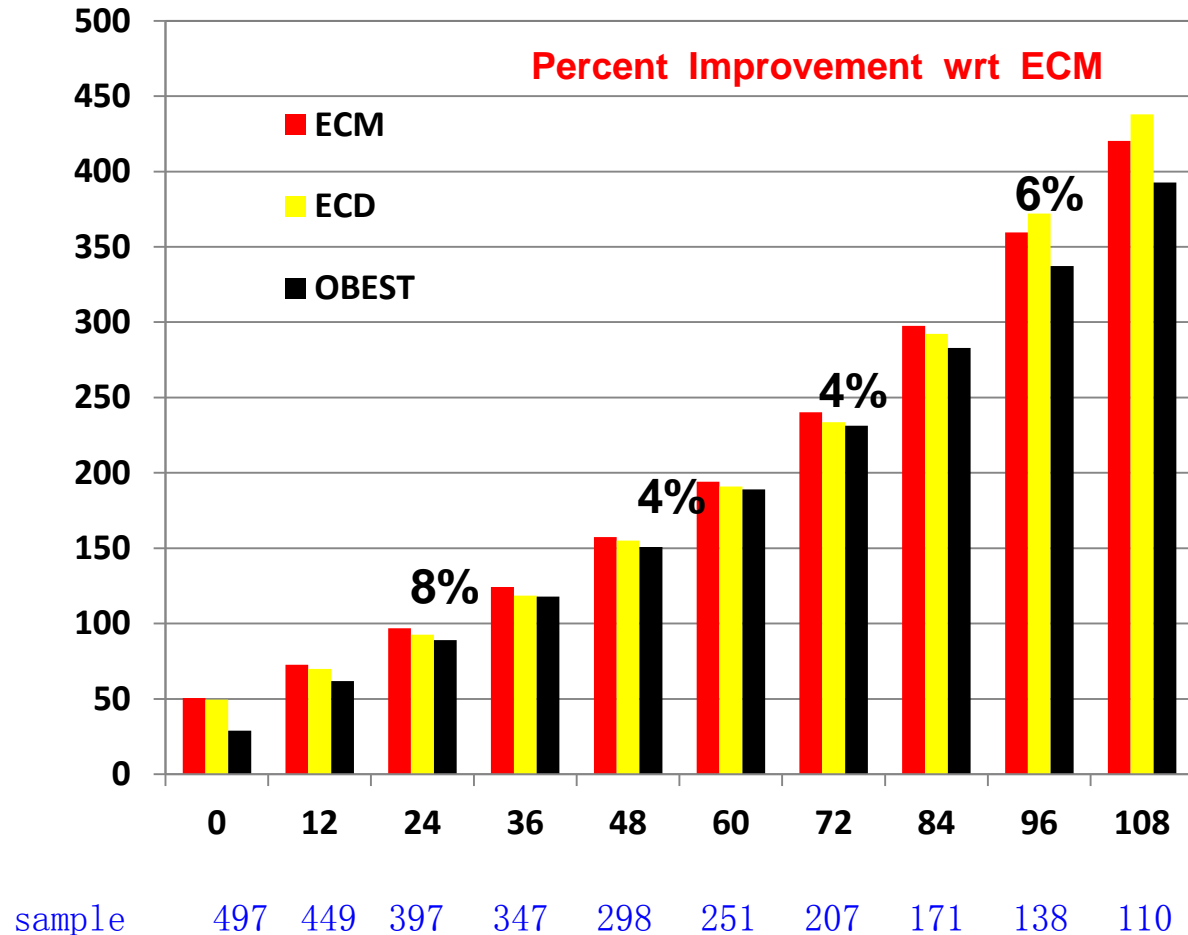
*Chinese National Meteorological Center*

*Fuqing Zhang*

*Penn State University*



## 2012-2013 EC Track Errors by CMA operation



- 1、 Consider the time lag
- 2、 calculate error based on CMA operational track

# SUPER\_OBSEST vs EC\_OBEST

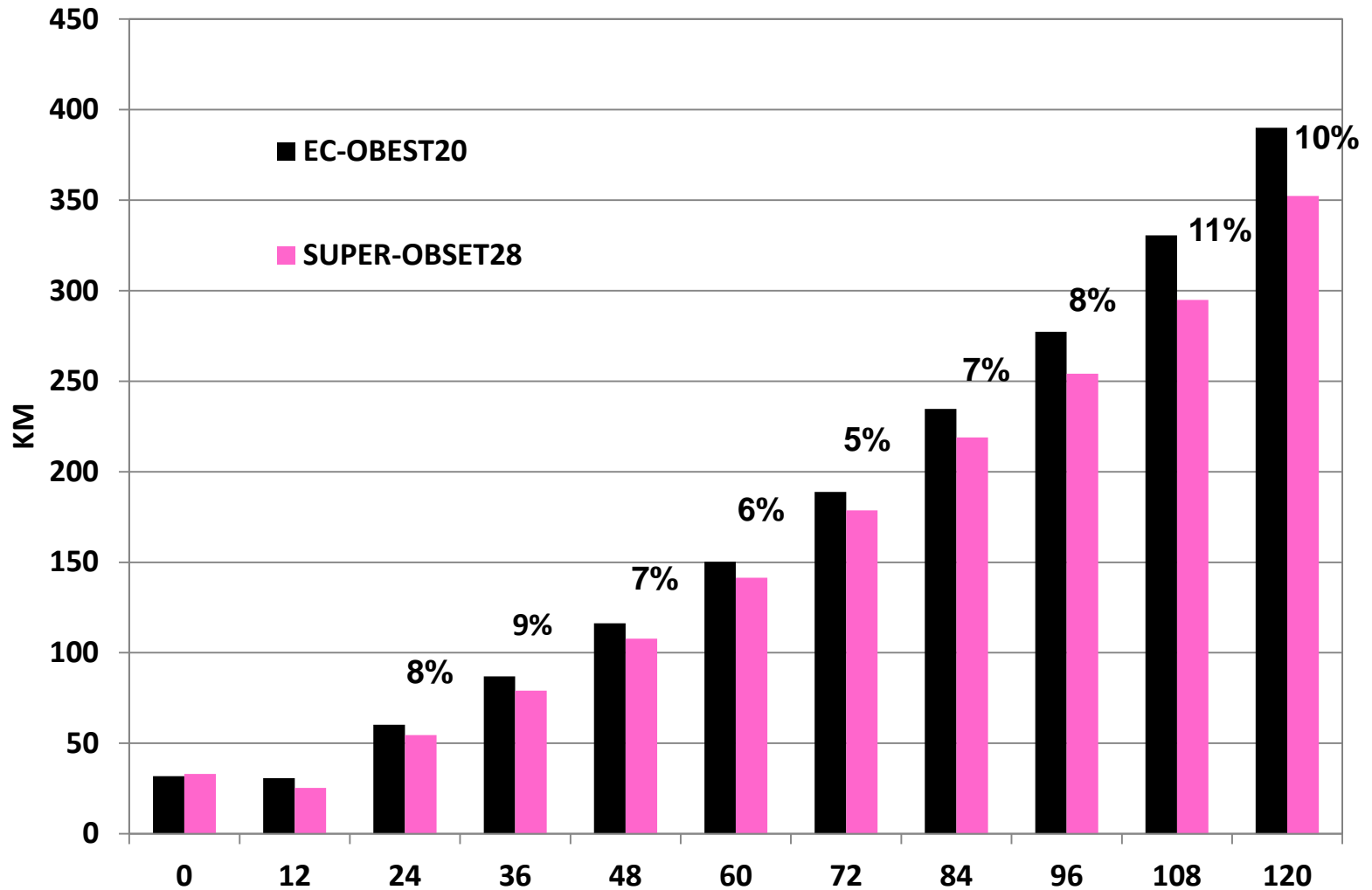
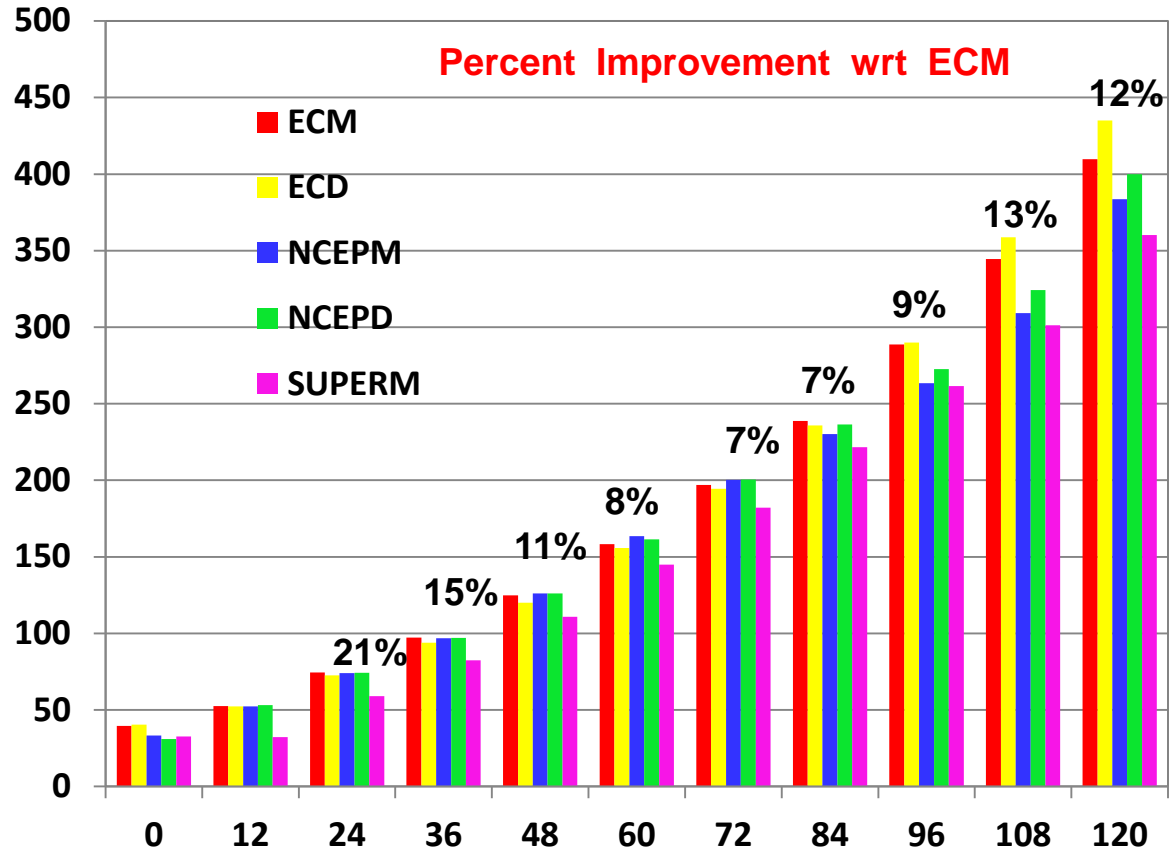


Fig 9

2012-2013 EC and NCEP Track Errors



homogeneous