

Hurricane Forecast Improvement Program | NOAA

# GFS EnKF Ensemble Performance 2010

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and Mike Fiorino

ESRL/PSD and GSD  
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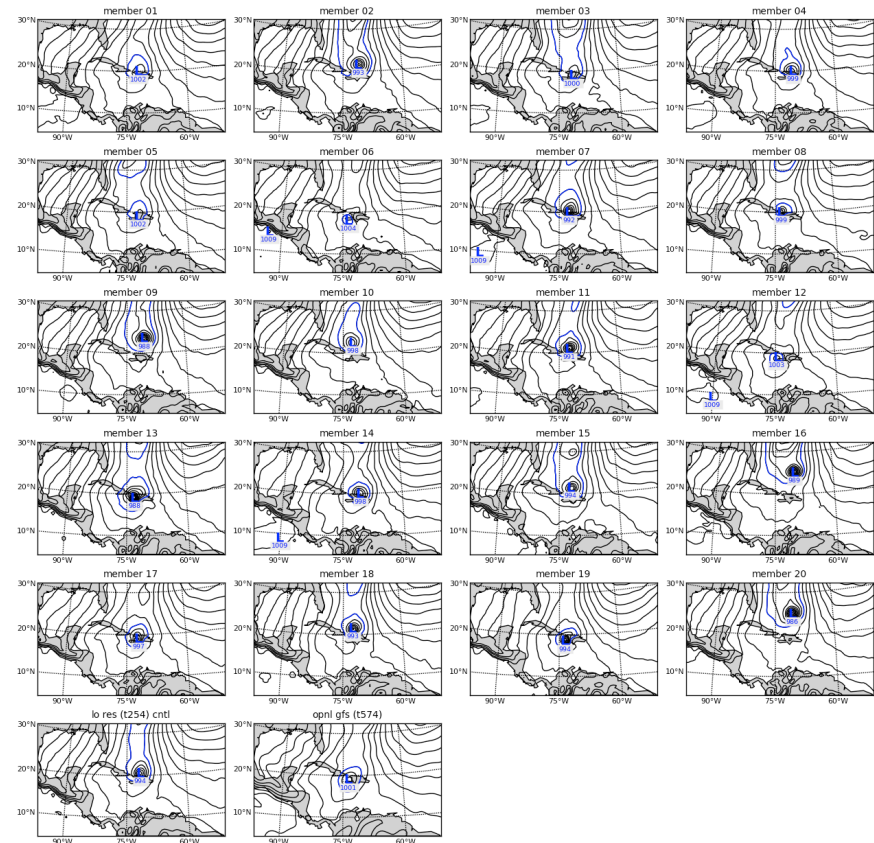
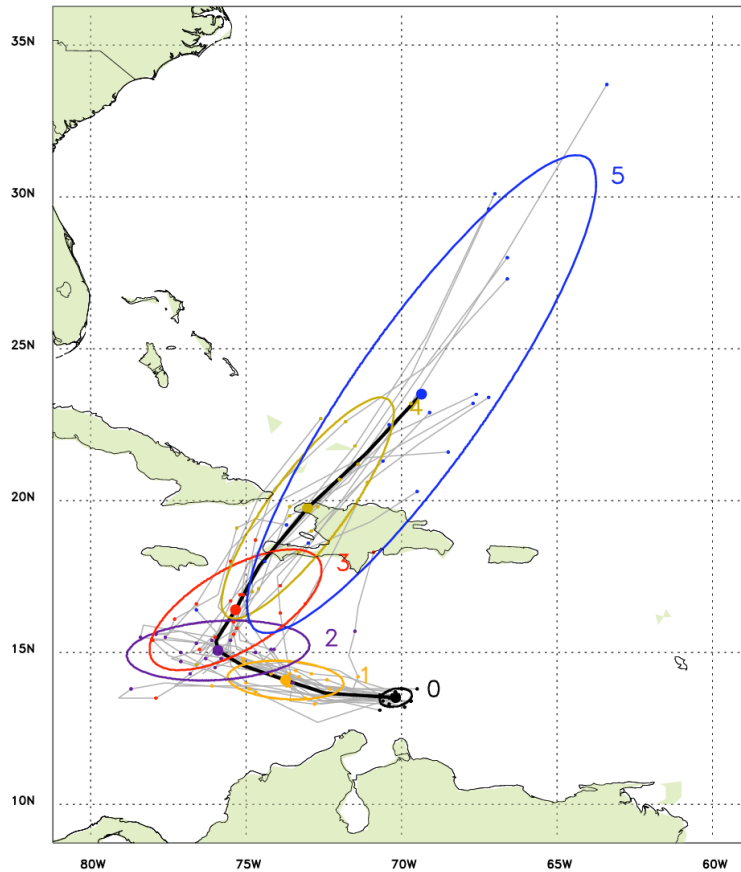
# 2010 configuration

- 80 members at T254 (instead of 60 members at T382 run in 2008 and 2009 on Ranger)
- 2010060400 onward, every 6-h, 5 day 20 member ensemble forecasts every 12-h, plus T254 and T574 control from ensemble mean.
- New (July 29 implementation) GFS.
- All obs assimilation operationally, including tcvitals central pressure (position and intensity can be assimilated separately).

<http://ruc.noaa.gov/hfip/gfsenkf>

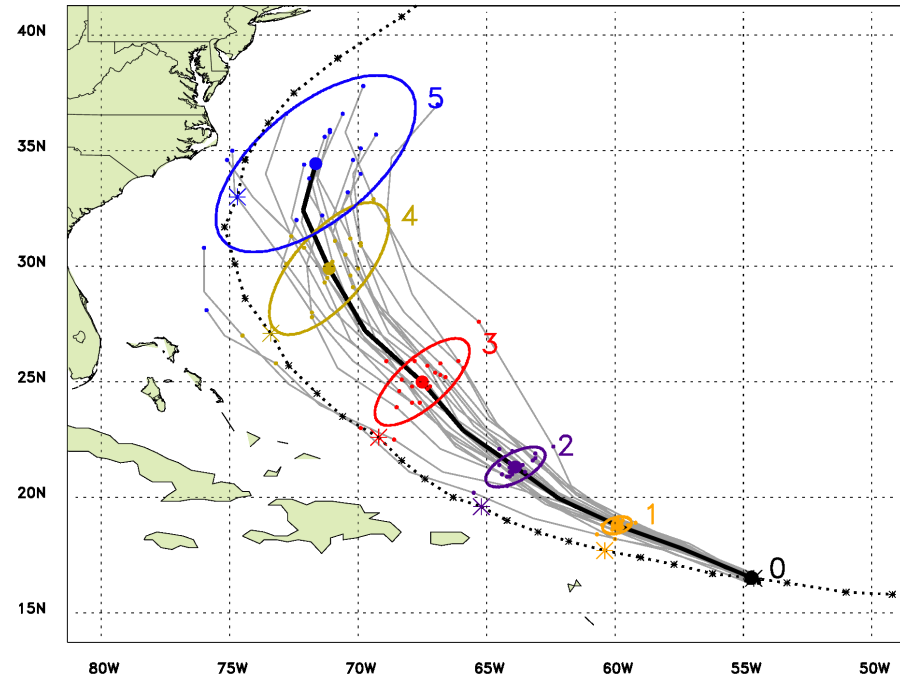
T254 GFS/EnKF MSLP ens 72-hr fcst for 21L from 2010110300

GFS/EnKF ensembles and ellipses, IC=2010110200  
for storm number 21 in the AL basin

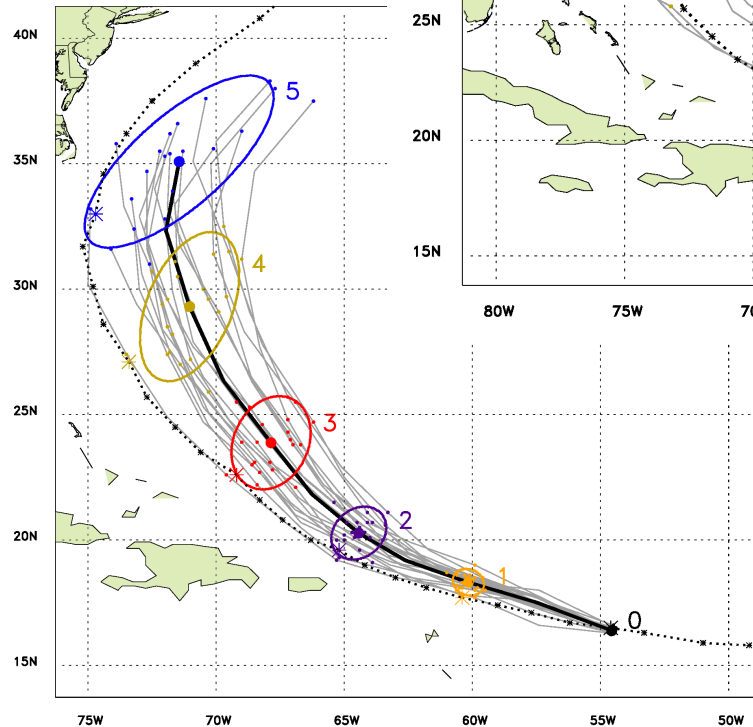


# Earl, 2010/08/29/00Z

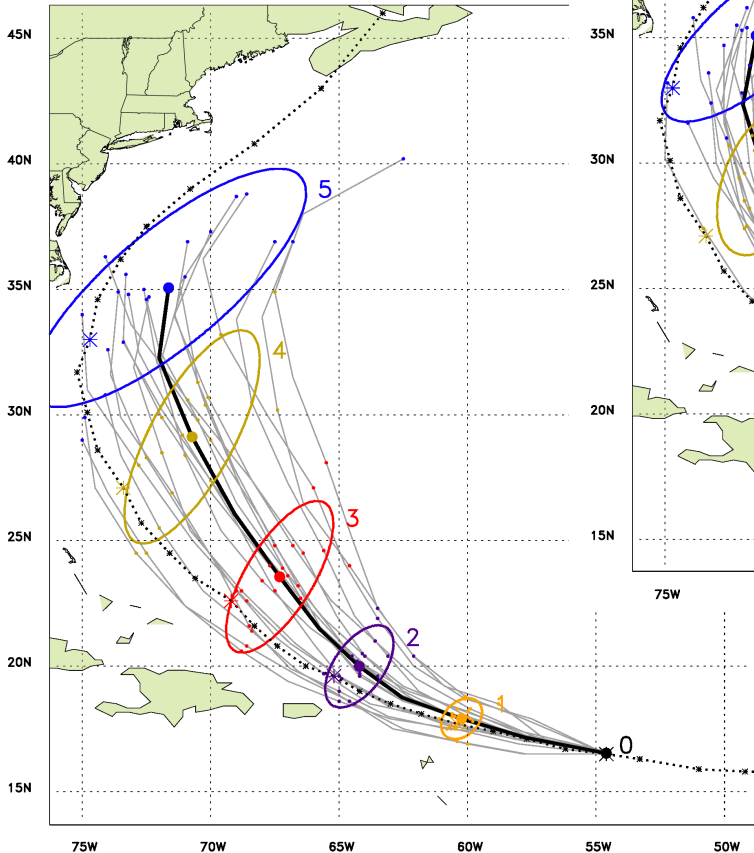
NCEP ensembles and ellipses, IC=2010082900  
for storm number 07 in the AL basin



EnKF ensembles and  
for storm numbe

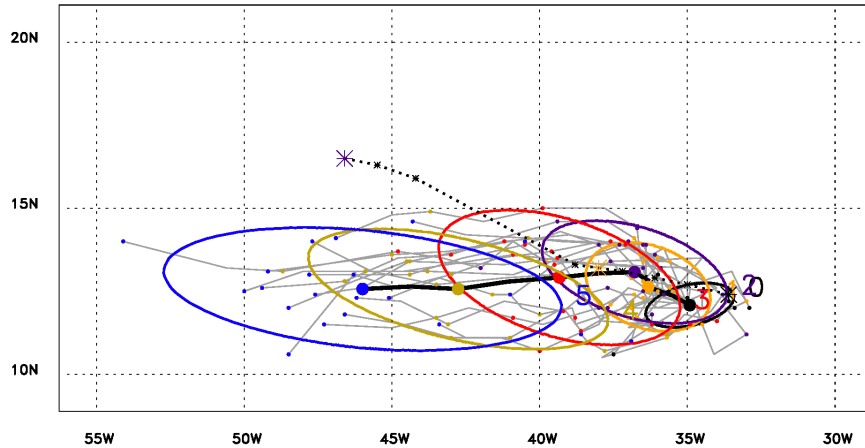


ECMWF ensembles and ellipses, IC=20  
for storm number 07 in the AL b

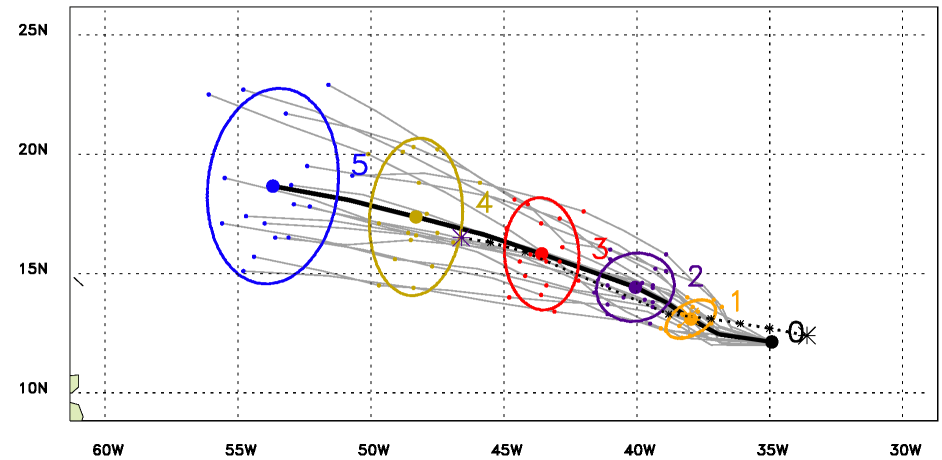


# Gaston, 2010/09/01/12Z

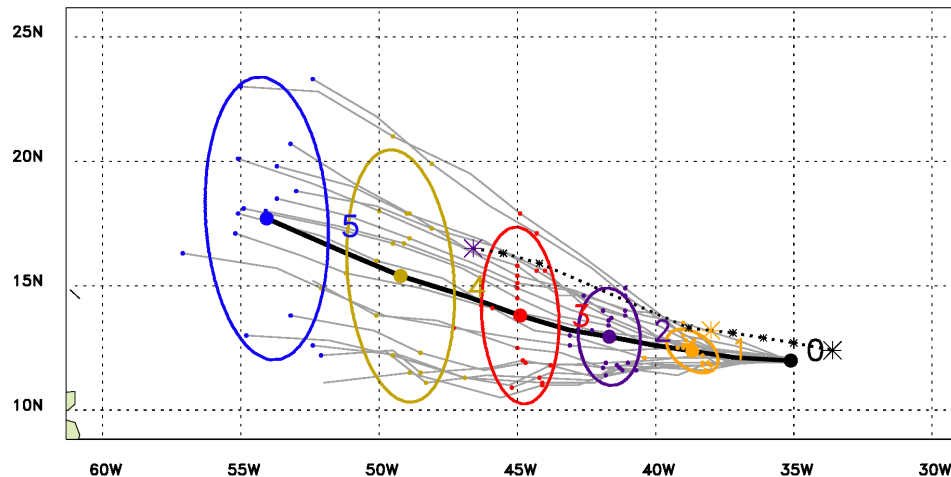
ECMWF ensembles and ellipses, IC=2010090112  
for storm number 09 in the AL basin



EnKF ensembles and ellipses, IC=2010090112  
for storm number 09 in the AL basin

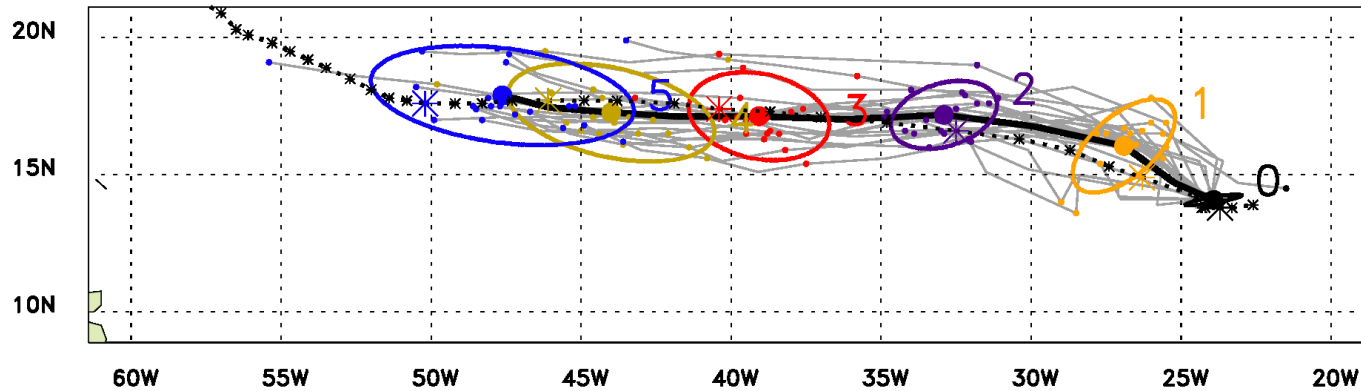


NCEP ensembles and ellipses, IC=2010090112  
for storm number 09 in the AL basin

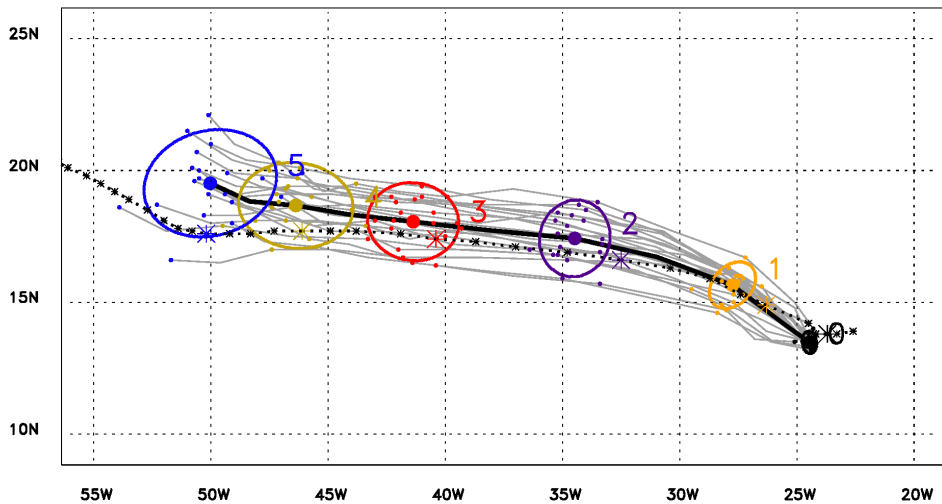


# Igor, 2010/09/09/00Z

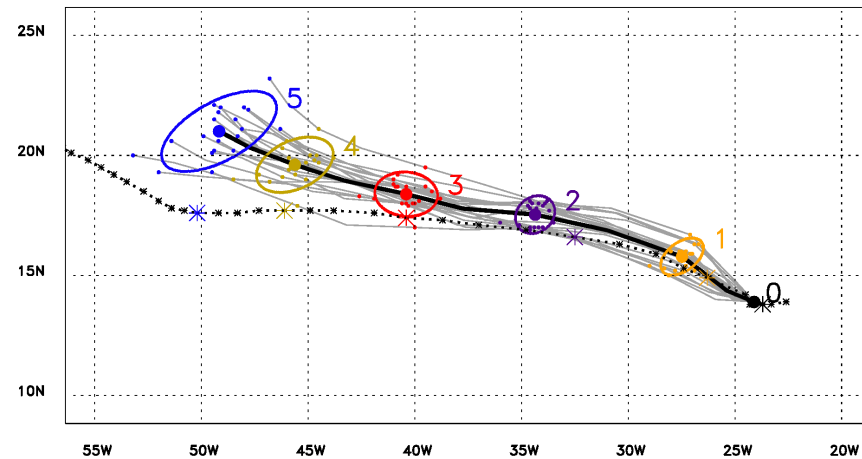
ECMWF ensembles and ellipses, IC=2010090900  
for storm number 11 in the AL basin



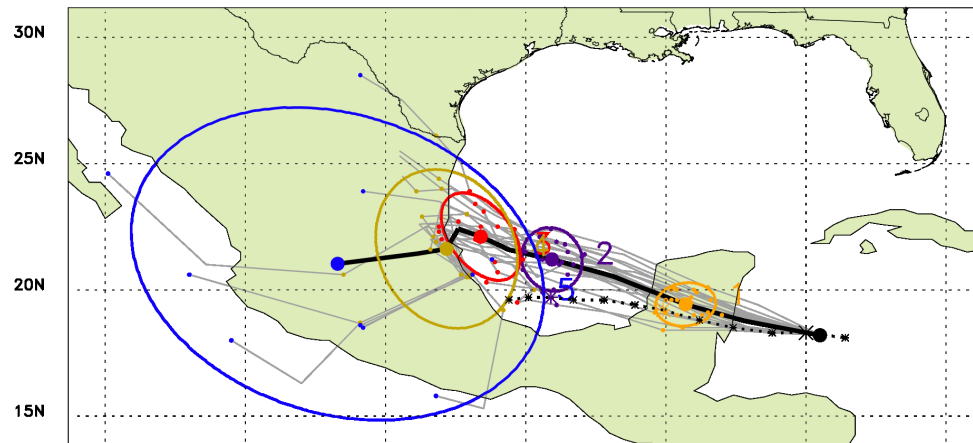
EnKF ensembles and ellipses, IC=2010090900  
for storm number 11 in the AL basin



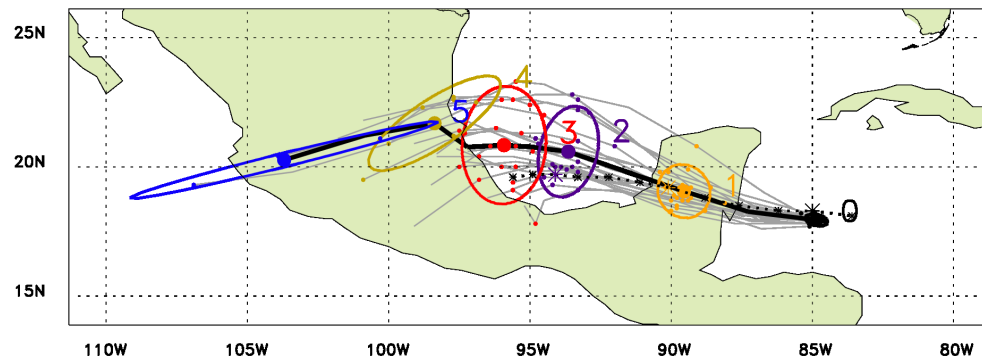
NCEP ensembles and ellipses, IC=2010090900  
for storm number 11 in the AL basin



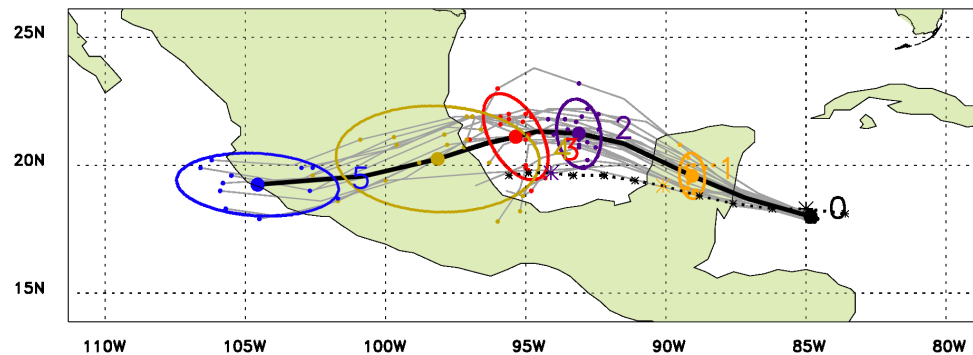
ECMWF ensembles and ellipses, IC=2010091500  
for storm number 13 in the AL basin



EnKF ensembles and ellipses, IC=2010091500  
for storm number 13 in the AL basin

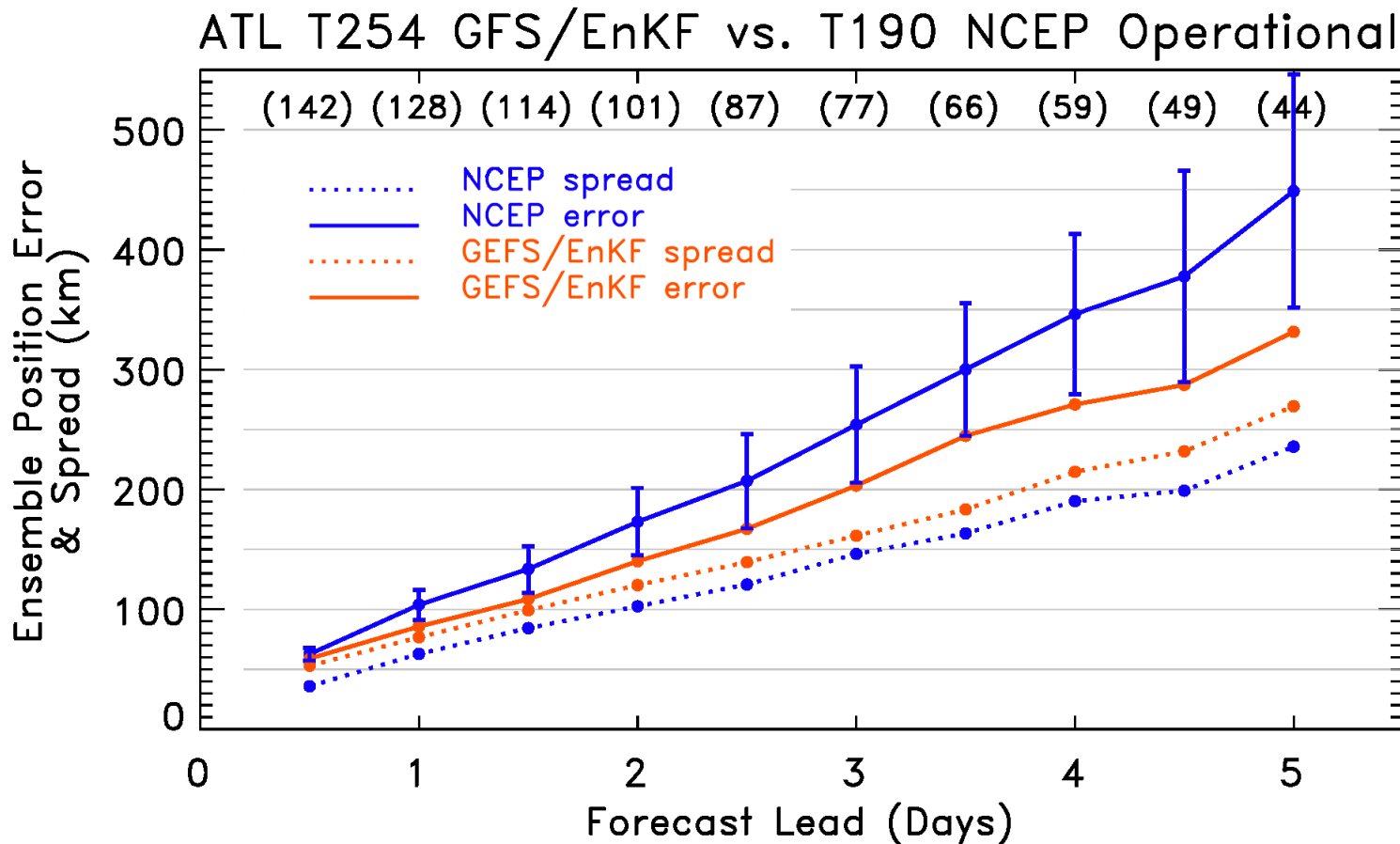


NCEP ensembles and ellipses, IC=2010091500  
for storm number 13 in the AL basin



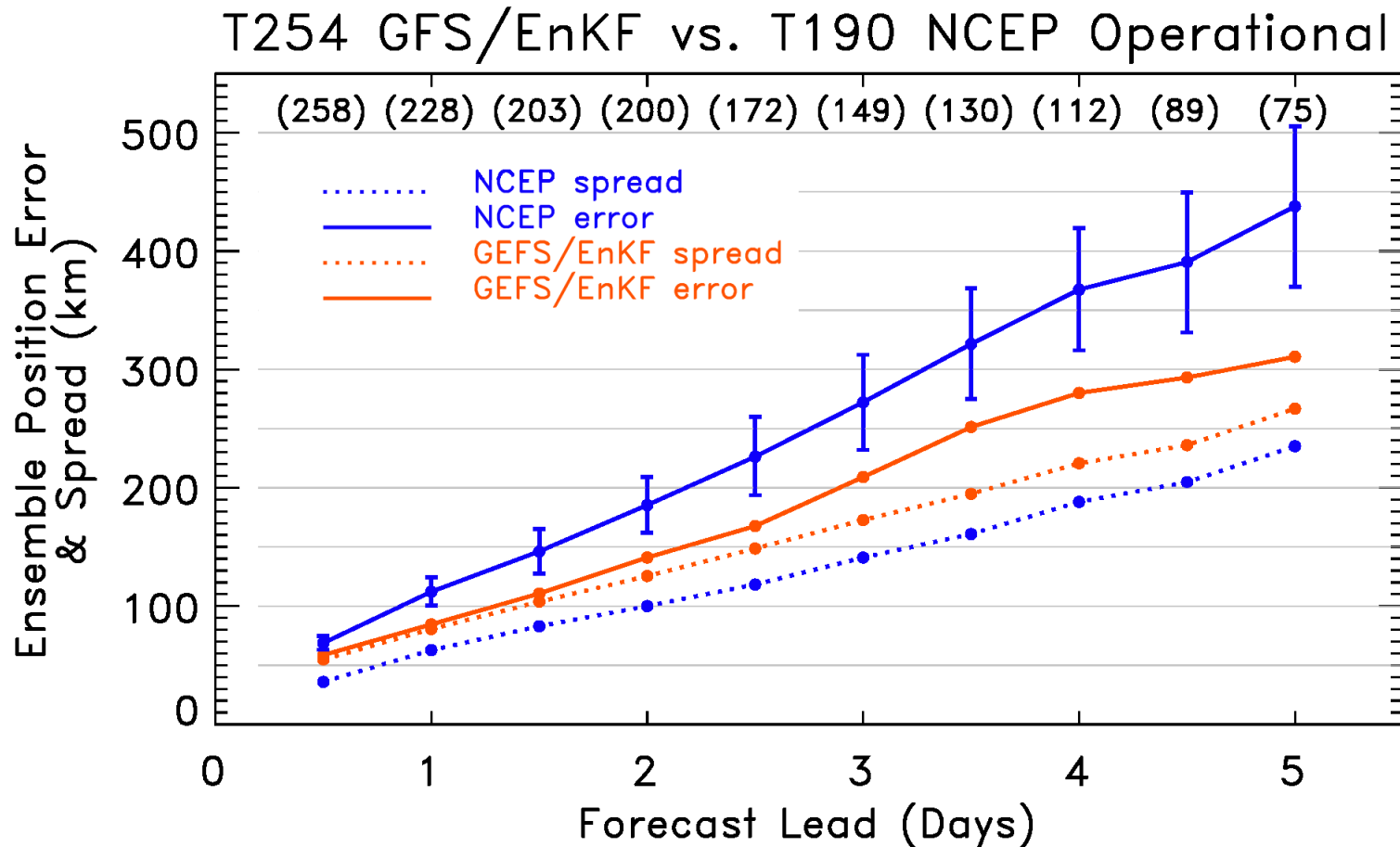
Karl,  
2010/09/15/00Z

# ATL Ensemble mean track verification (vs NCEP)

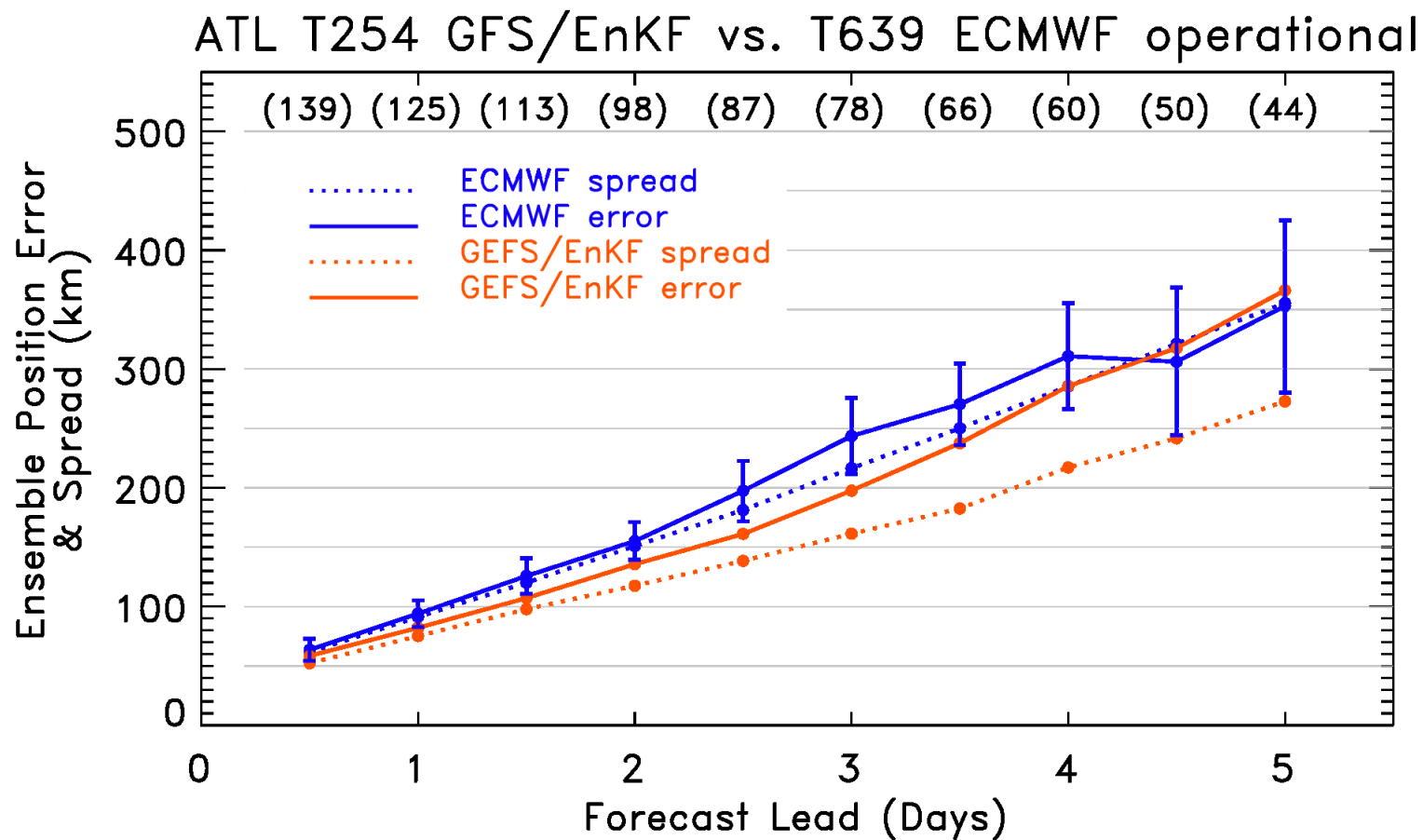




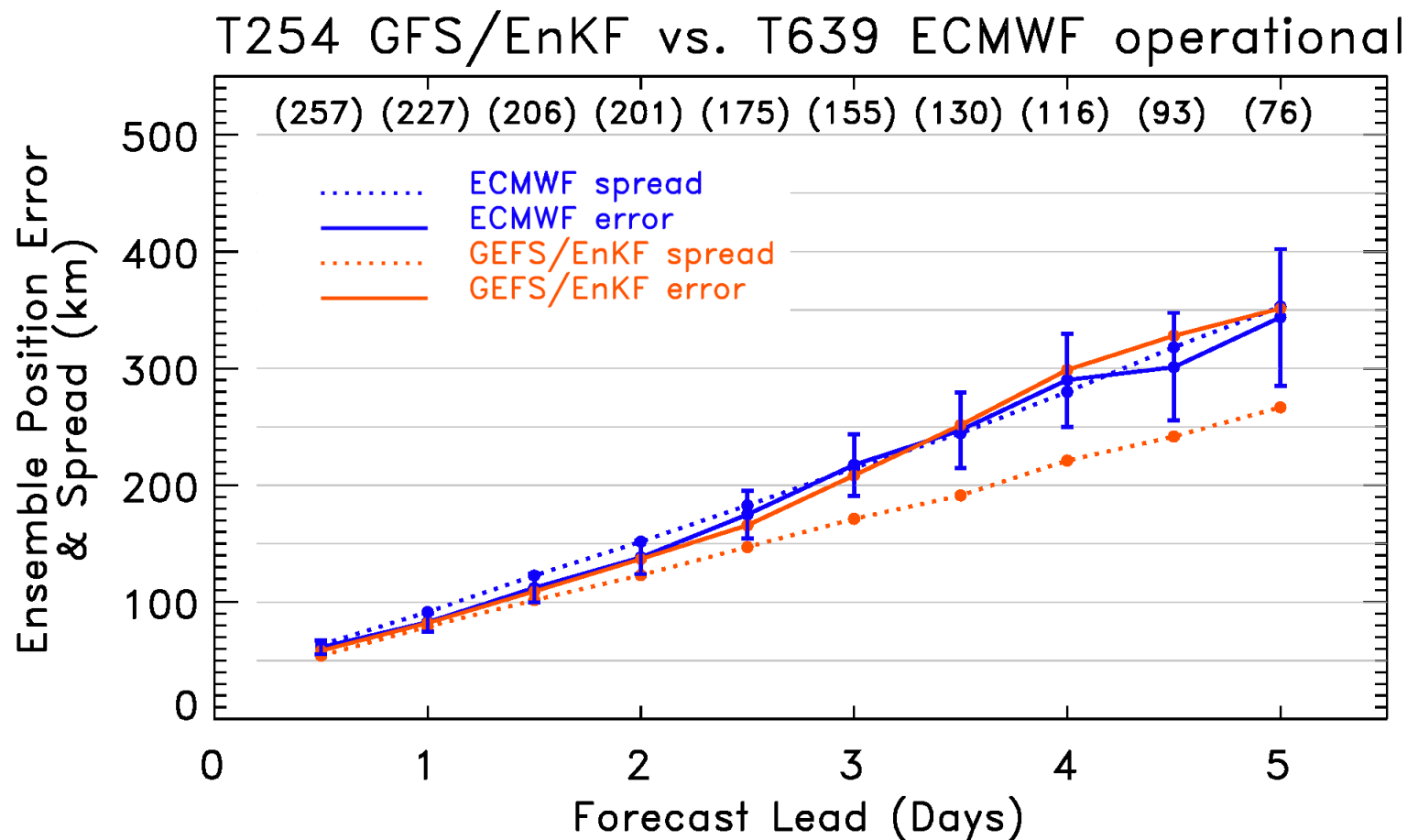
# NHEM Ensemble mean track verification (vs NCEP)



# ATL Ensemble mean track verification (vs ECMWF)



# NHEM Ensemble mean track verification (vs ECMWF)



# Summary/Plans

- Now proven technology – focus on transfer to operations (as part of GSI global hybrid).
- EnKF code being adapted to work with regional WRF (ARW/HWRF) by ESRL and OU.
  - Single system for regional and global ensemble.
- Multi-model global ensemble? – FIM, NASA GEOS 5 (easier), GFDL HIRAM (harder).
- Model error! (ties in with balance issues, use of inner core observations)