

Review of FNMOC ensemble

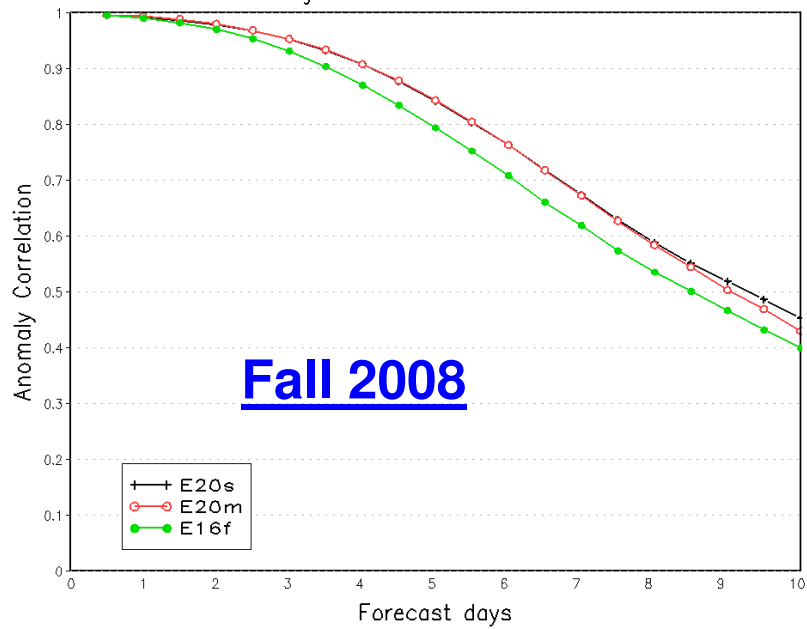
Yuejian Zhu

May 22nd 2009

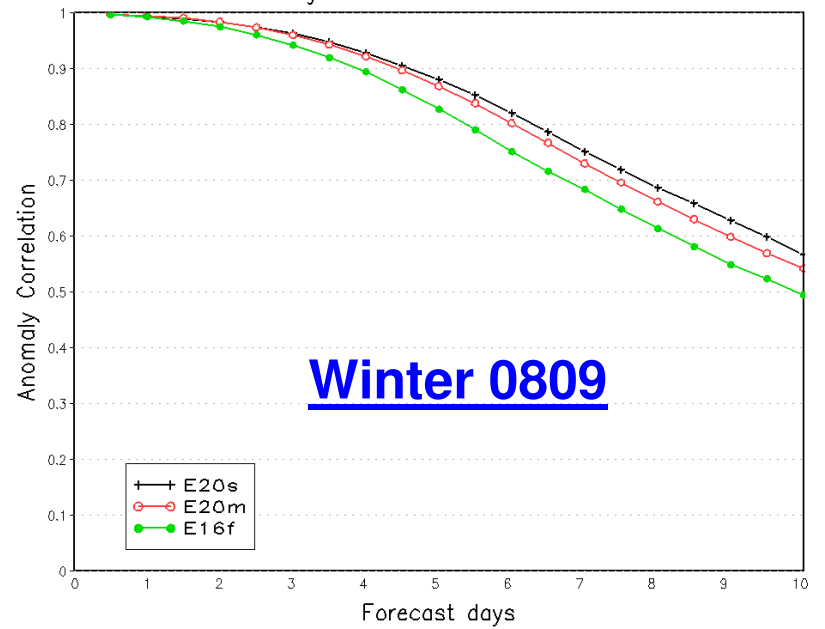
FNMOOC global ensembles

- Part of evaluation in EMC/NCEP
 - Web: http://wwwt.emc.ncep.noaa.gov/gmb/yzhu/html/opr/fnmoc_exp.html
- Two full seasons
 - Fall 2008 (Sep. 1st – Nov. 30 2008)
 - Winter 08/09 (Dec. 1st 2008 – Feb. 28 2009)
- Individual performance (raw forecasts)
 - Against its own analysis
 - Examples
- Joint ensemble (raw forecasts)
 - Against NCEP analysis
 - Examples
- Needs more evaluations?

Northern Hemisphere 500hPa Height
Ensemble Mean Anomaly Correlation
Average For 20080901 - 20081130

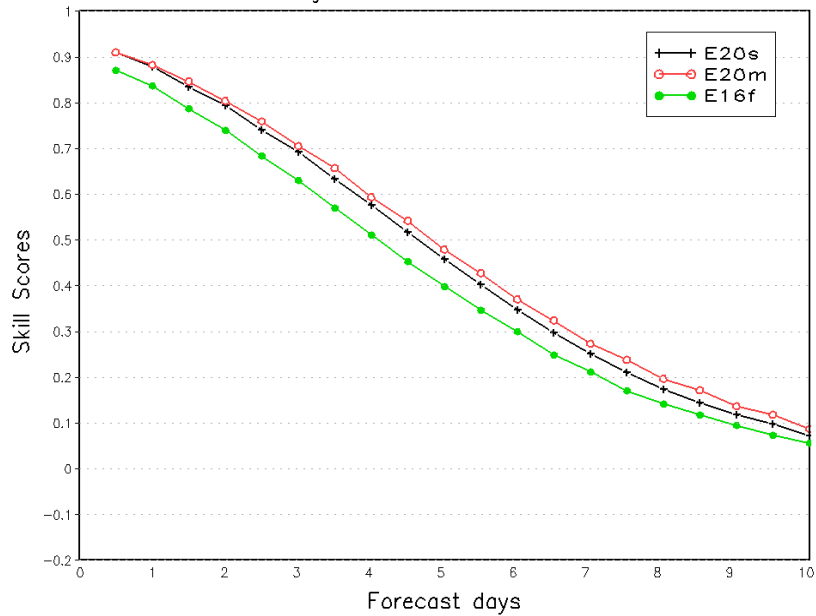


Northern Hemisphere 500hPa Height
Ensemble Mean Anomaly Correlation
Average For 20081201 - 20090228

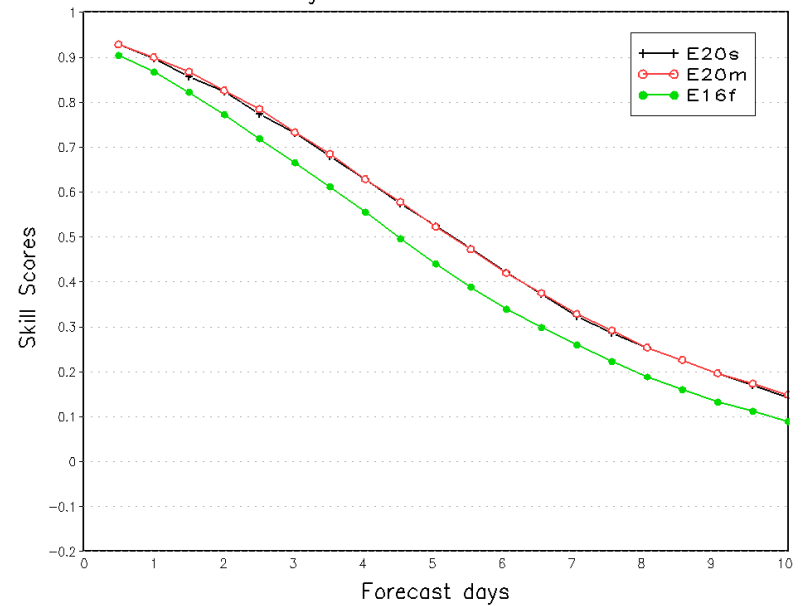


NH 500hPa Height

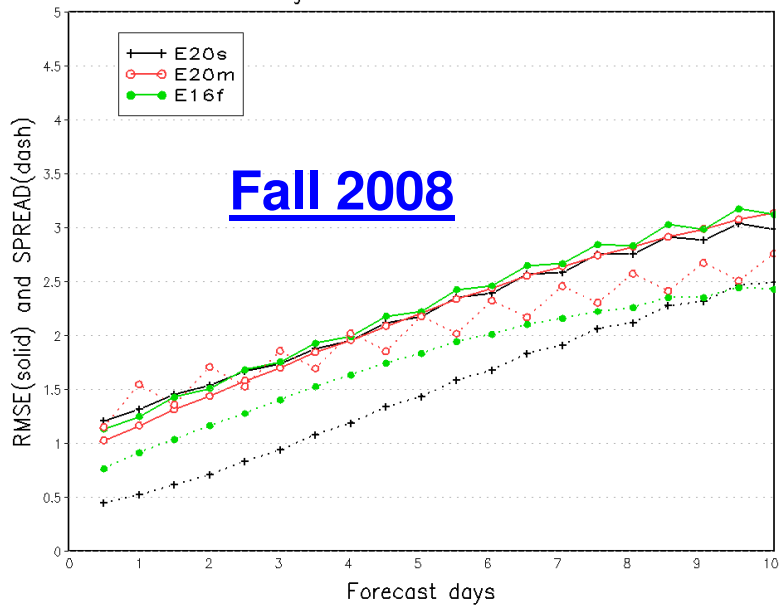
Northern Hemisphere 500hPa Height
Continous Ranked Probability Skill Scores
Average For 20080901 - 20081130



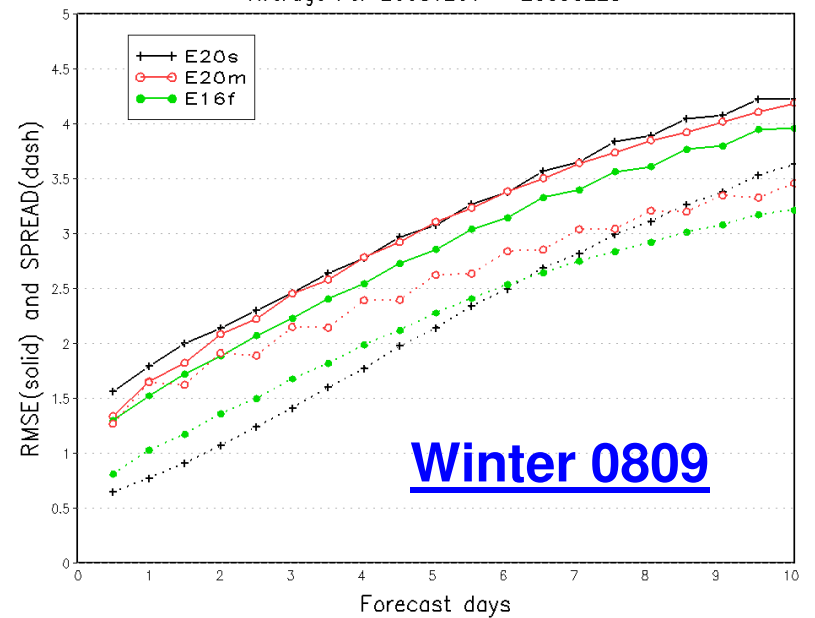
Northern Hemisphere 500hPa Height
Continous Ranked Probability Skill Scores
Average For 20081201 - 20090228



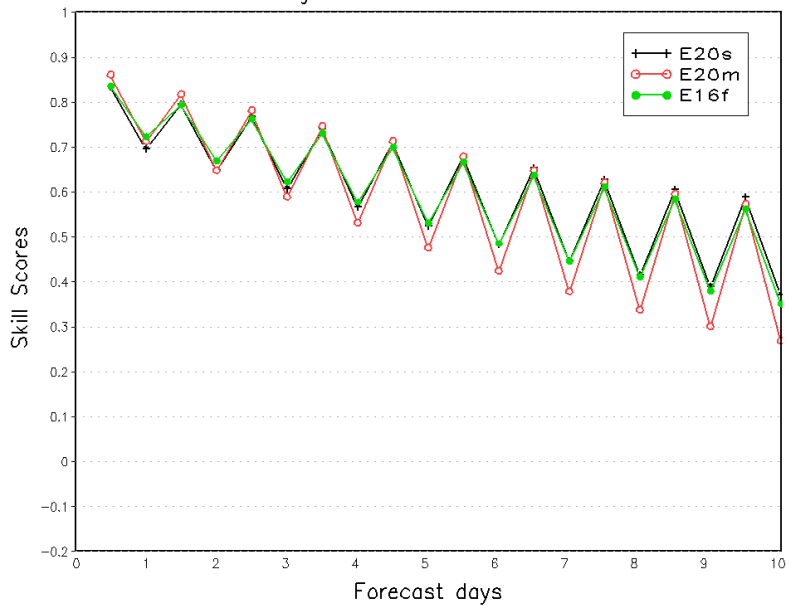
Northern Hemisphere 2 Meter Temp.
Ensemble Mean RMSE and Ensemble SPREAD
Average For 20080901 - 20081130



Northern Hemisphere 2 Meter Temp.
Ensemble Mean RMSE and Ensemble SPREAD
Average For 20081201 - 20090228

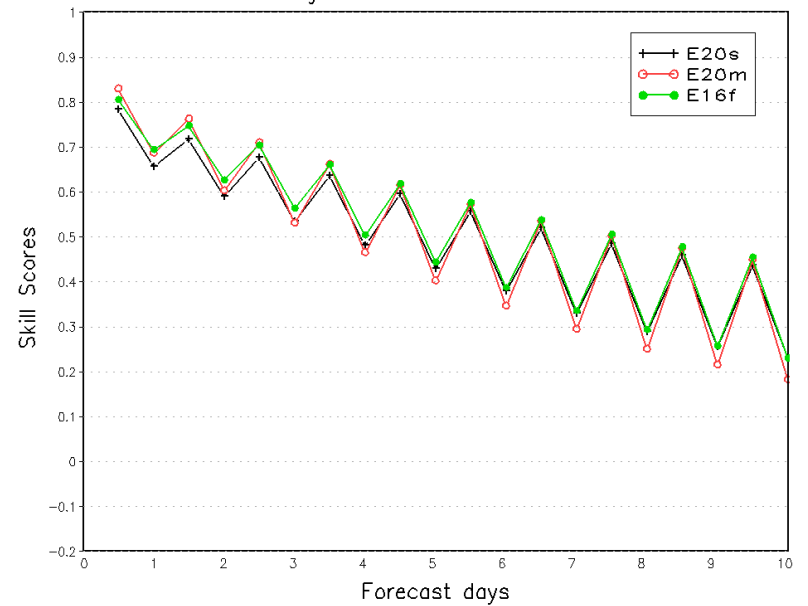


Northern Hemisphere 2 Meter Temp.
Continuous Ranked Probability Skill Scores
Average For 20080901 - 20081130

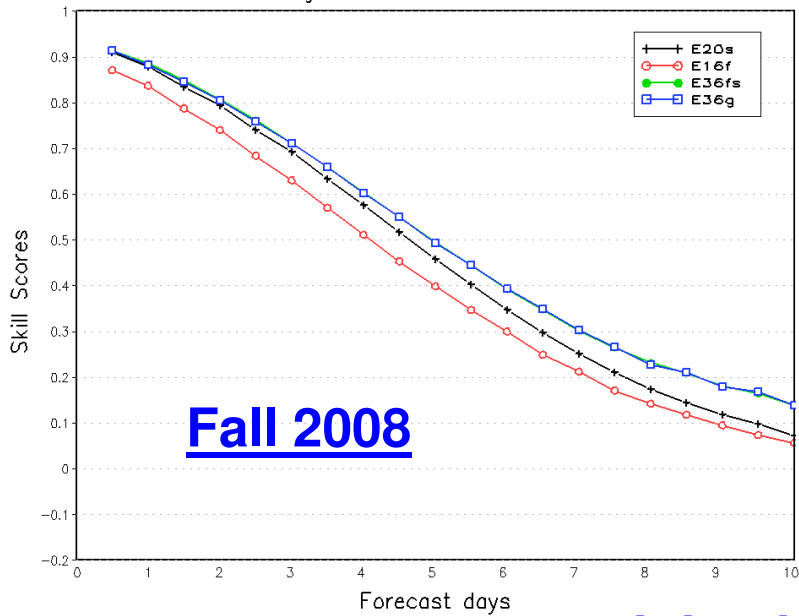


2-meter Temperature

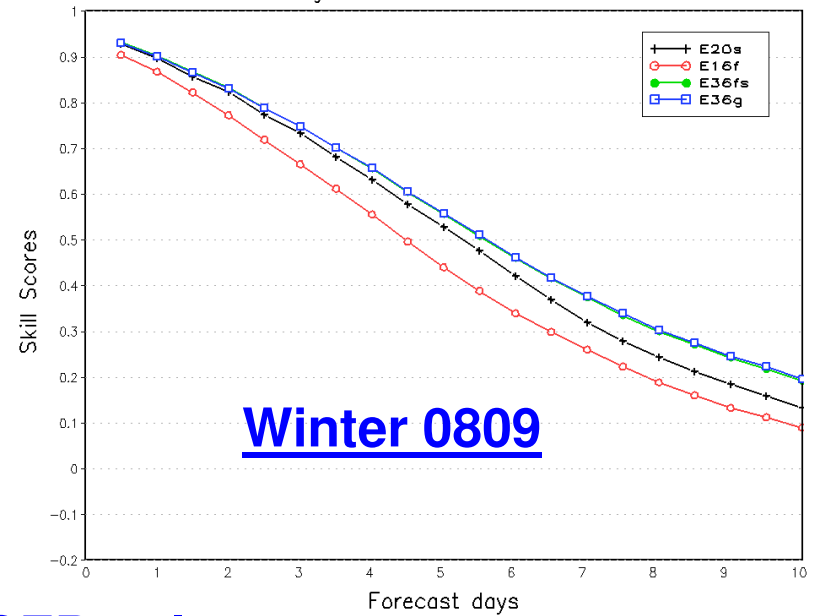
Northern Hemisphere 2 Meter Temp.
Continuous Ranked Probability Skill Scores
Average For 20081201 - 20090228



Northern Hemisphere 500hPa Height
 Continous Ranked Probability Skill Scores
 Average For 20080901 - 20081130

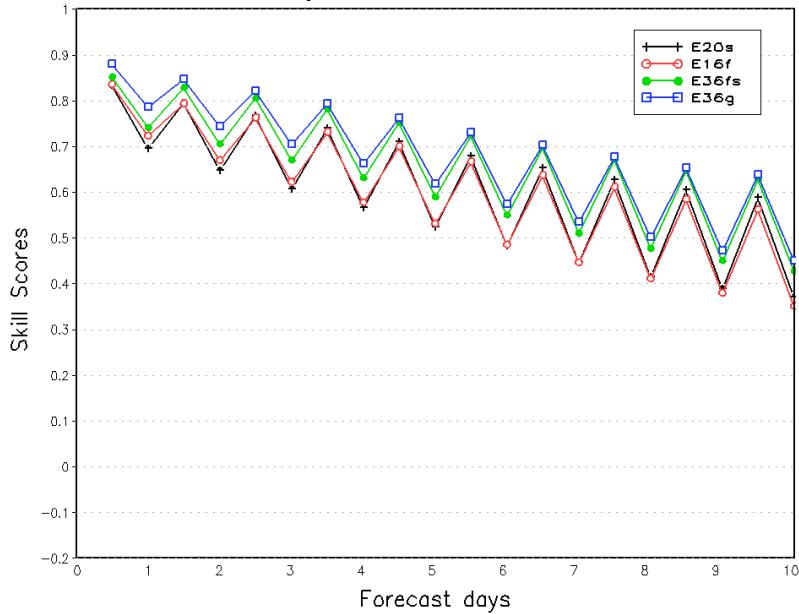


Northern Hemisphere 500hPa Height
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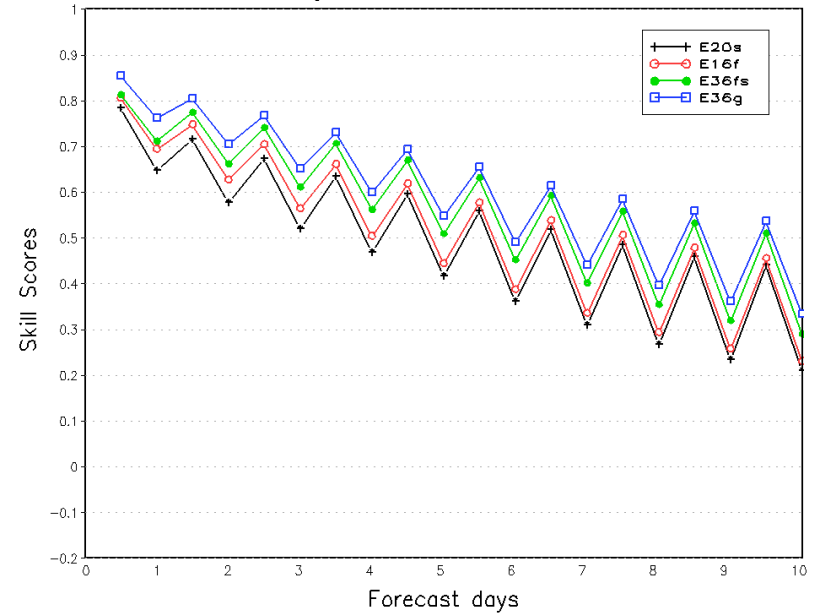


Joined with NCEP only

Northern Hemisphere 2 Meter Temp.
 Continous Ranked Probability Skill Scores
 Average For 20080901 - 20081130



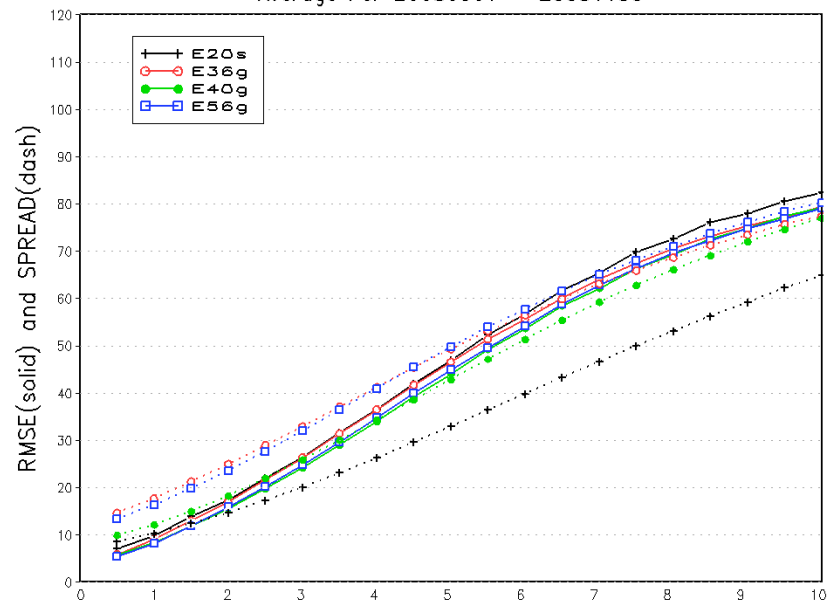
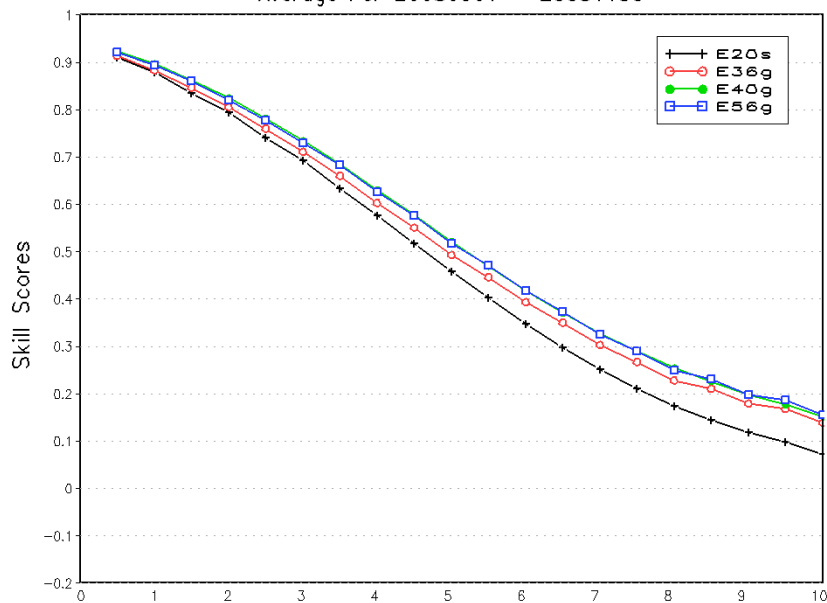
Northern Hemisphere 2 Meter Temp.
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 Average For 20081201 - 20090228



Northern Hemisphere 500hPa Height
 Continuous Ranked Probability Skill Scores
 Average For 20080901 – 20081130

Future NAEFS

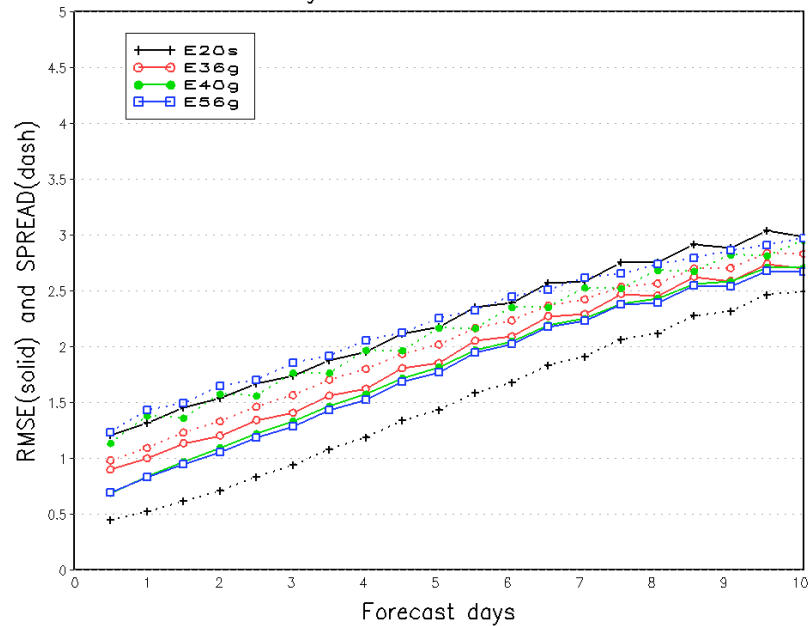
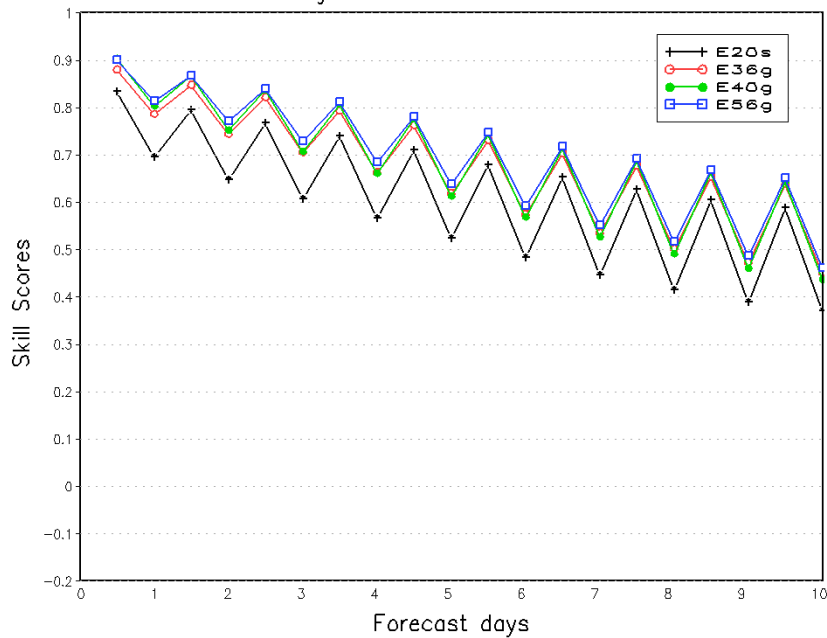
Northern Hemisphere 500hPa Height
 Ensemble Mean RMSE and Ensemble SPREAD
 Average For 20080901 – 20081130



Northern Hemisphere 2 Meter Temp.
 Continuous Ranked Probability Skill Scores
 Average For 20080901 – 20081130

Fall 2008

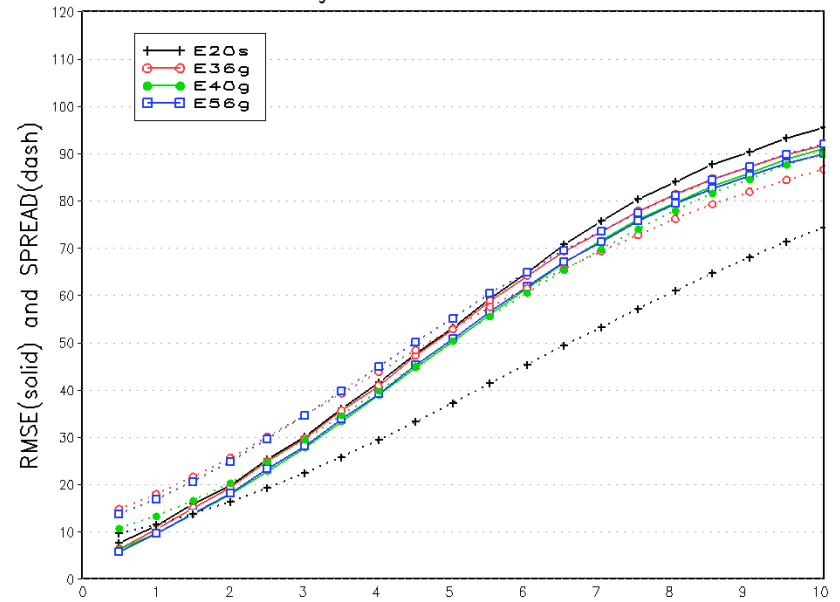
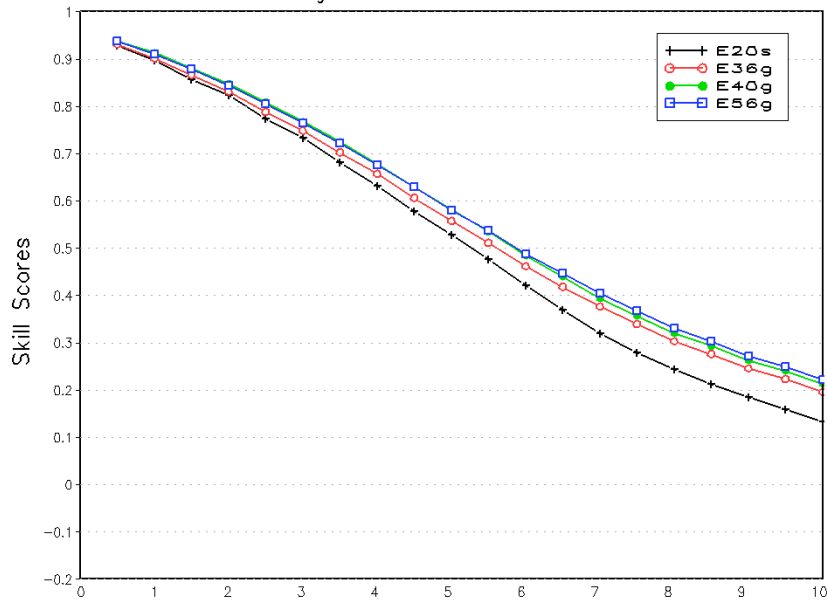
Northern Hemisphere 2 Meter Temp.
 Ensemble Mean RMSE and Ensemble SPREAD
 Average For 20080901 – 20081130



Northern Hemisphere 500hPa Height
 Continuous Ranked Probability Skill Scores
 Average For 20081201 - 20090228

Future NAEFS

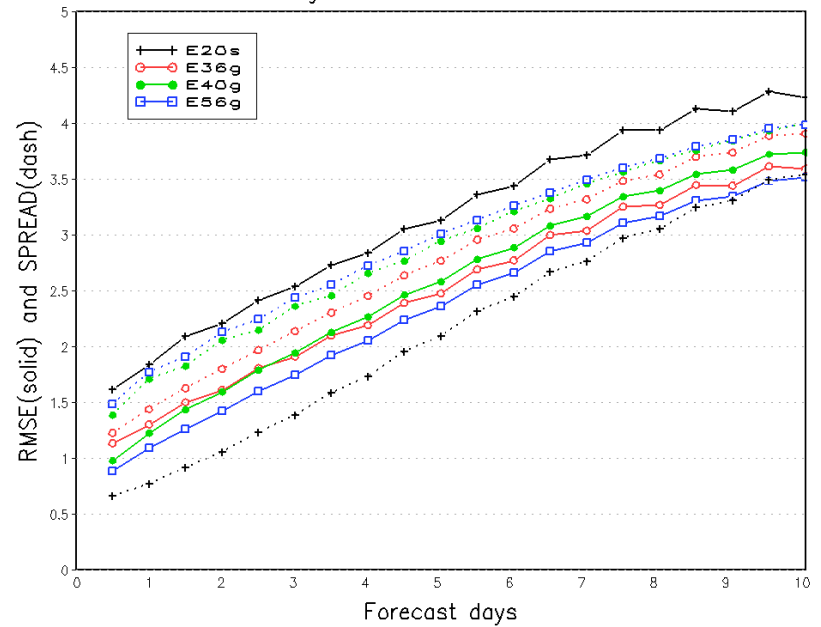
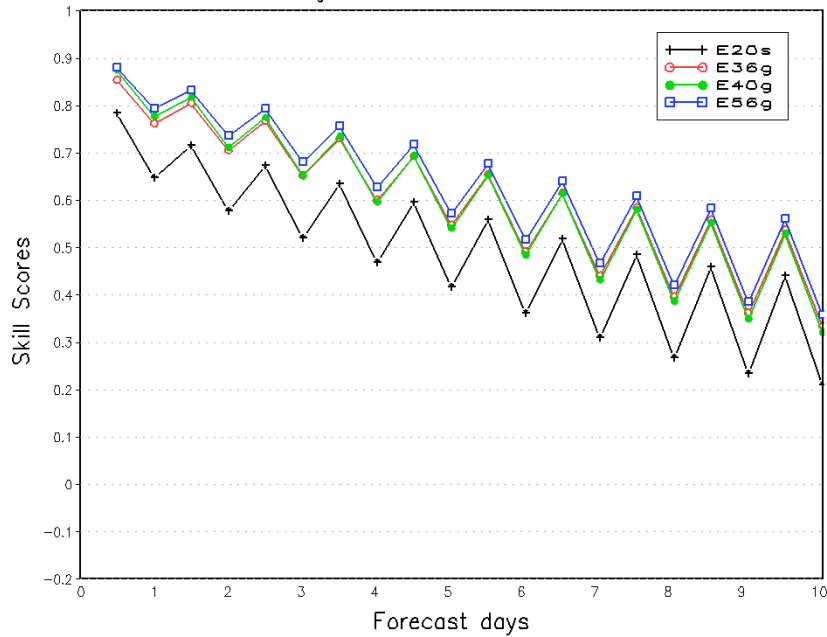
Northern Hemisphere 500hPa Height
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 Average For 20081201 - 20090228



Northern Hemisphere 2 Meter Temp.
 Continuous Ranked Probability Skill Scores
 Average For 20081201 - 20090228

Winter 0809

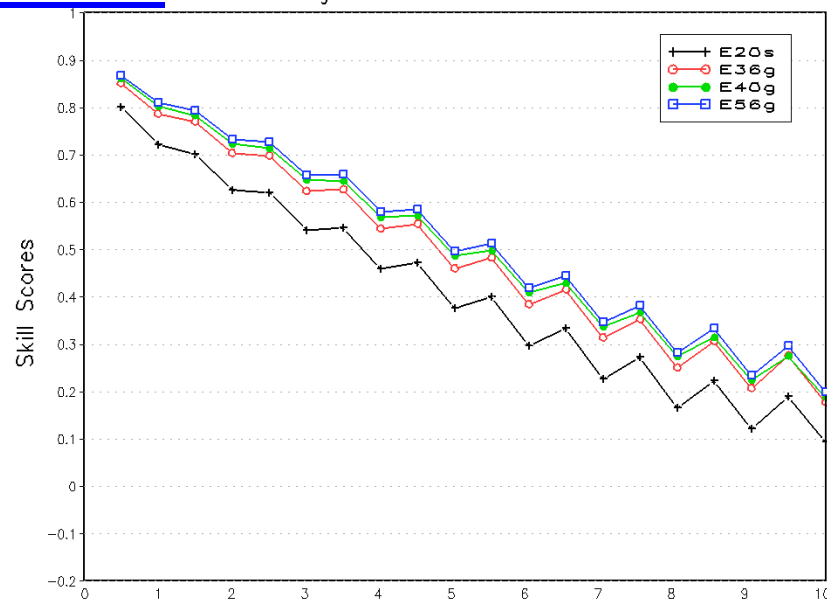
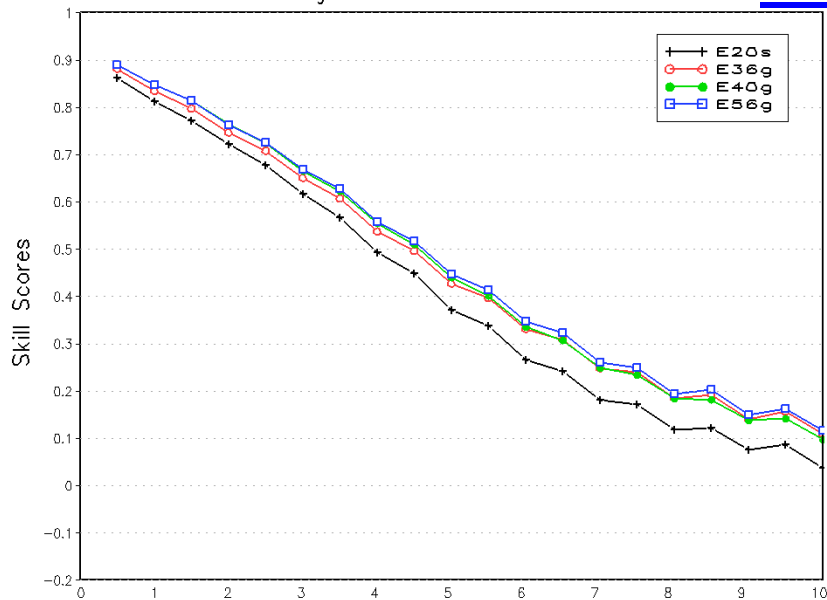
Northern Hemisphere 2 Meter Temp.
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Northern Hemisphere 1000hPa Height
 Continous Ranked Probability Skill Scores
 Average For 20080901 - 20081130

Future NAEFS

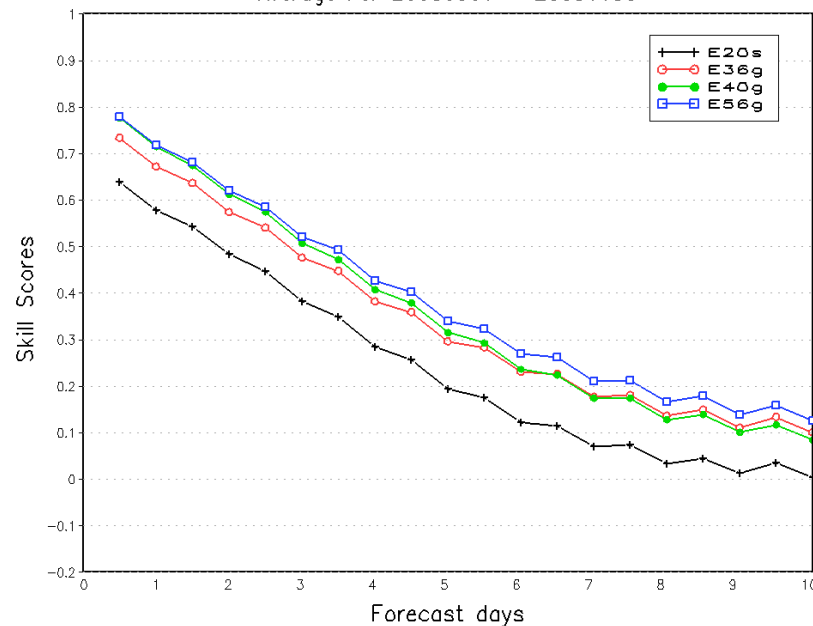
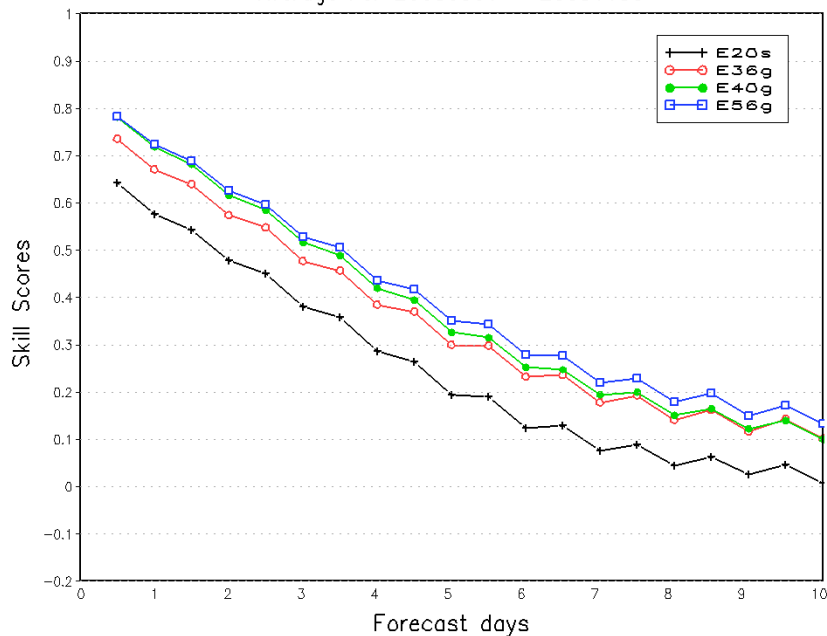
Northern Hemisphere 850hPa Temp.
 Continous Ranked Probability Skill Scores
 Average For 20080901 - 20081130



Northern Hemisphere 10 Meter U(wind)
 Continous Ranked Probability Skill Scores
 Average For 20080901 - 20081130

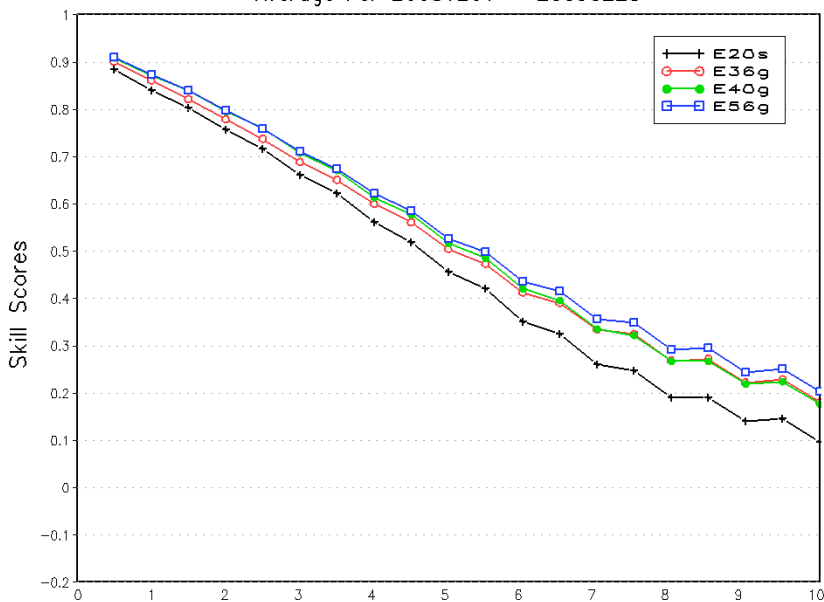
Fall 2008, more variables

Northern Hemisphere 10 Meter V(wind)
 Continous Ranked Probability Skill Scores
 Average For 20080901 - 20081130

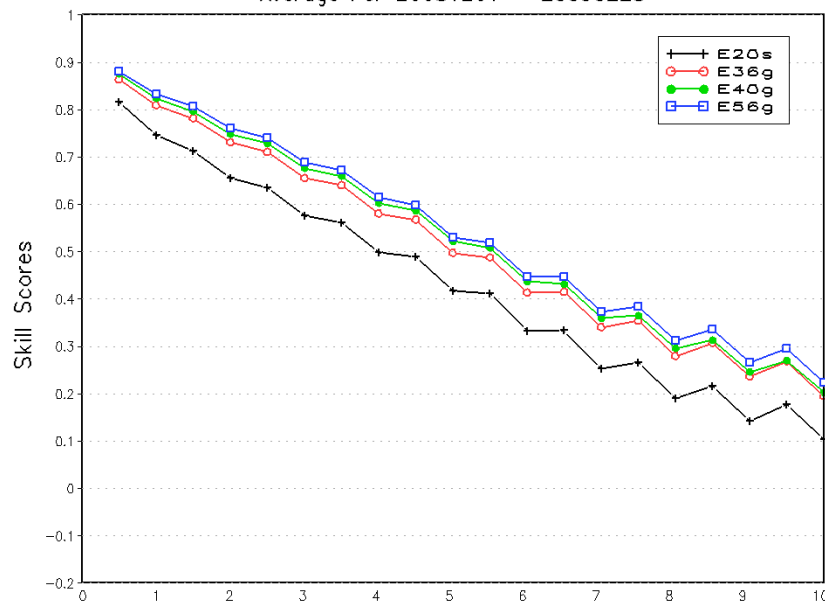


Future NAEFS

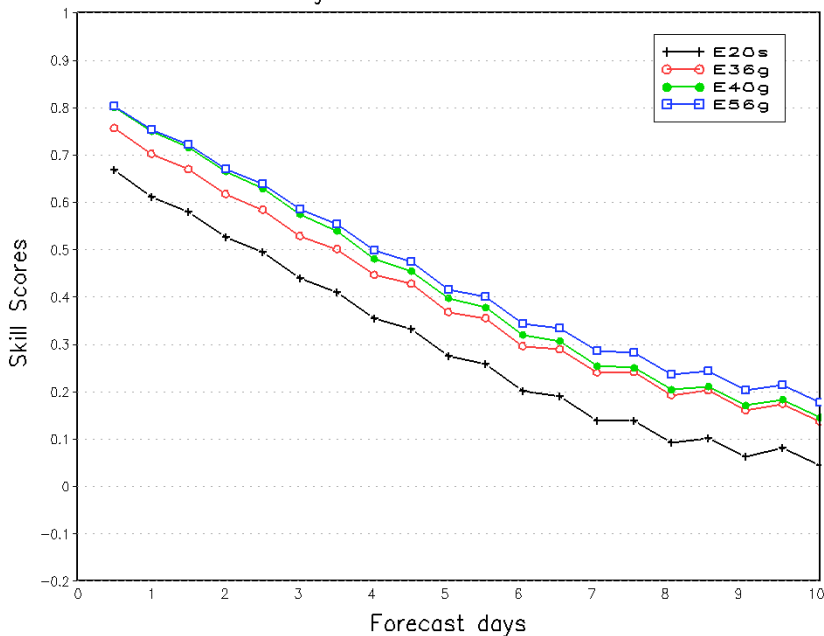
Northern Hemisphere 1000hPa Height
Continuous Ranked Probability Skill Scores
Average For 20081201 - 20090228



Northern Hemisphere 850hPa Temp.
Continuous Ranked Probability Skill Scores
Average For 20081201 - 20090228

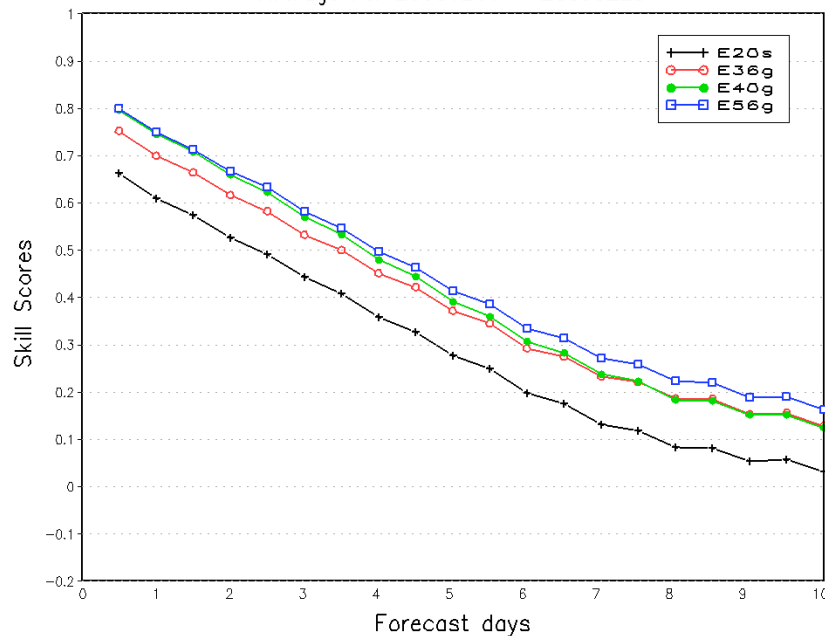


Northern Hemisphere 10 Meter U(wind)
Continuous Ranked Probability Skill Scores
Average For 20081201 - 20090228



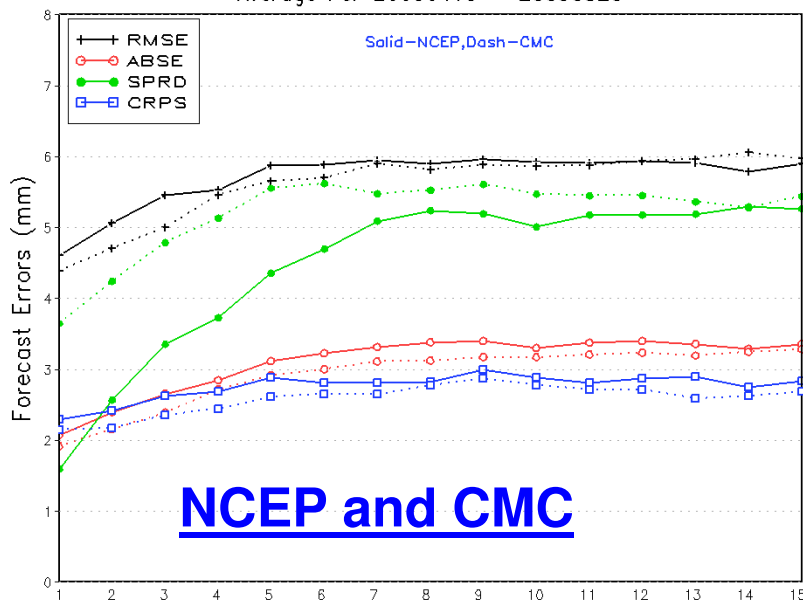
Winter, more variables

Northern Hemisphere 10 Meter V(wind)
Continuous Ranked Probability Skill Scores
Average For 20081201 - 20090228

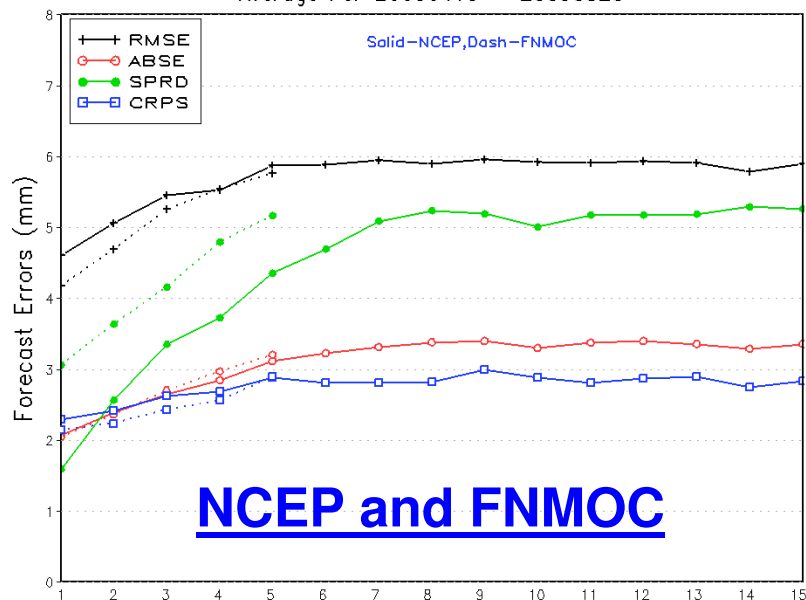


Individual performance

Ensemble Precipitation Verification for CONUS
RMSE, ABSE, SPREAD and CRPS
Average For 20090419 - 20090520

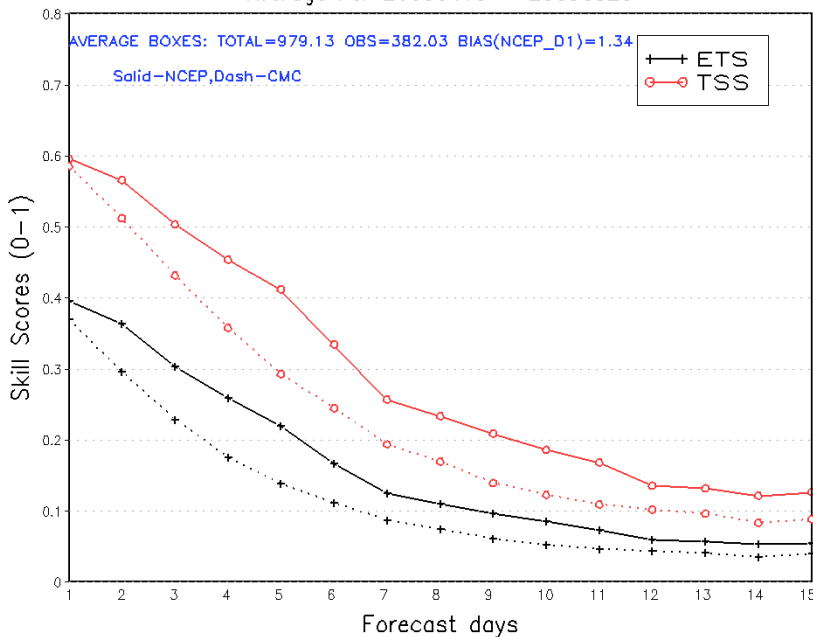


Ensemble Precipitation Verification for CONUS
RMSE, ABSE, SPREAD and CRPS
Average For 20090419 - 20090520



Precipitation

Ensemble Precipitation Verification for CONUS
ETS and TSS for threshold $\geq 0.20\text{mm}/24\text{hours}$
Average For 20090419 - 20090520



Ensemble Precipitation Verification for CONUS
ETS and TSS for threshold $\geq 0.20\text{mm}/24\text{hours}$
Average For 20090419 - 20090520

