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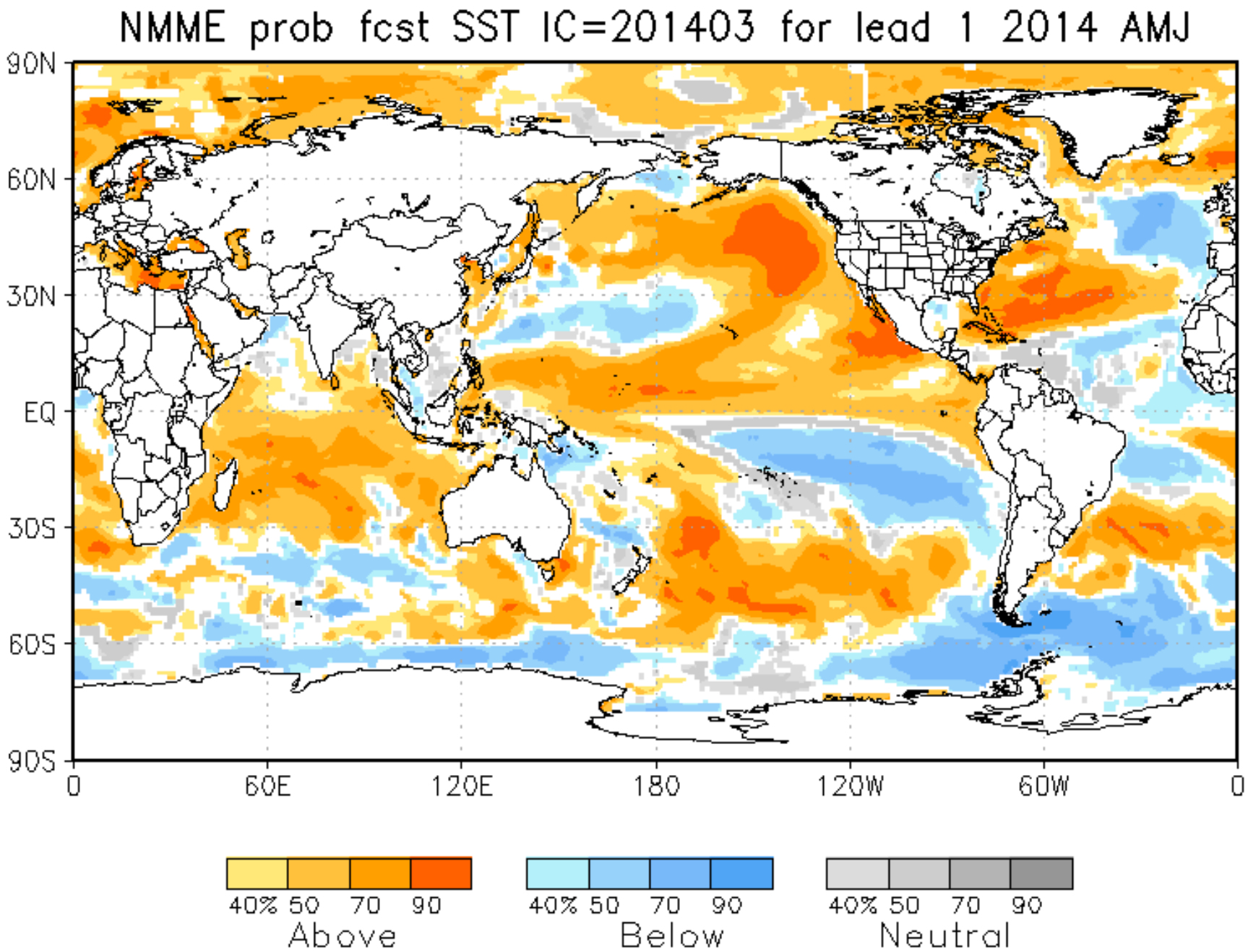
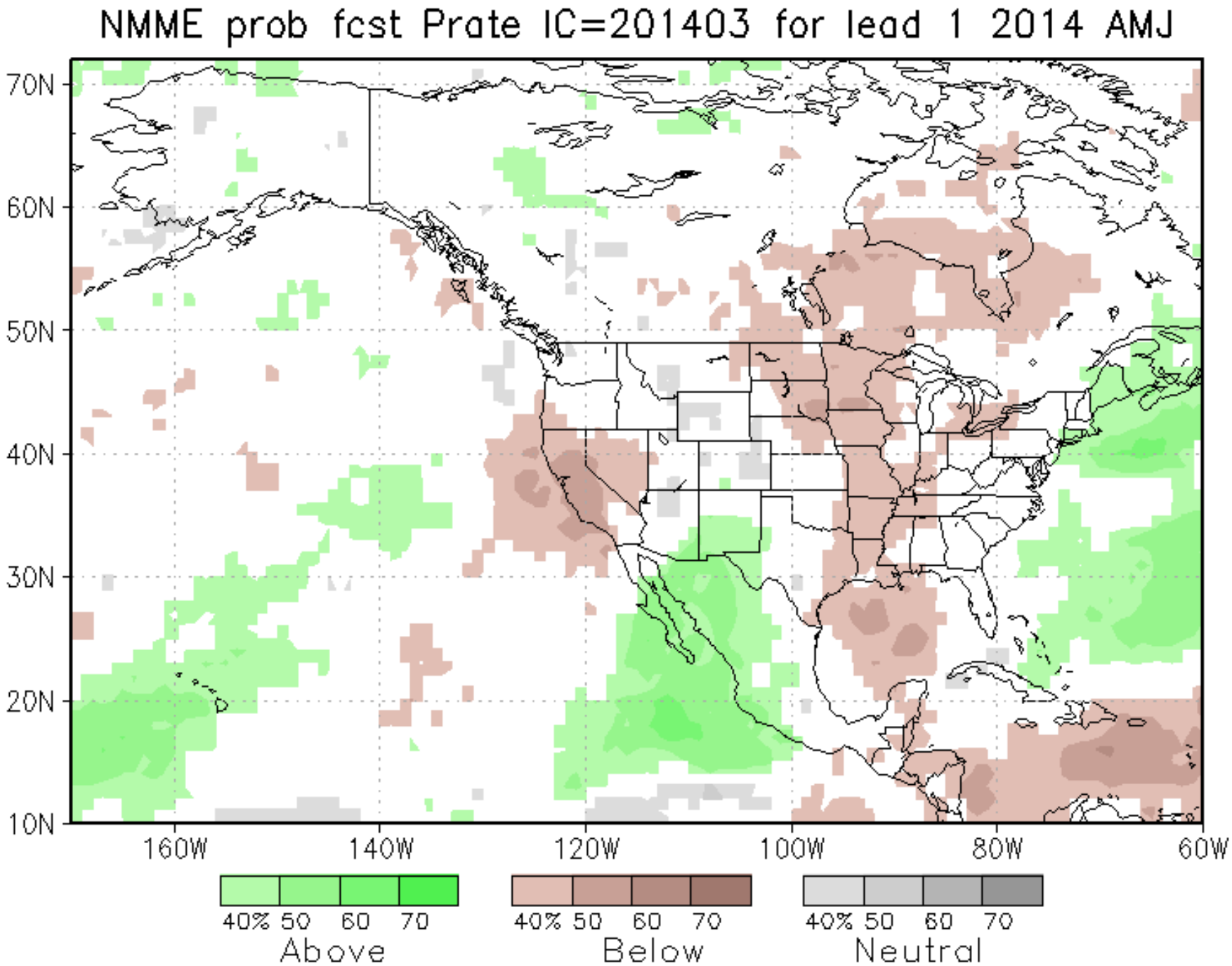
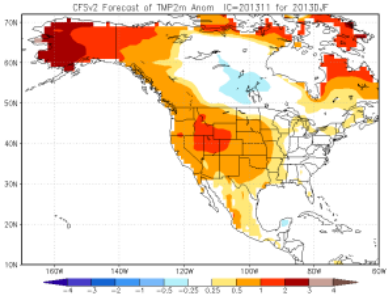
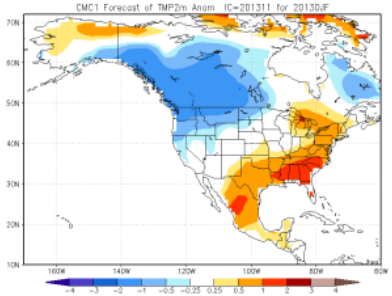

NMME prob fcst SST IC=201403 for lead 1 2014 AMJ
90N
60N
30N
EQ
30S
60S
90S
0
60E
120E
180
120W
60W
0
40% 50 70 90
Above
40% 50 70 90
Below
40% 50 70 90
Neutral


NMME prob fcst Prate IC=201403 for lead 1 2014 AMJ
70N
60N
50N
40N
30N
20N
10N
160W
140W
120W
100W
80W
60W
40% 50 60 70
Above
40% 50 60 70
Below
40% 50 60 70
Neutral

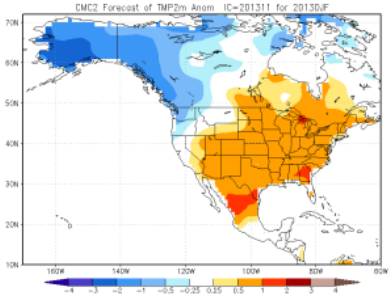
CFSv2



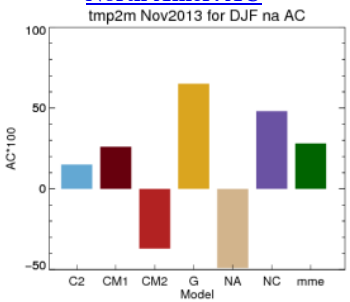
CMC1



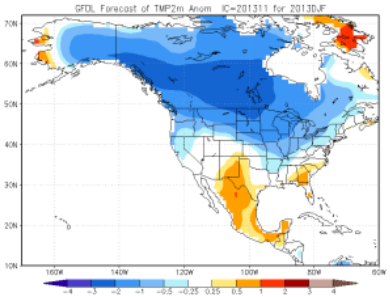
CMC2



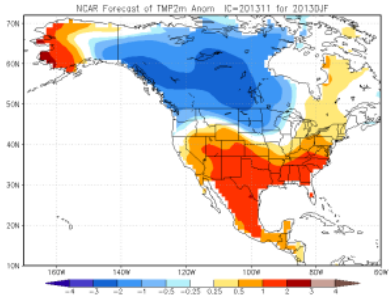
North Amer. AC



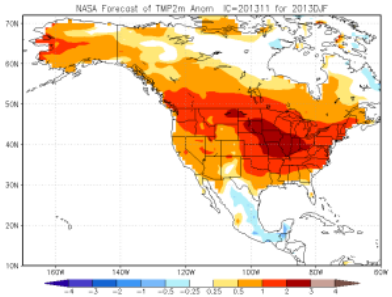
GFDL



NCAR



NASA



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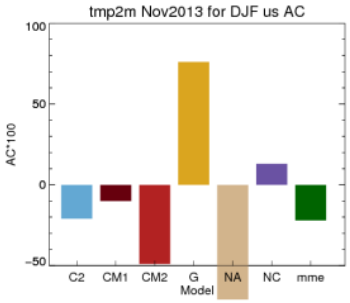
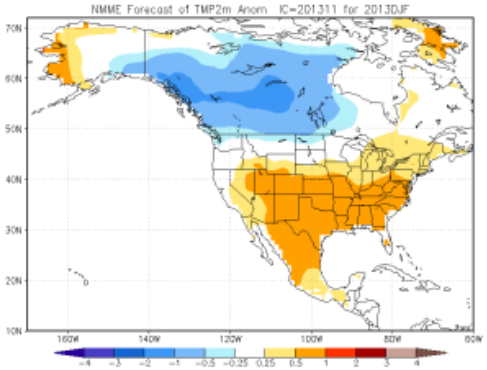
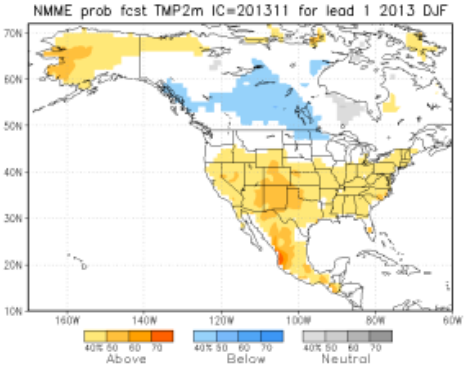


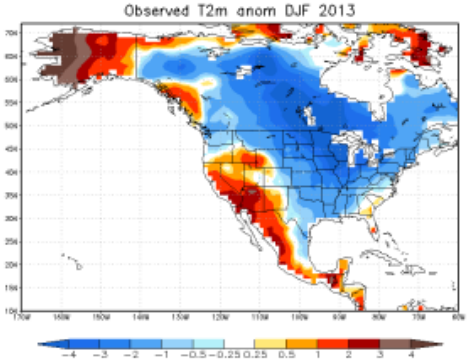
NMME



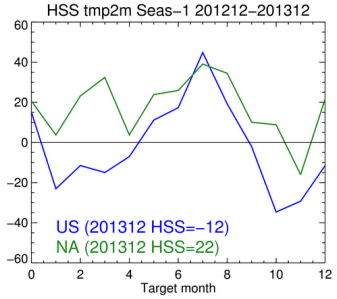
Prob fcst



Observed



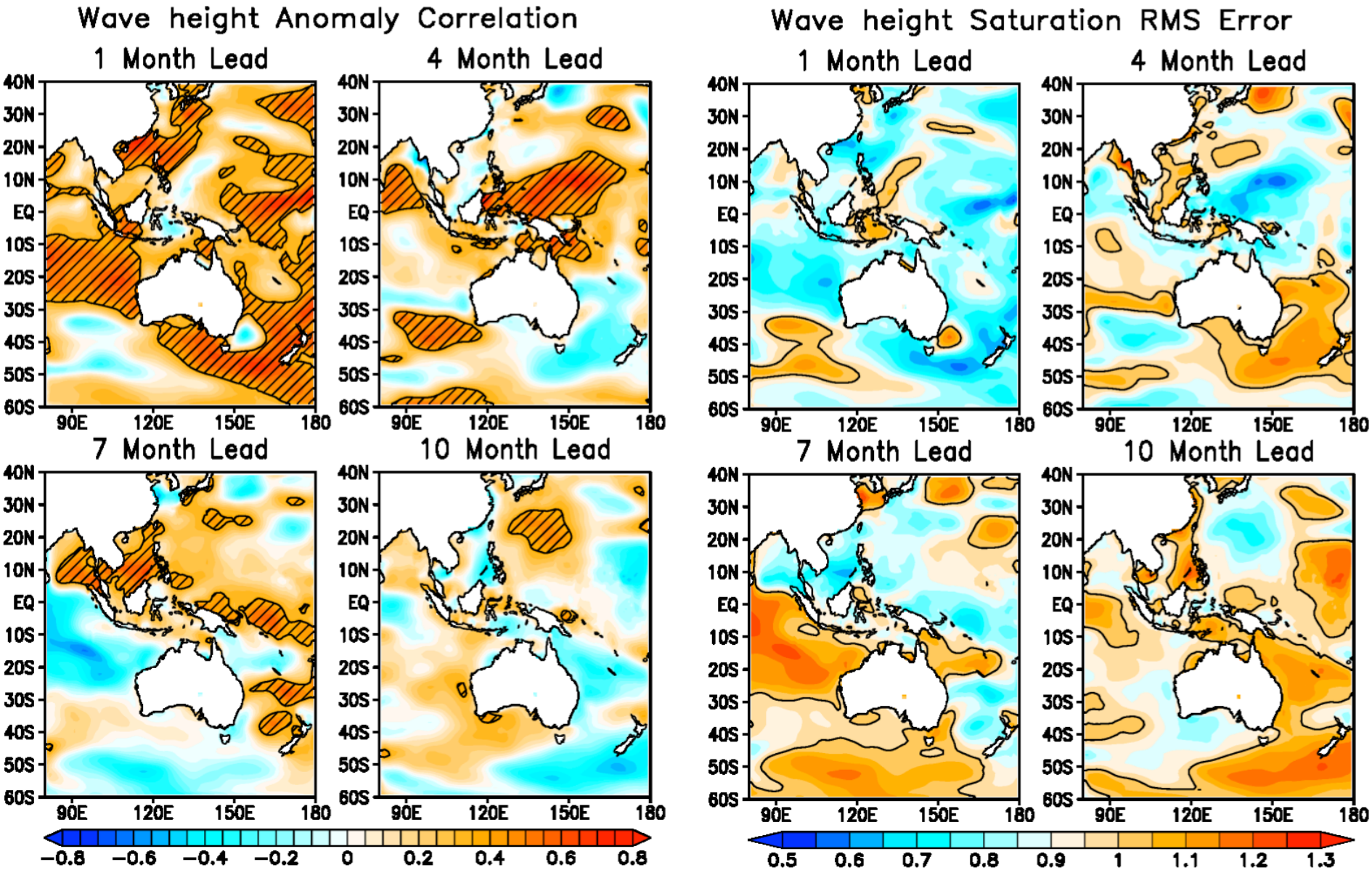
Heidke SS



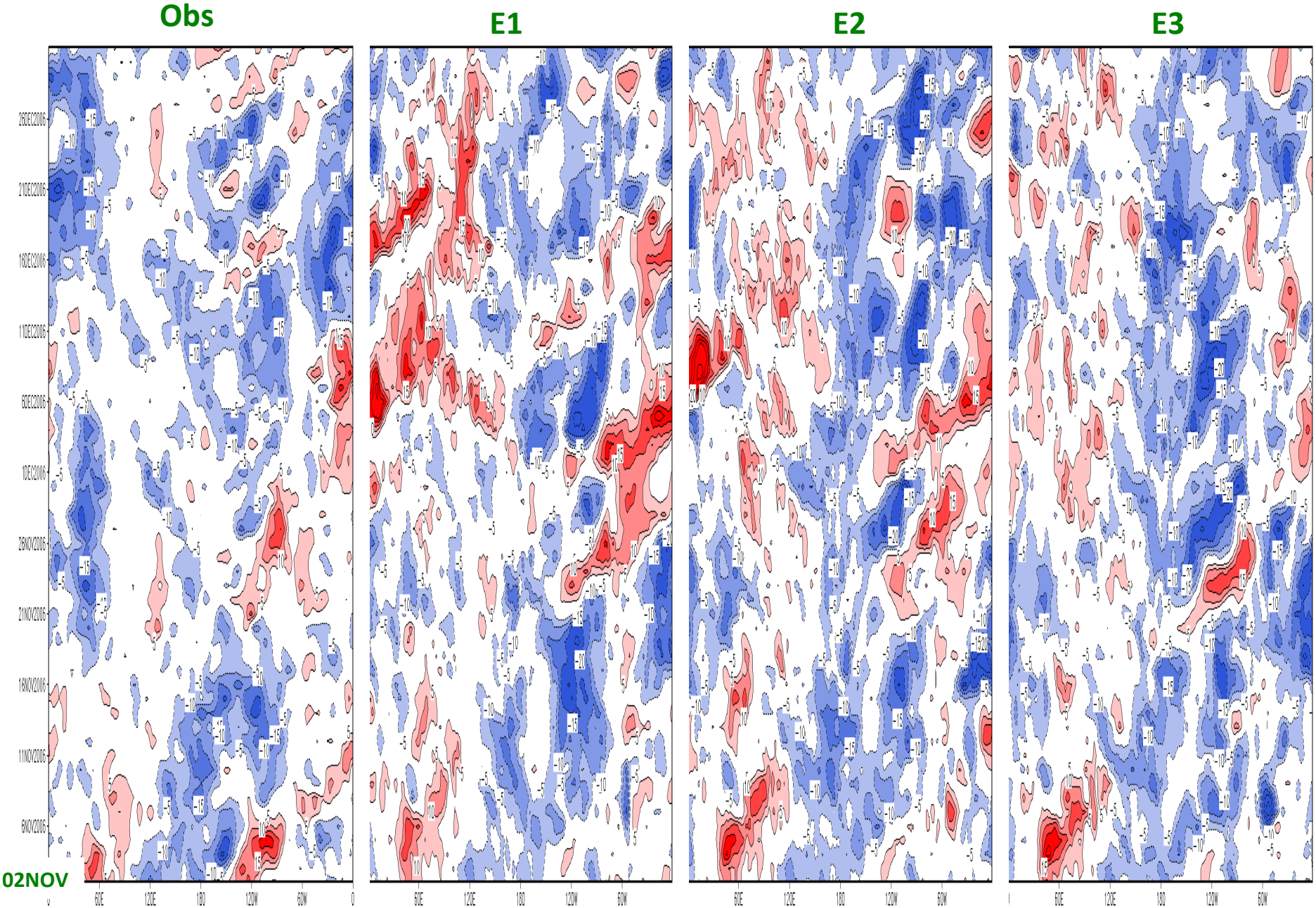
NMME Phase II

- Continue Real-Time SI Activity
- Model Upgrades (e.g., CCSM4; FLOR)
- Comprehensive Data Server
  - 3 hourly, 6 hourly, 24 hourly, Monthly Means
  - 189 2-d Fields
- Testing and Evaluating High Frequency Initialization Forecast Protocol
  - Not Real-time (1999-2009; Nov. Only)
  - 45 Days (Starts Every 5-days)
  - Burst vs. Every 6 hours

NMME Forcing of Wave Watch – 3:
Seasonal Forecast Protocol, but Daily Forcing



Sub-Seasonal: 200 mb Zonal Wind Anomalies: 02Nov-31Dec 2006



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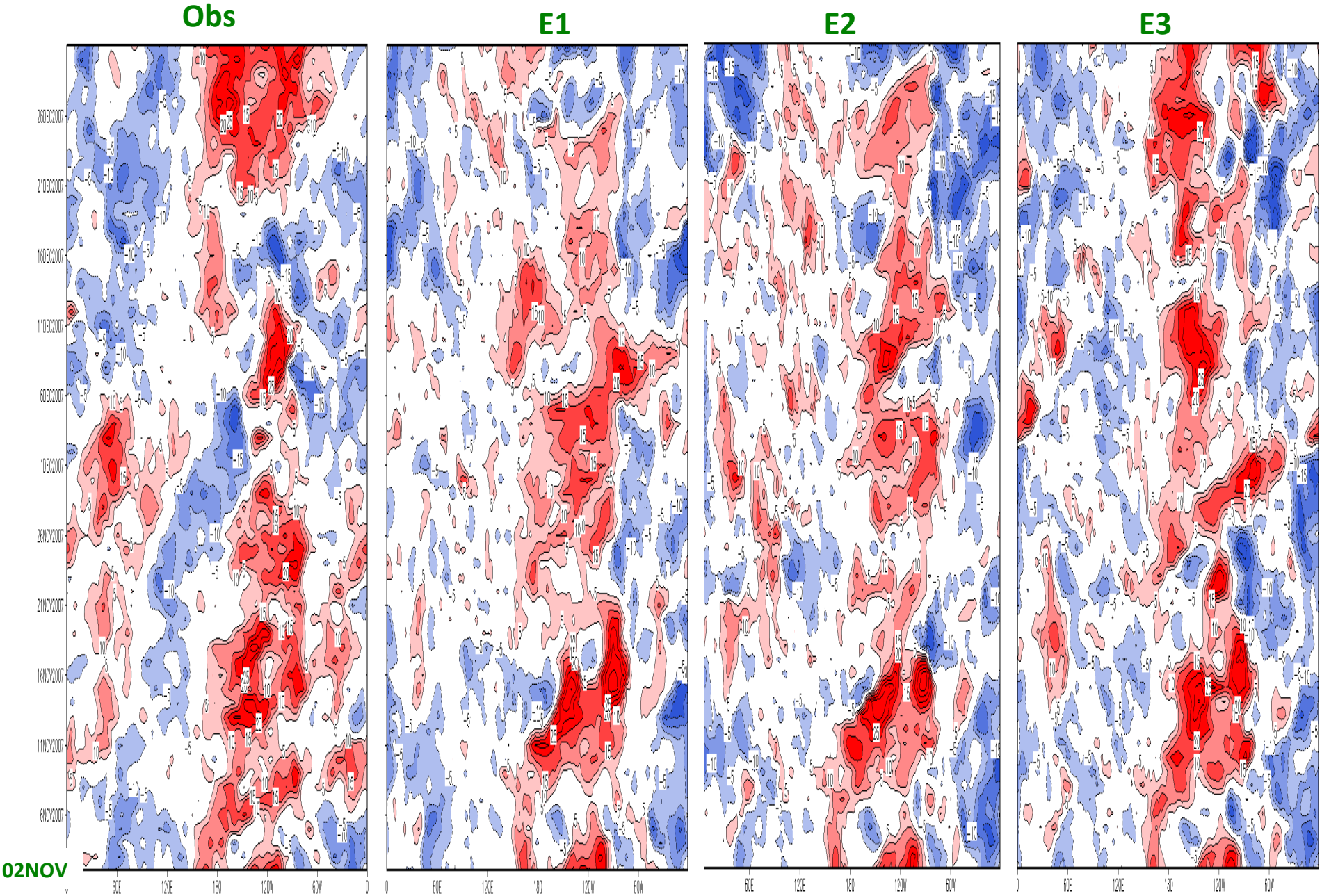

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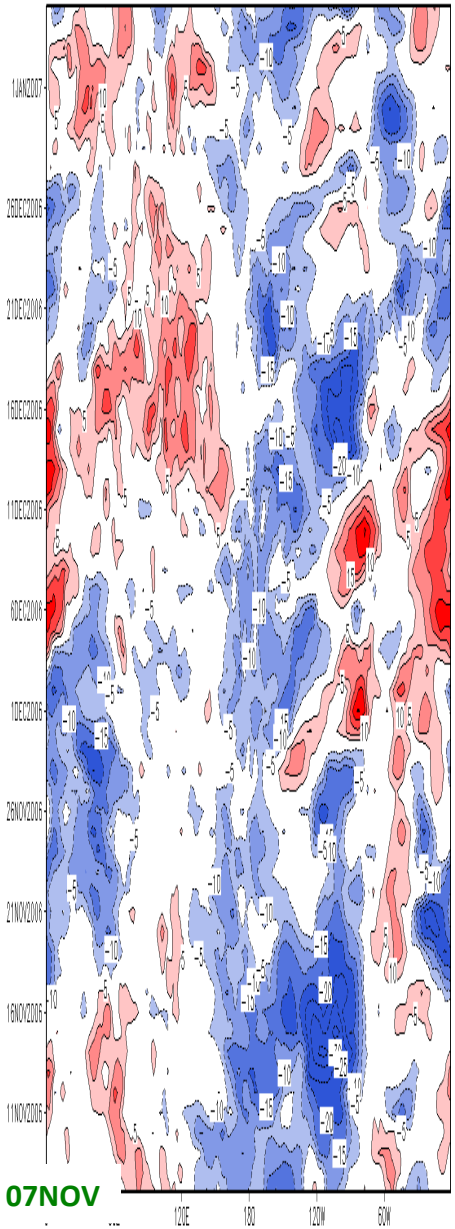

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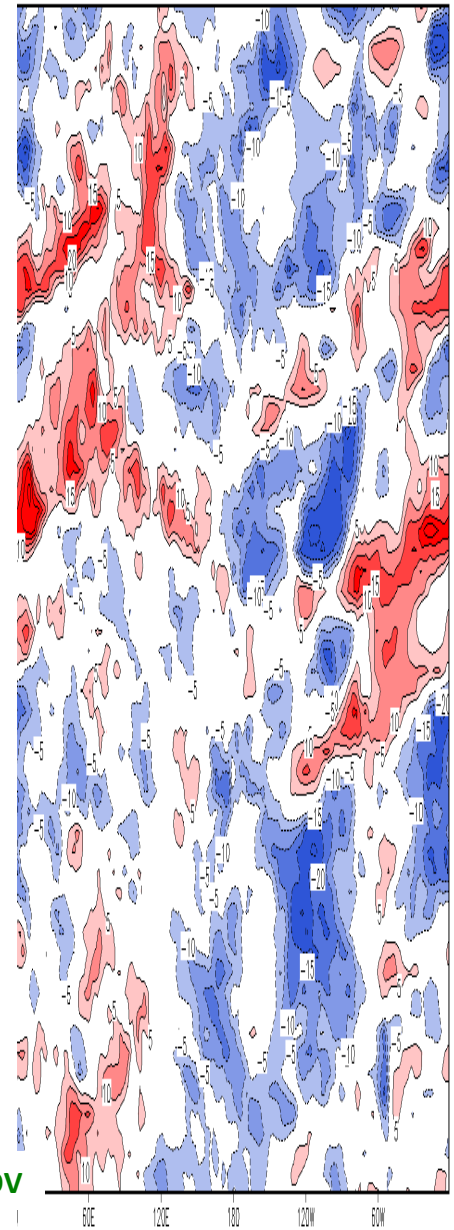

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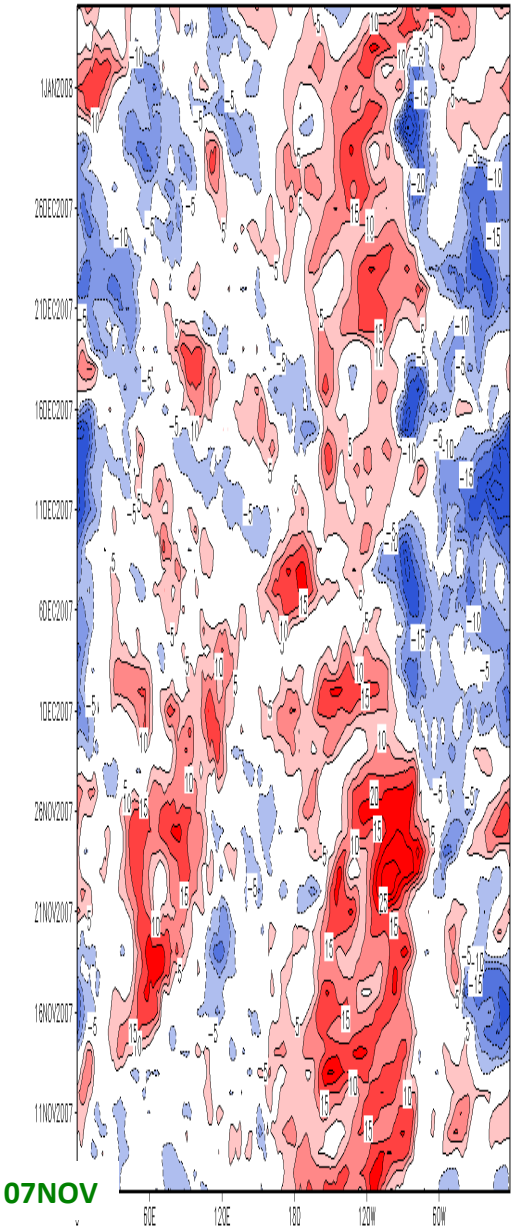

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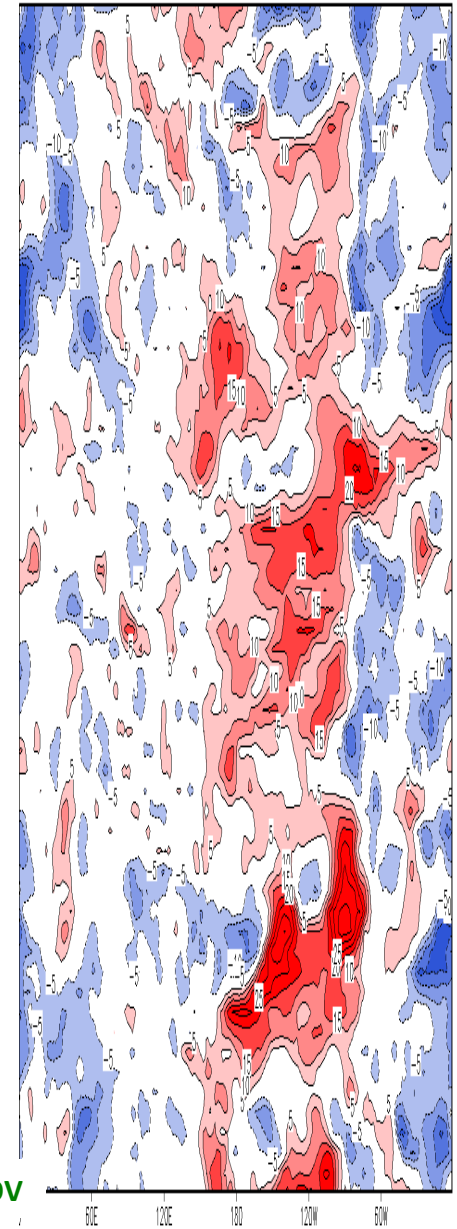

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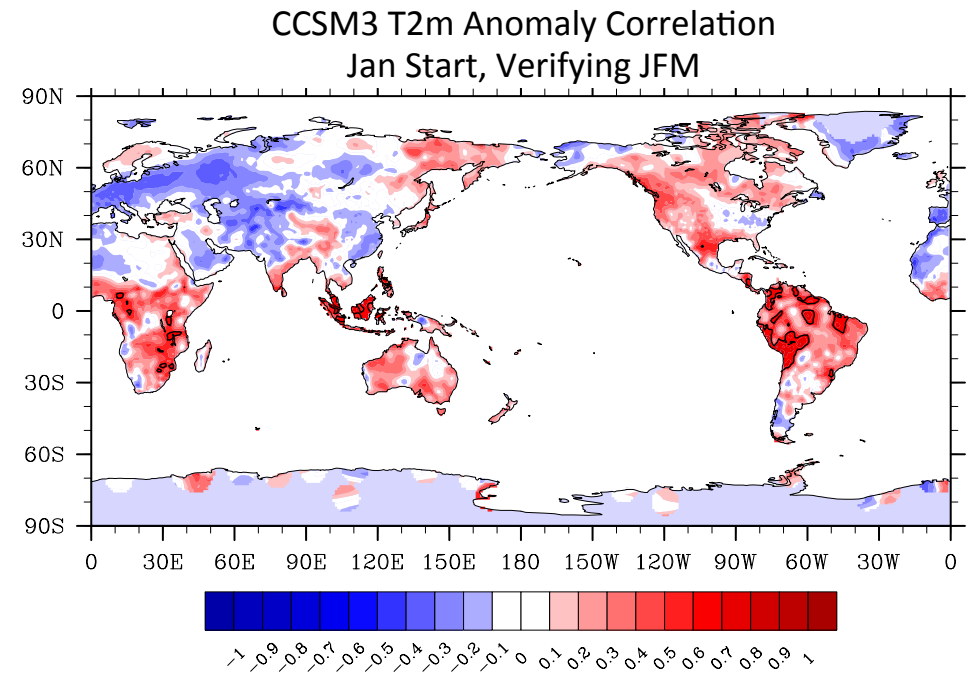
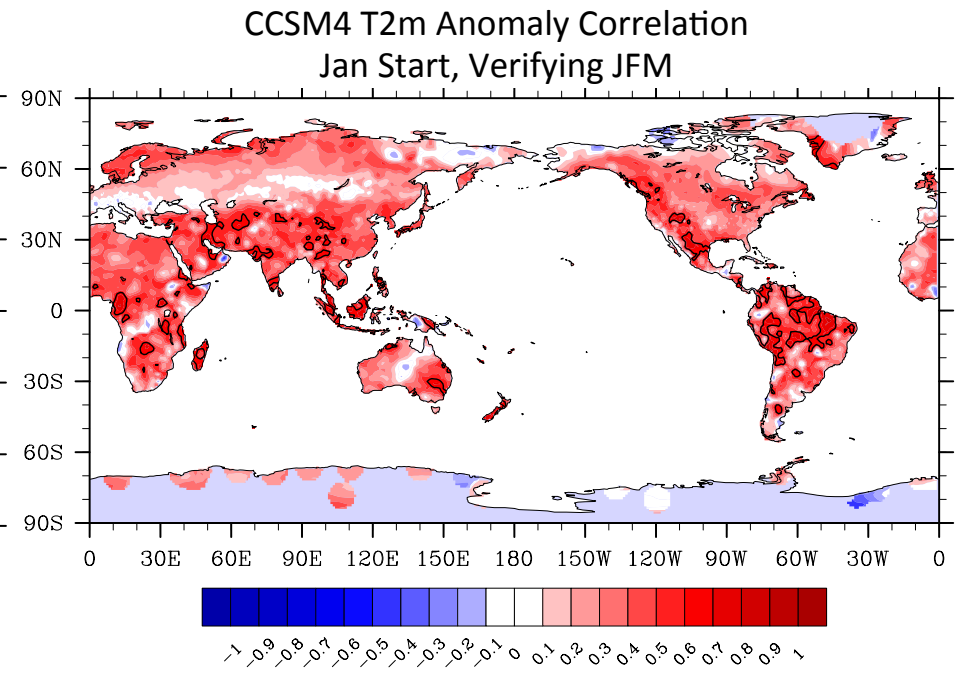

CCSM3 T2m Anomaly Correlation
Jan Start, Verifying JFM
90N
60N
30N
0
30S
60S
90S
0 30E 60E 90E 120E 150E 180 150W 120W 90W 60W 30W 0
-1 -0.9 -0.8 -0.7 -0.6 -0.5 -0.4 -0.3 -0.2 -0.1 0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1


CCSM4 T2m Anomaly Correlation
Jan Start, Verifying JFM
90N
60N
30N
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30S
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90S
0 30E 60E 90E 120E 150E 180 150W 120W 90W 60W 30W 0
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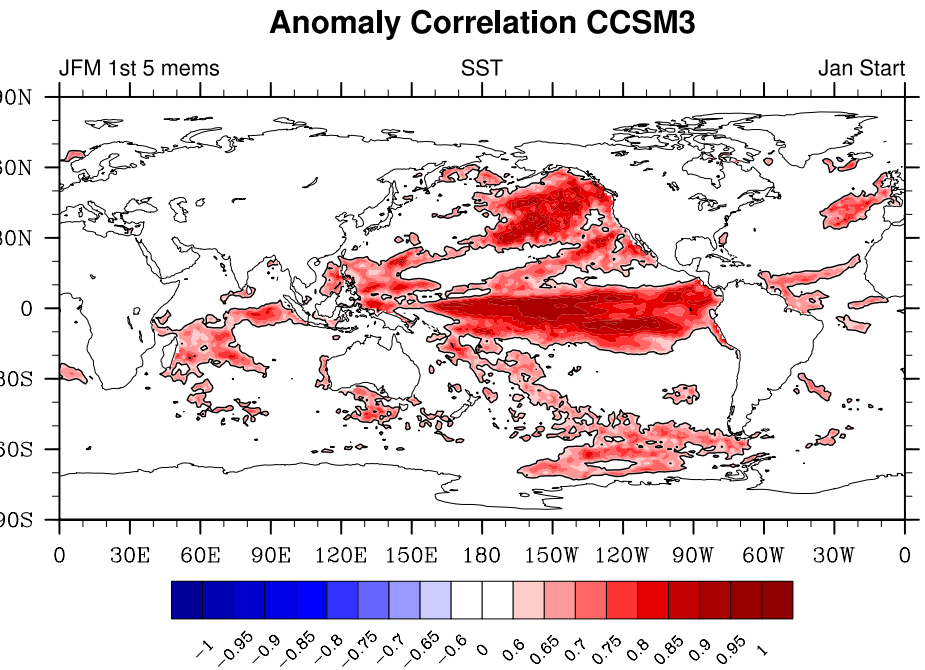
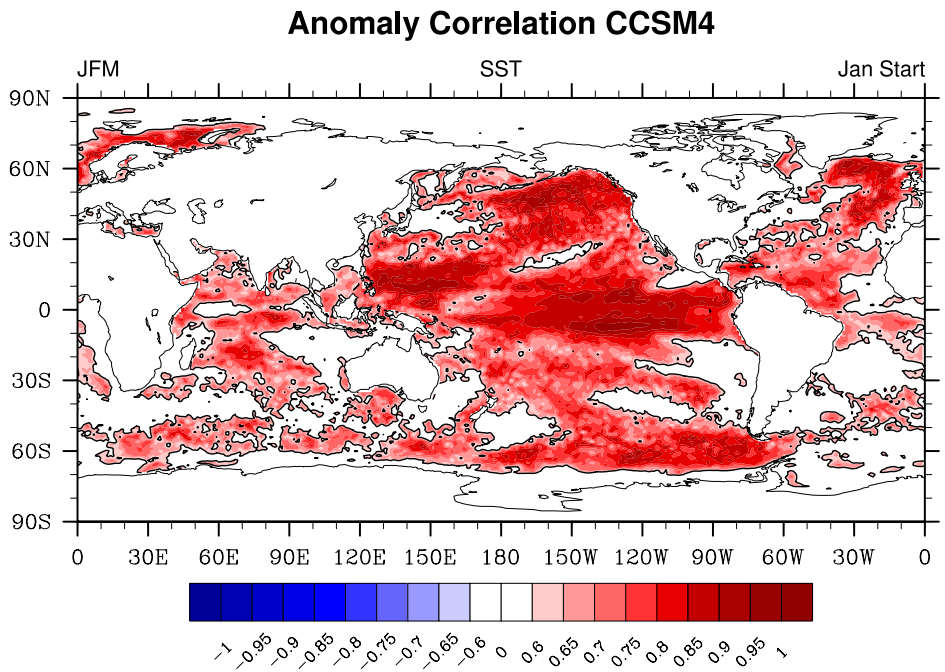

Anomaly Correlation CCSM3
JFM 1st 5 mems
SST
Jan Start
0 30E 60E 90E 120E 150E 180 150W 120W 90W 60W 30W 0
-1 -0.95 -0.9 -0.85 -0.8 -0.75 -0.7 -0.65 -0.6 0 0.6 0.65 0.7 0.75 0.8 0.85 0.9 0.95 1


Anomaly Correlation CCSM4
JFM
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Jan Start
90N
60N
30N
0
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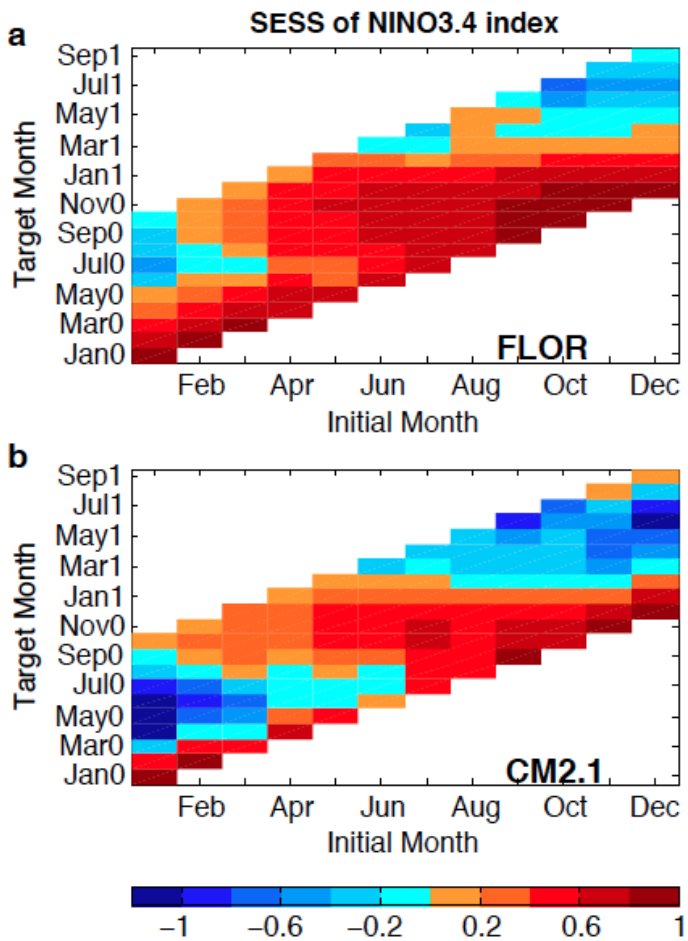
0 30E 60E 90E 120E 150E 180 150W 120W 90W 60W 30W 0
-1 -0.95 -0.9 -0.85 -0.8 -0.75 -0.7 -0.65 -0.6 0 0.6 0.65 0.7 0.75 0.8 0.85 0.9 0.95 1

SESS of NINO3.4 index in FLOR and CM2.1

FLOR

CM2.1



Squared error skill score (a,b) of NINO3.4 index in FLOR and CM2.1 for each initial month and target month during 1981-2010 (1983-2010) in FLOR (CM2.1).

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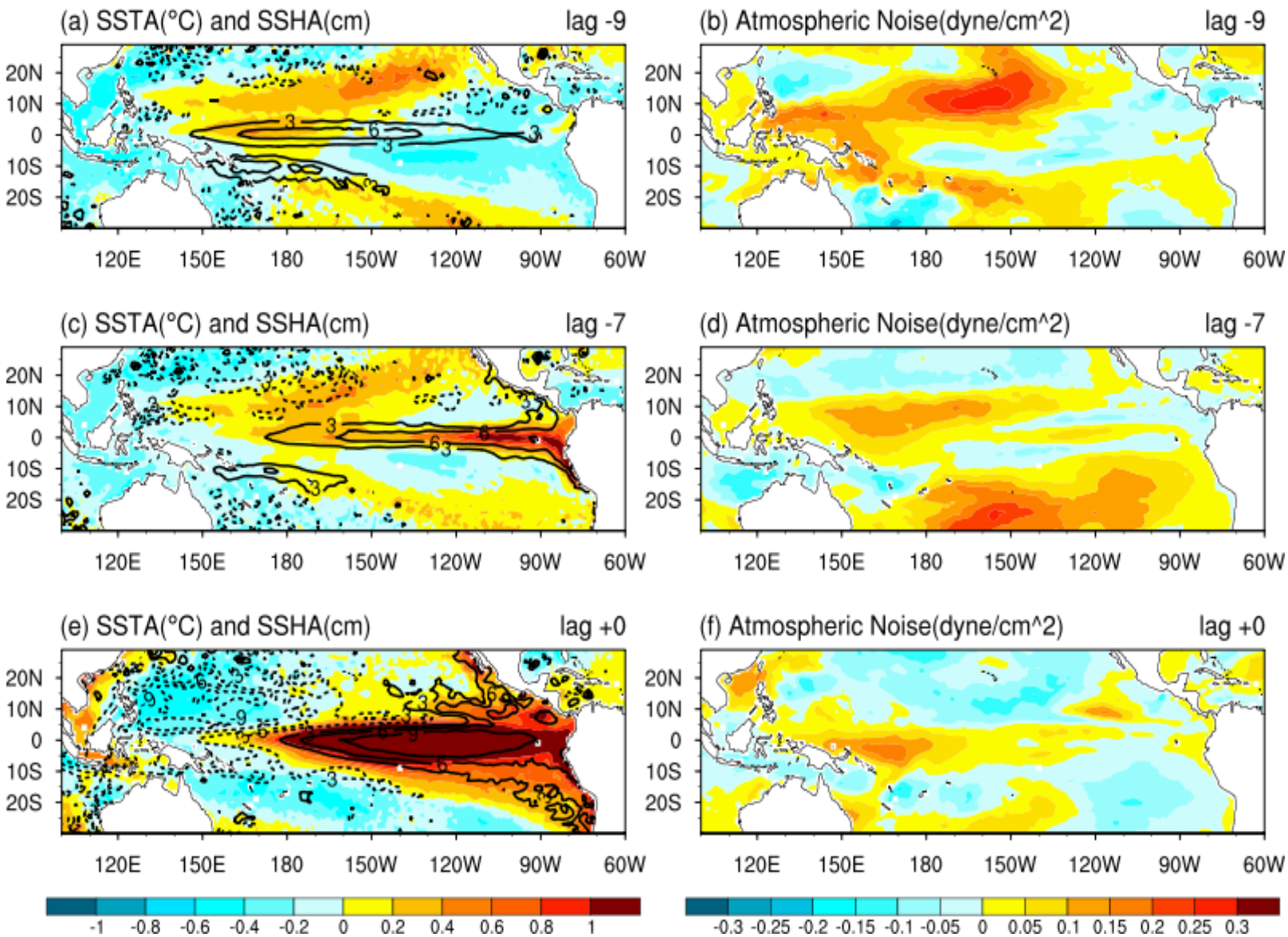
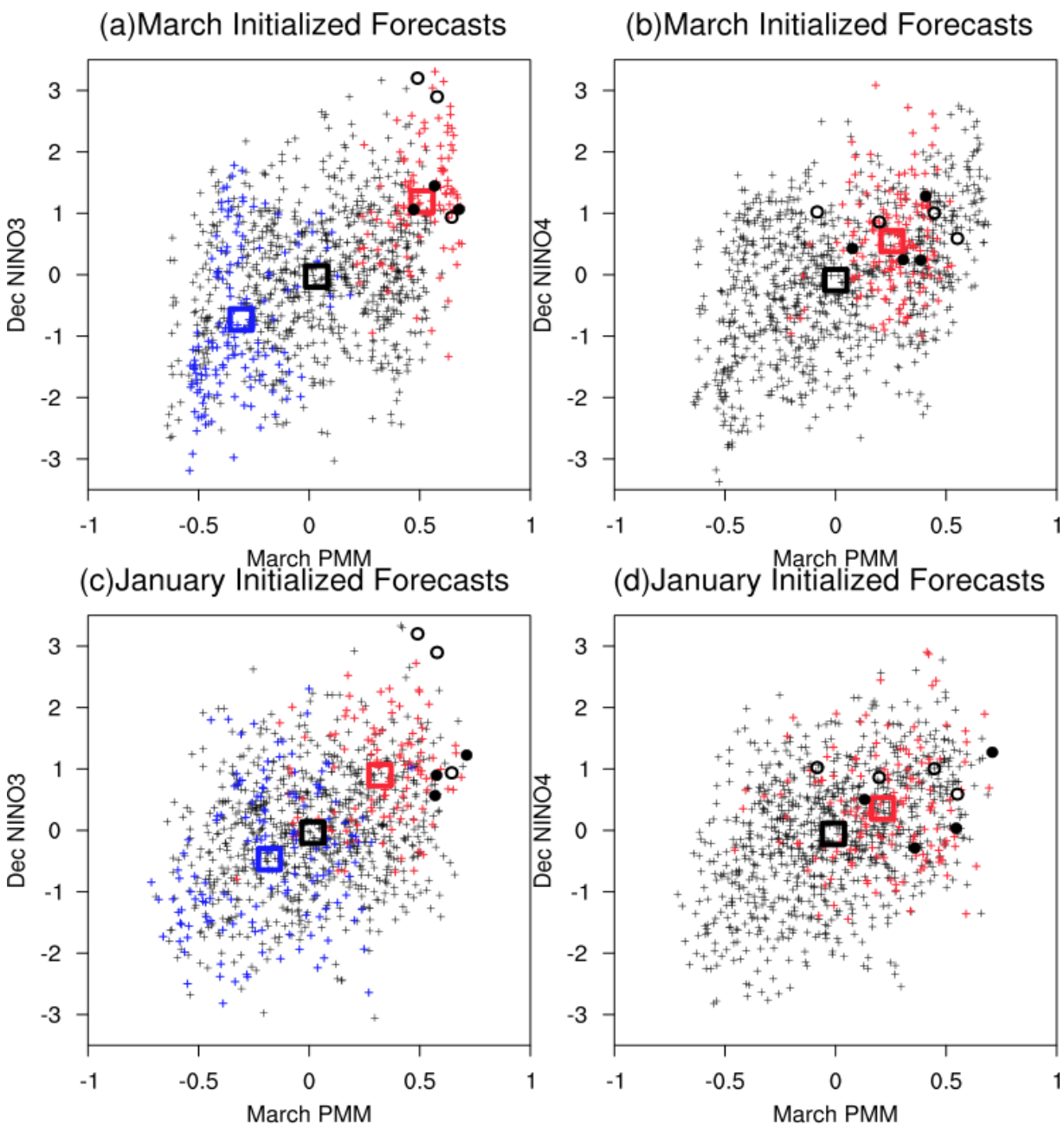
Using Predictability Research to Advance Operational Prediction



Larson and Kirtman 2013, GRL

Can PMM Be Used in Real Predictions?



Larson and Kirtman 2014

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