

# **High Resolution Real Time Weather Forecast**

**Mesoscale Model:** Weather Research and Forecasting Model (Version 3.3)

**Horizontal Resolution:** Nested Domain (45 Km, 15 Km and 5 Km)

**Grid Points:** Domain 1: 260×235 (45 Km)

Domain 2: 352×373 (15 Km)

Domain 3: 676×721 (5 Km)

**Vertical Levels:** 36 (upto 10 hPa)

**Assimilation Method:** 3-Dimensional Variational Data Assimilation (3D-Var)

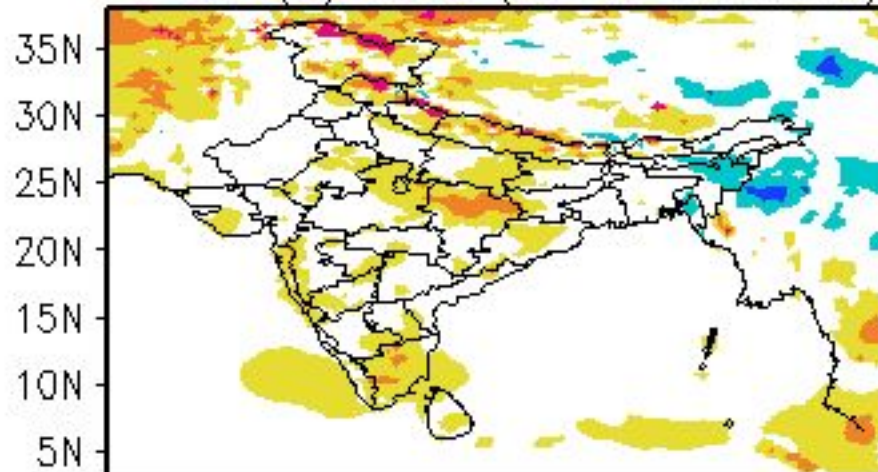
## **Data Used for Assimilation:**

ISRO's AWS, INSAT AMV, Vertical profiles from GTS, Ocean Surface Winds from Oceansat-2 and ASCAT Scatterometer, Temperature and Moisture Profiles from ATOVS and IASI (EUMETCast), Refractivity from GRAS RO (EUMETCast), Conventional observation and AMVs available through GTS.

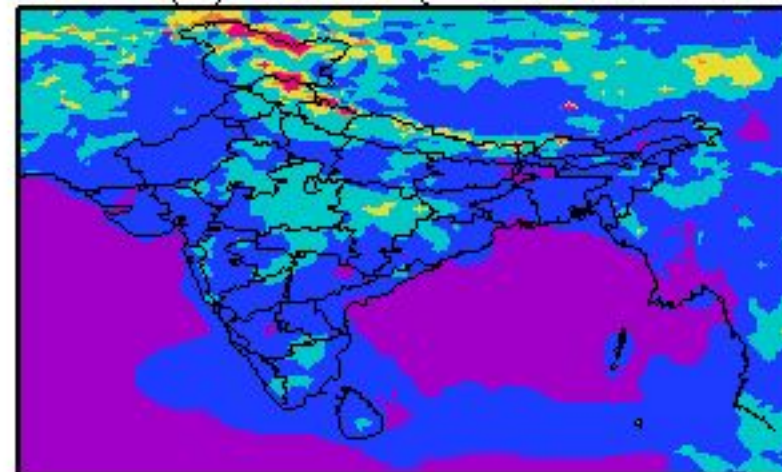
## Error Statistics in Surface Meteorological Parameter

Forecast Hour	Temperature (C)	Relative Humidity (%)	Wind Speed (m/s)
	Rmsd (Bias)	Rmsd (Bias)	Rmsd (Bias)
24 Hour	1.31(0.51)	9.96(-2.79)	1.81(-0.05)
48 Hour	1.42(0.49)	10.80(-2.98)	2.04(-0.19)
72 Hour	1.49(0.48)	11.29(-2.94)	2.18(-0.25)

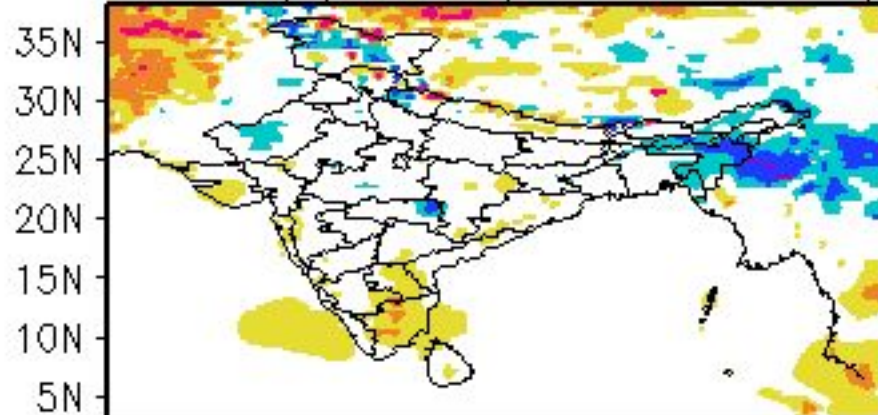
TEMP (C) BIAS (24 hr Forecast)



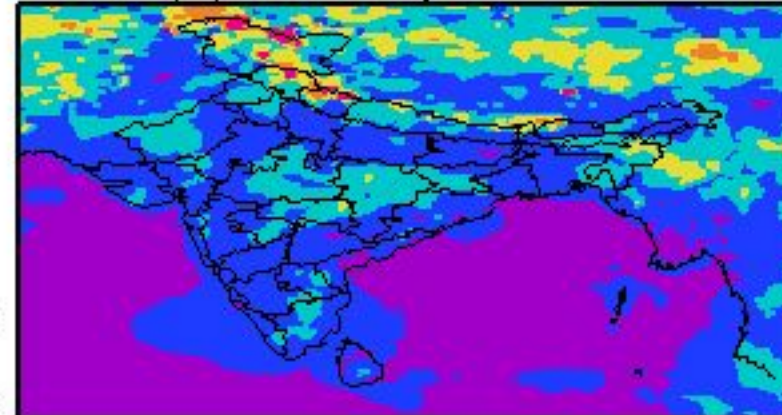
TEMP (C) RMSD (24 hr Forecast)



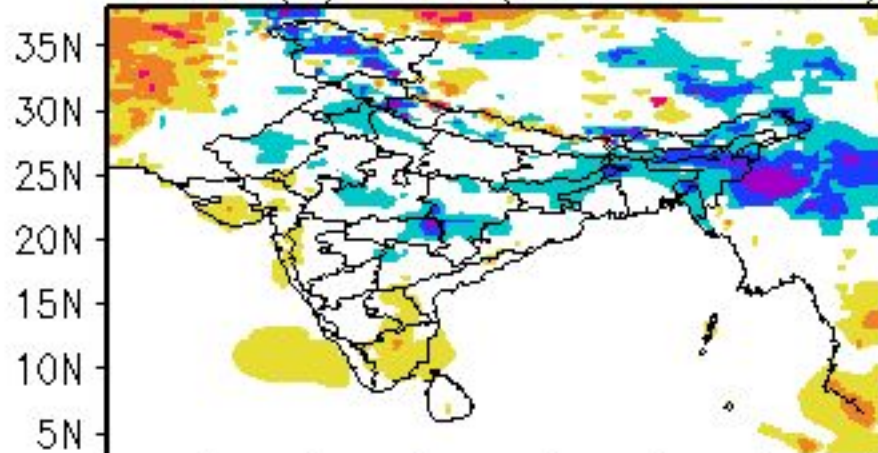
TEMP (C) BIAS (48 hr Forecast)



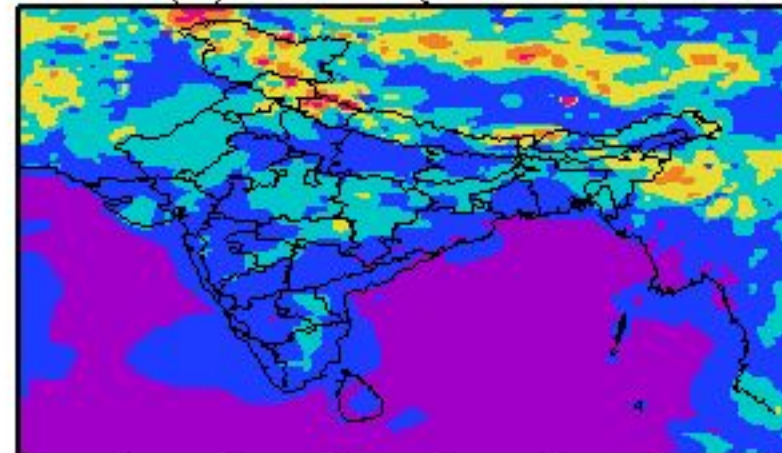
TEMP (C) RMSD (48 hr Forecast)



TEMP (C) BIAS (72 hr Forecast)



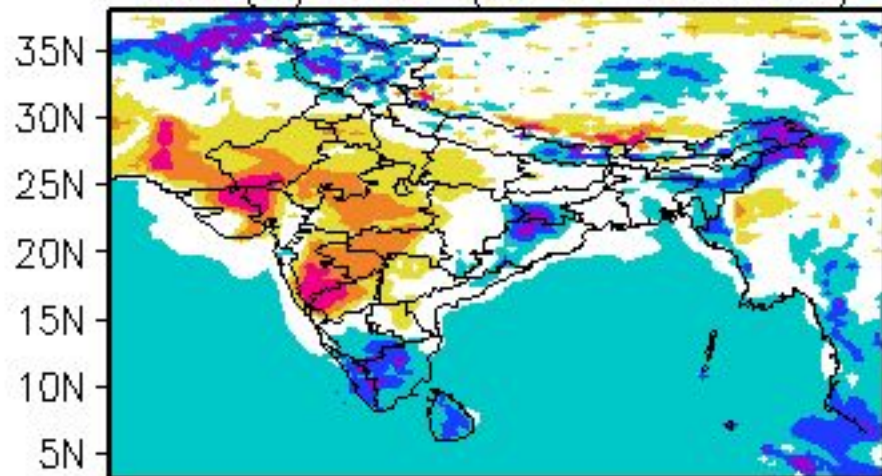
TEMP (C) RMSD (72 hr Forecast)



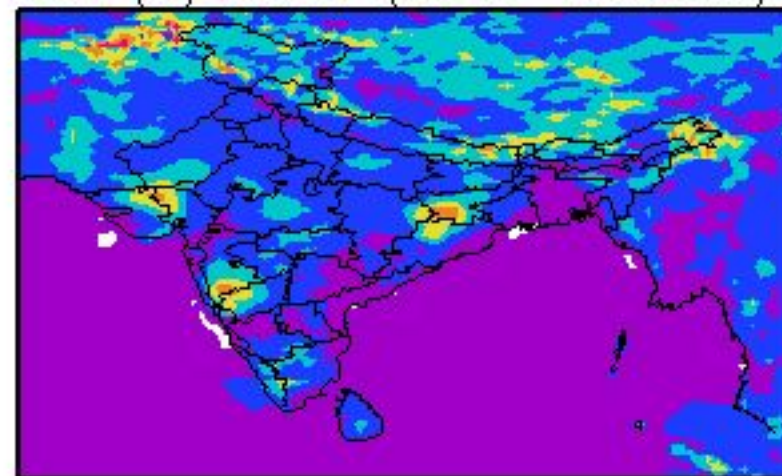
65E 70E 75E 80E 85E 90E 95E 100E

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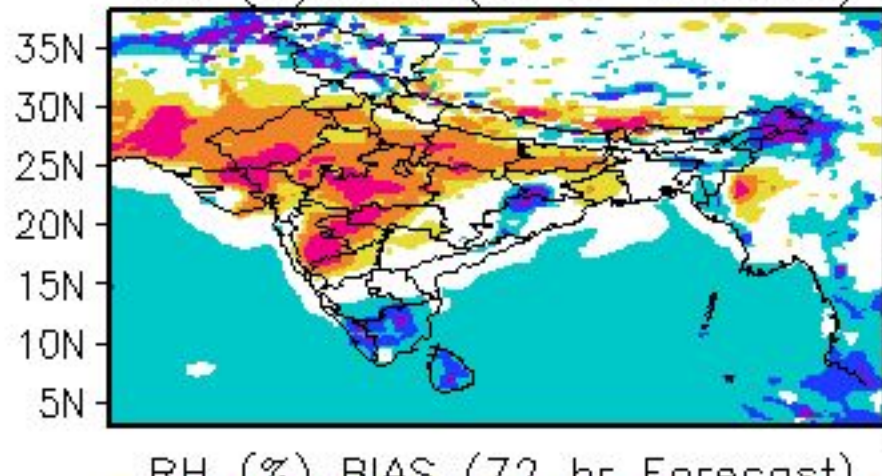
RH (%) BIAS (24 hr Forecast)



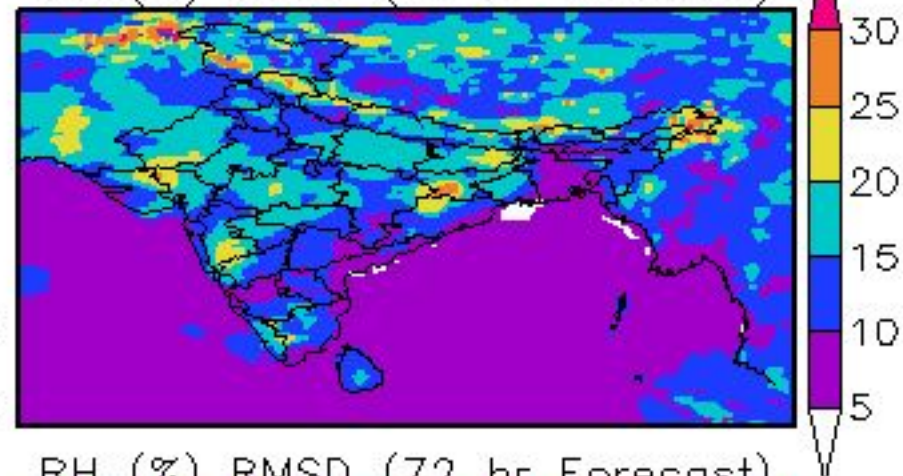
RH (%) RMSD (24 hr Forecast)



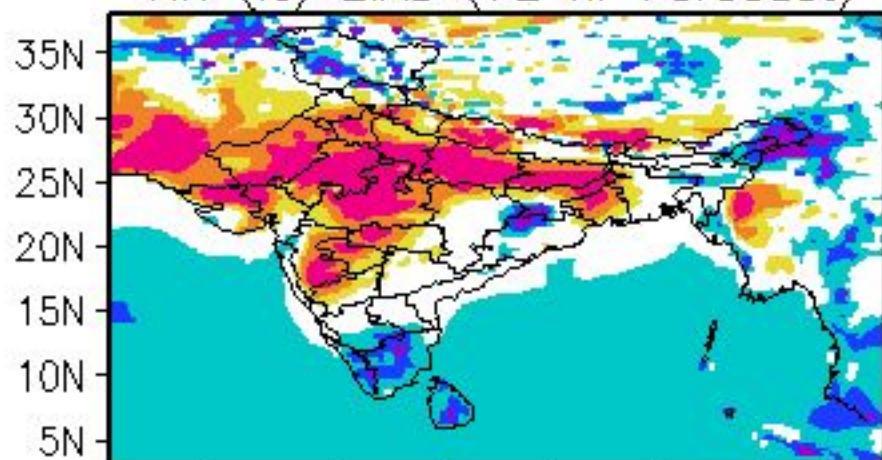
RH (%) BIAS (48 hr Forecast)



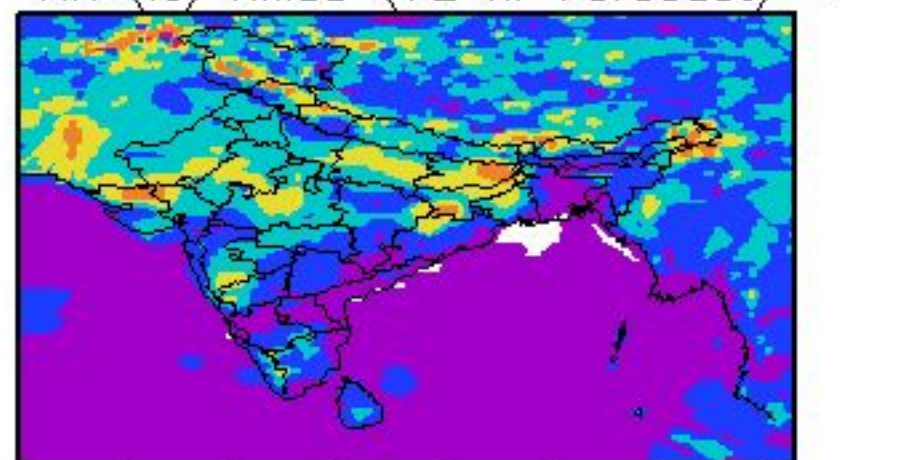
RH (%) RMSD (48 hr Forecast)



RH (%) BIAS (72 hr Forecast)



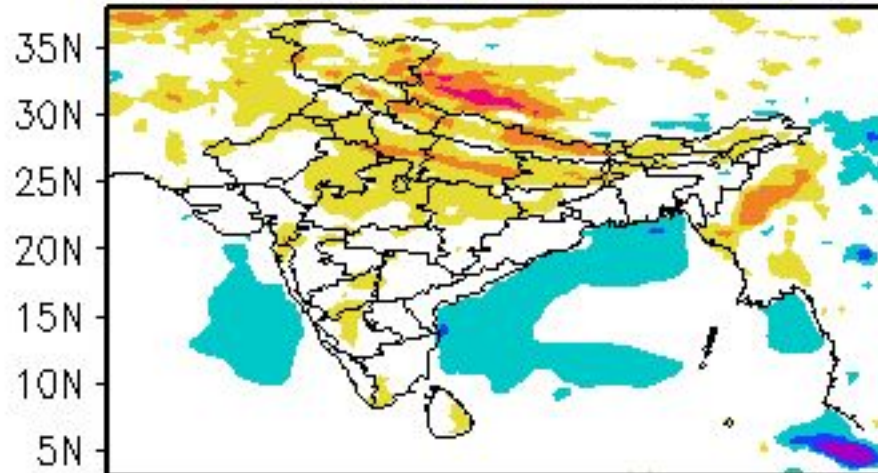
RH (%) RMSD (72 hr Forecast)



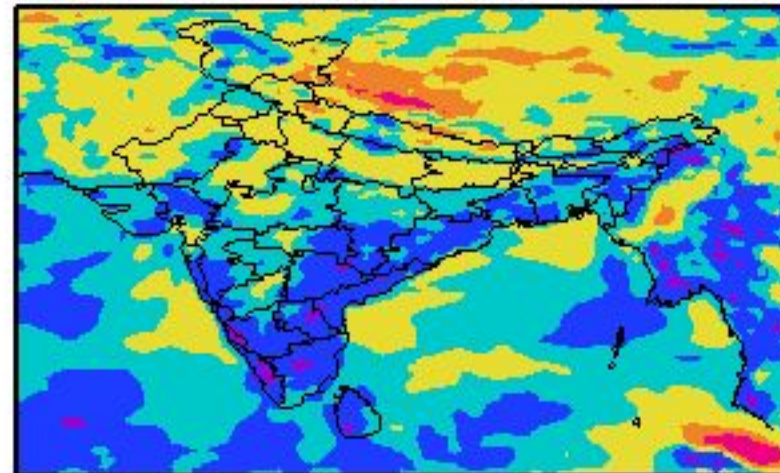
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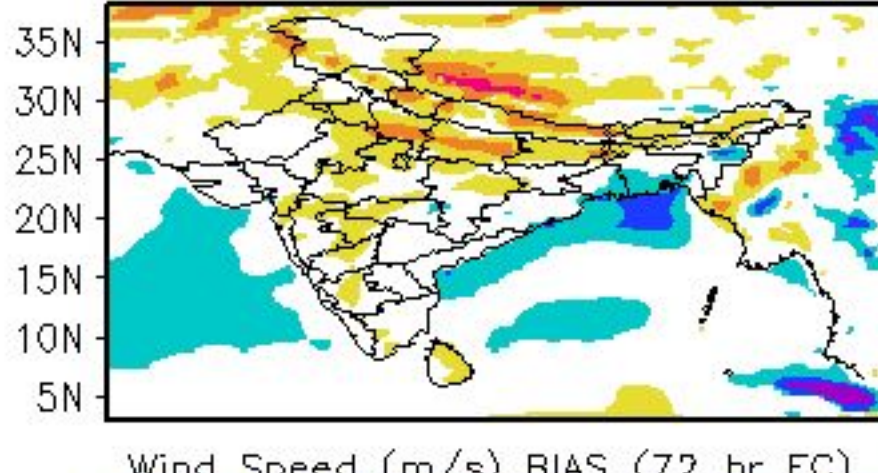
Wind Speed (m/s) BIAS (24 hr FC)



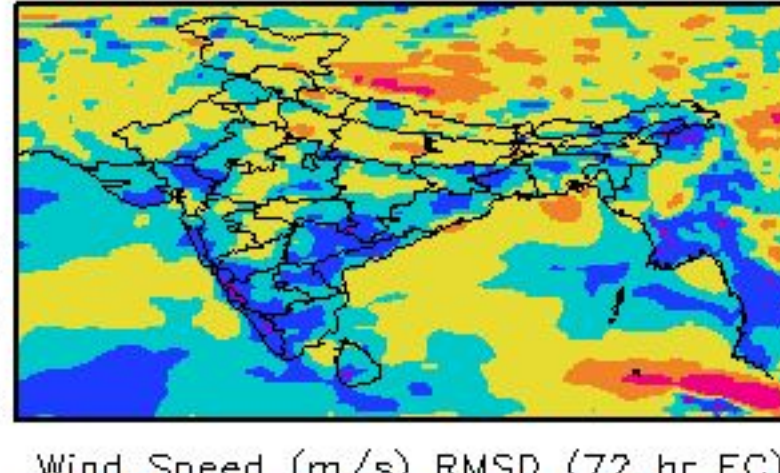
Wind Speed (m/s) RMSD (24 hr FC)



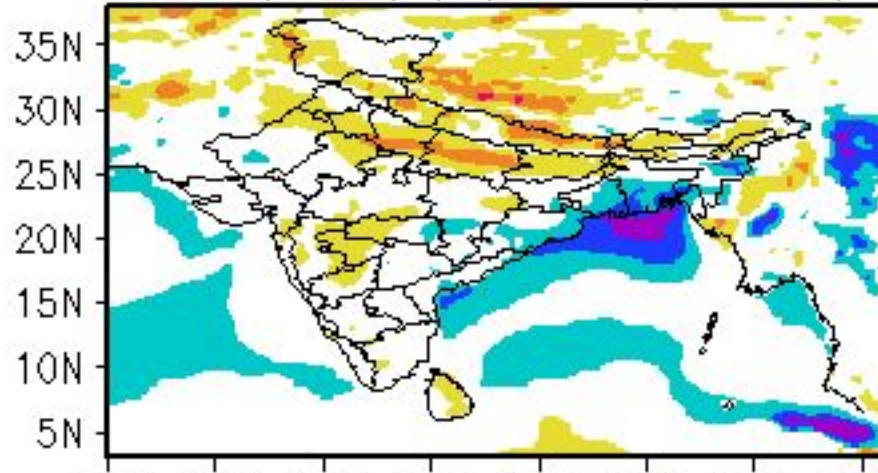
Wind Speed (m/s) BIAS (48 hr FC)



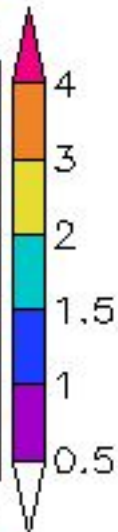
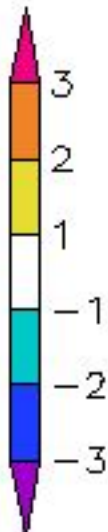
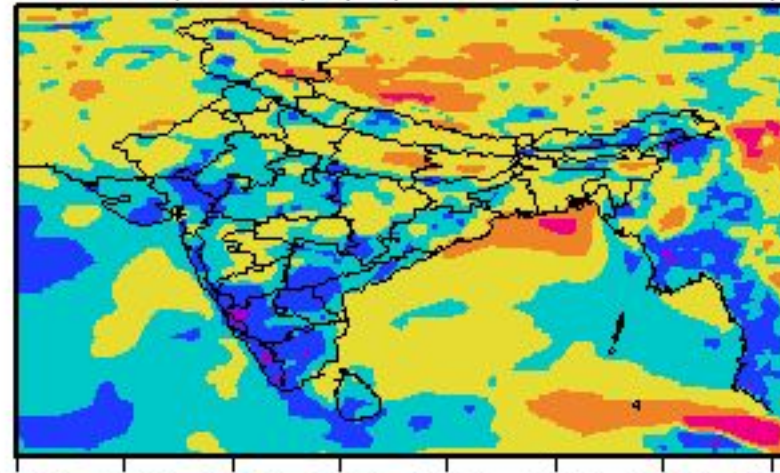
Wind Speed (m/s) RMSD (48 hr FC)



Wind Speed (m/s) BIAS (72 hr FC)



Wind Speed (m/s) RMSD (72 hr FC)

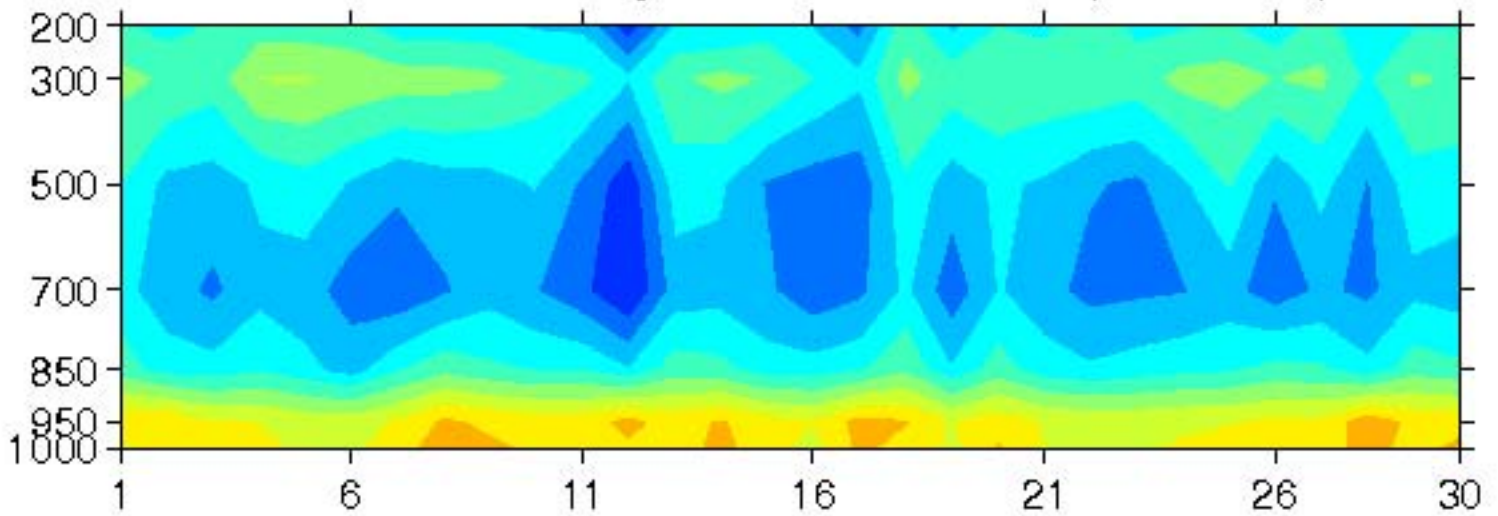


35N  
30N  
25N  
20N  
15N  
10N  
5N

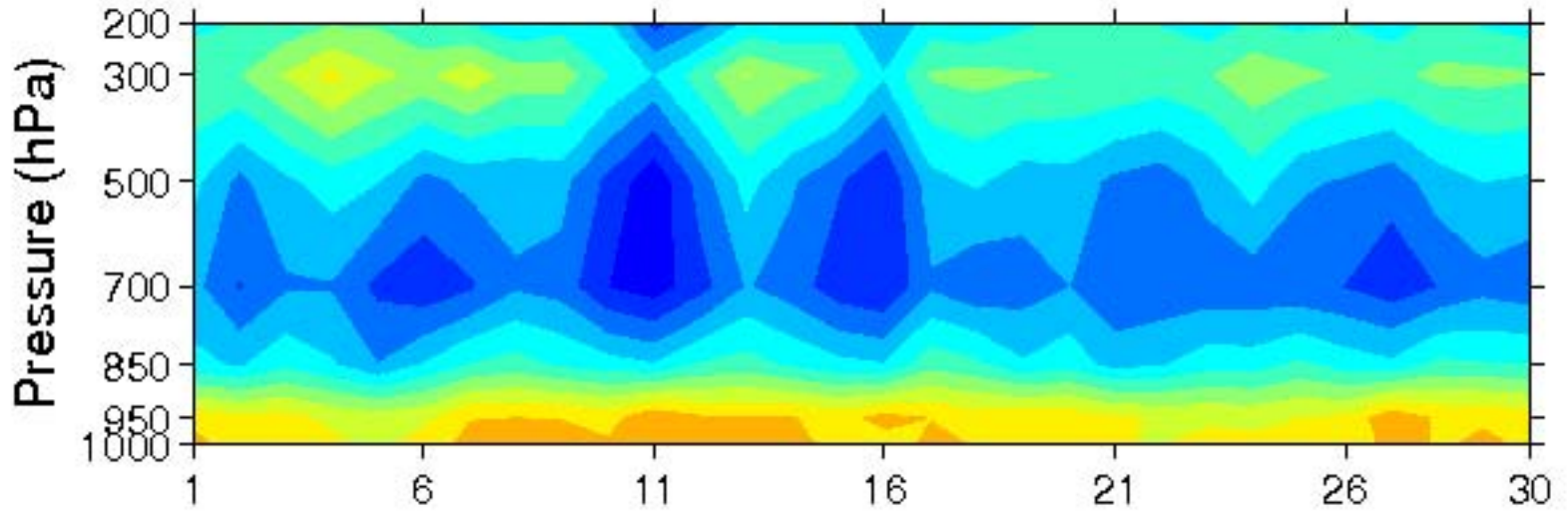
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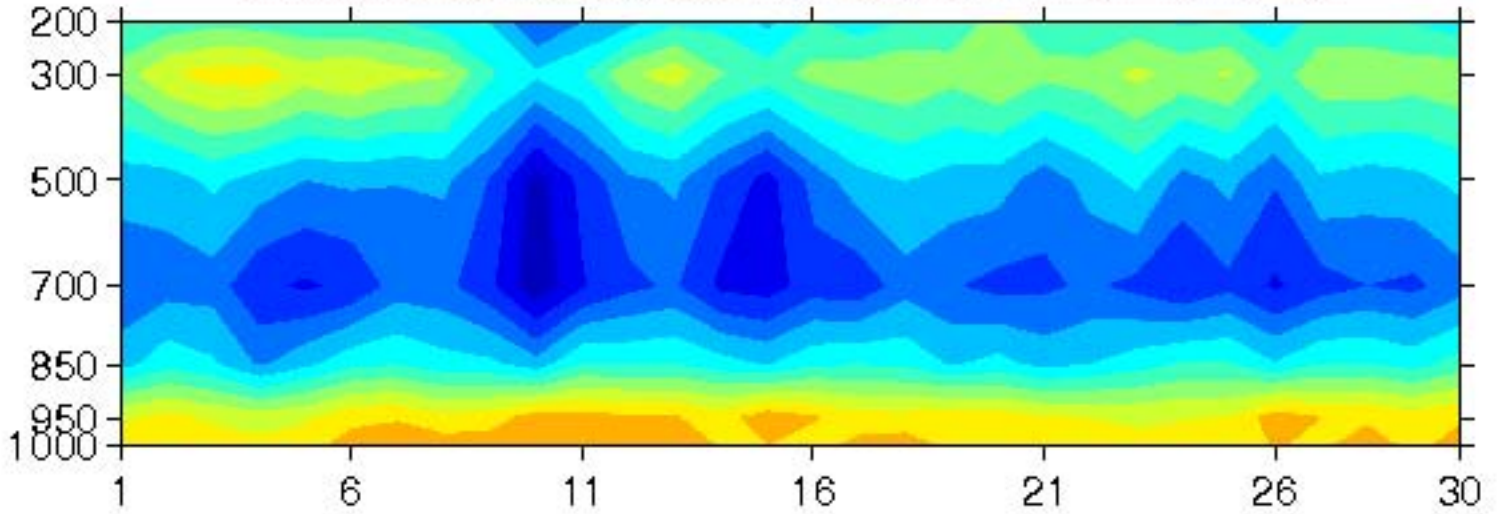
Relative Humidity Mean Difference (24 Hr FC)



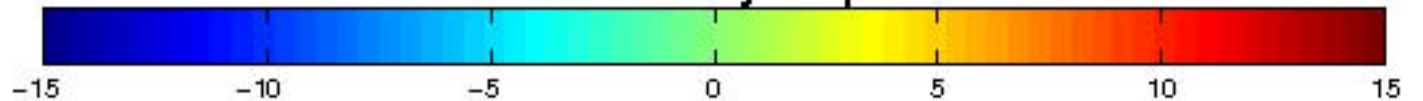
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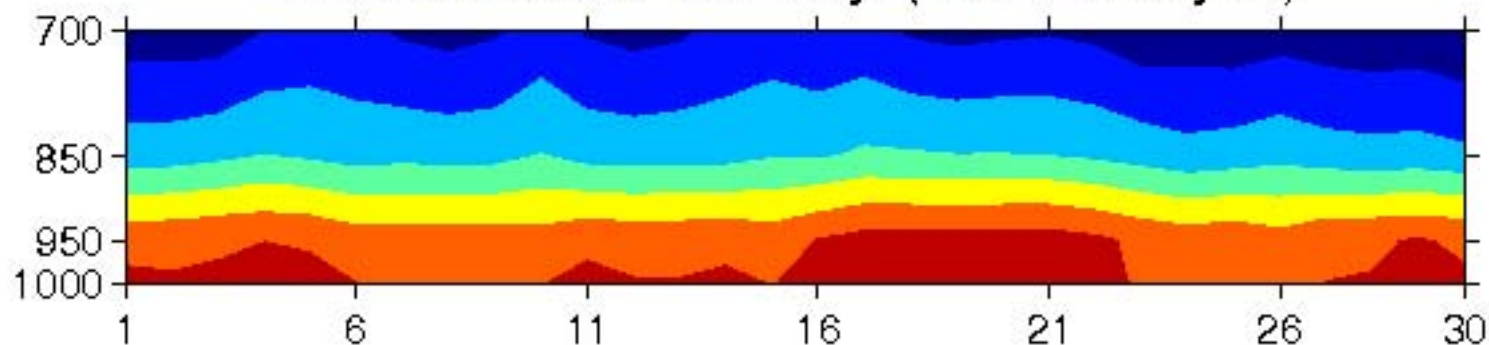
Relative Humidity Mean Difference (72 Hr FC)



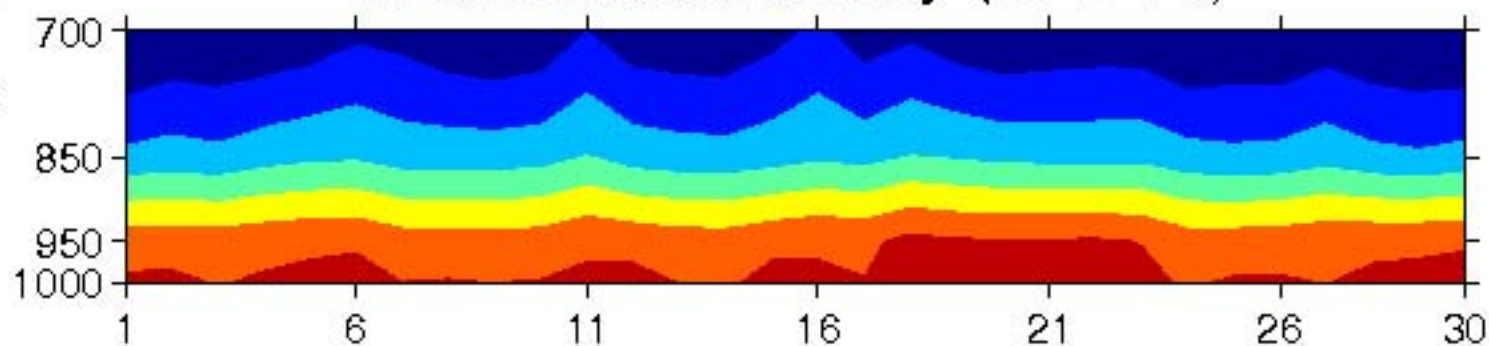
Number of Days Apr 2012



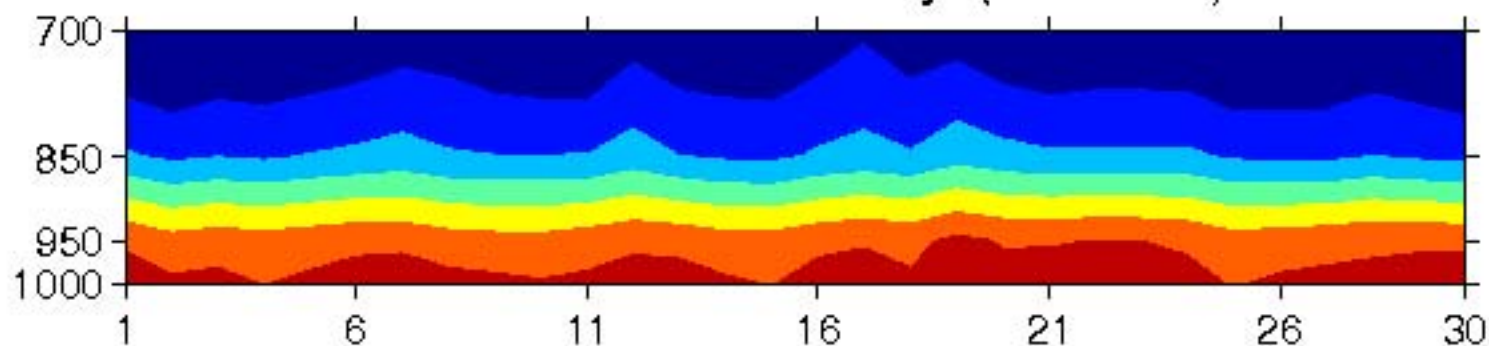
MEAN Relative Humidity (NCEP Analysis)



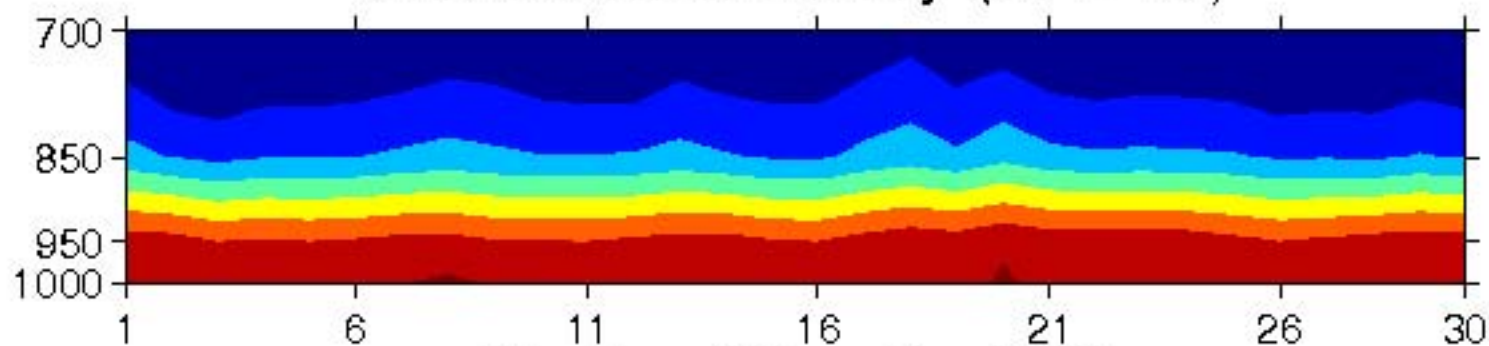
MEAN Relative Humidity (24 Hr FC)



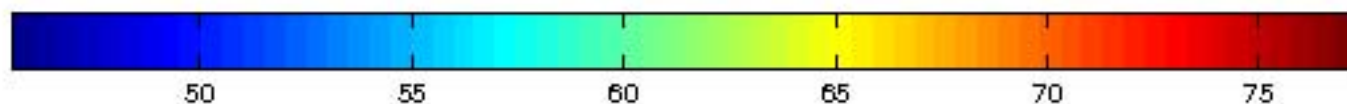
MEAN Relative Humidity (48 Hr FC)



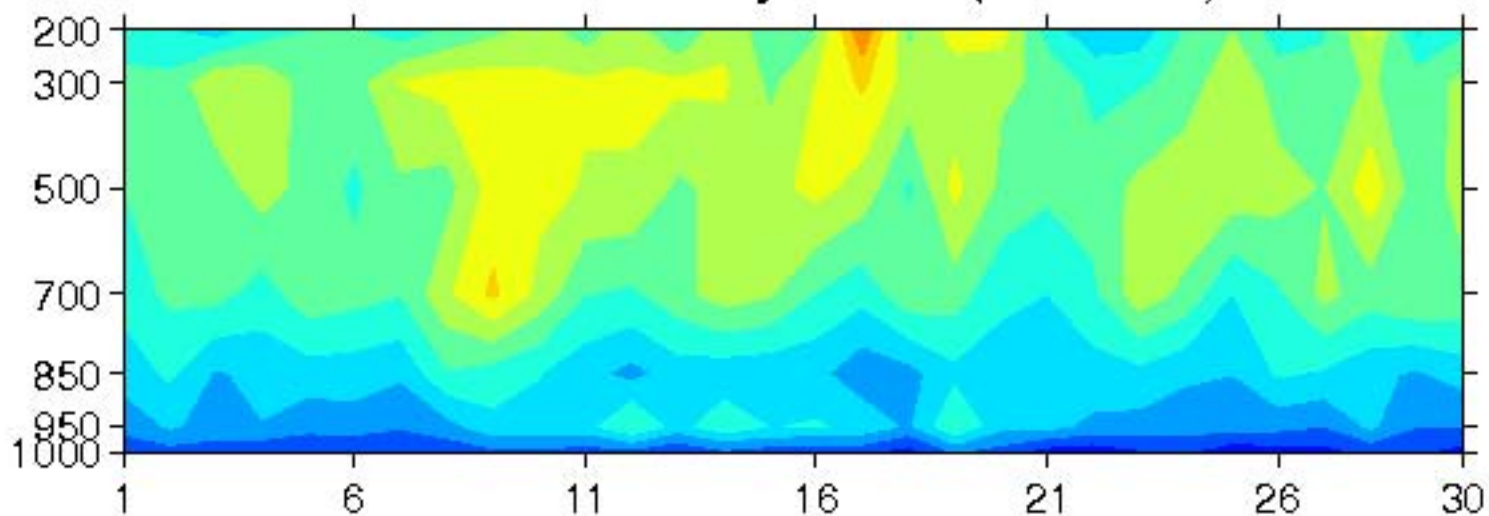
MEAN Relative Humidity (72 Hr FC)



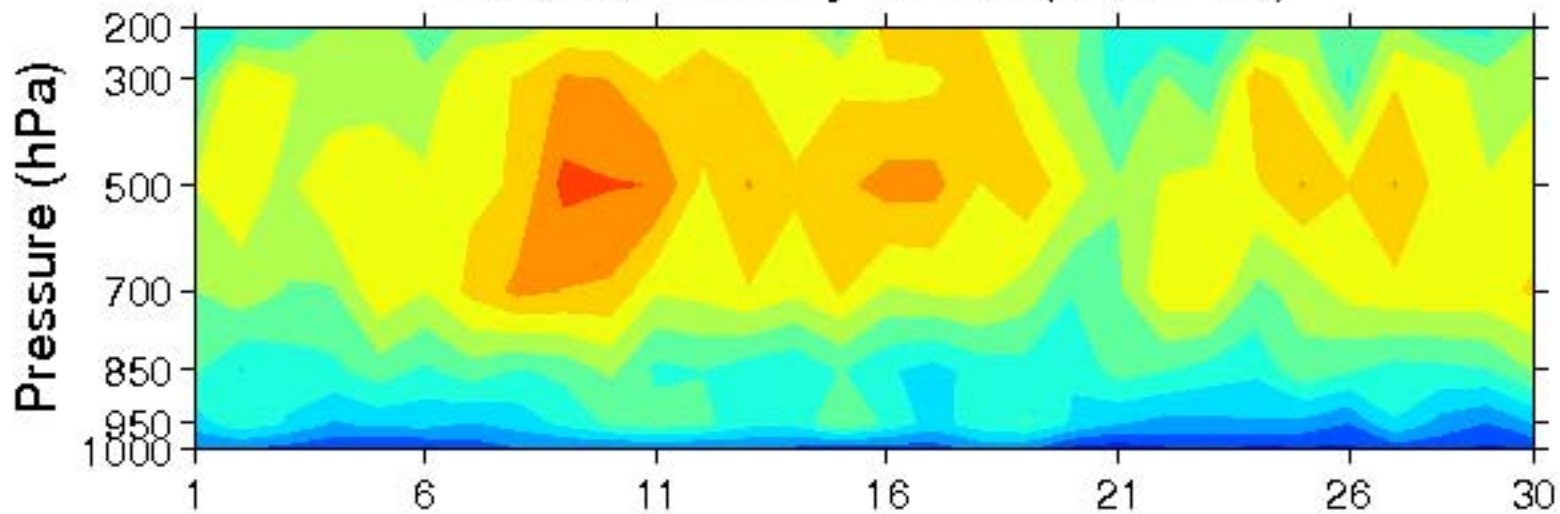
Number of Days Apr 2012



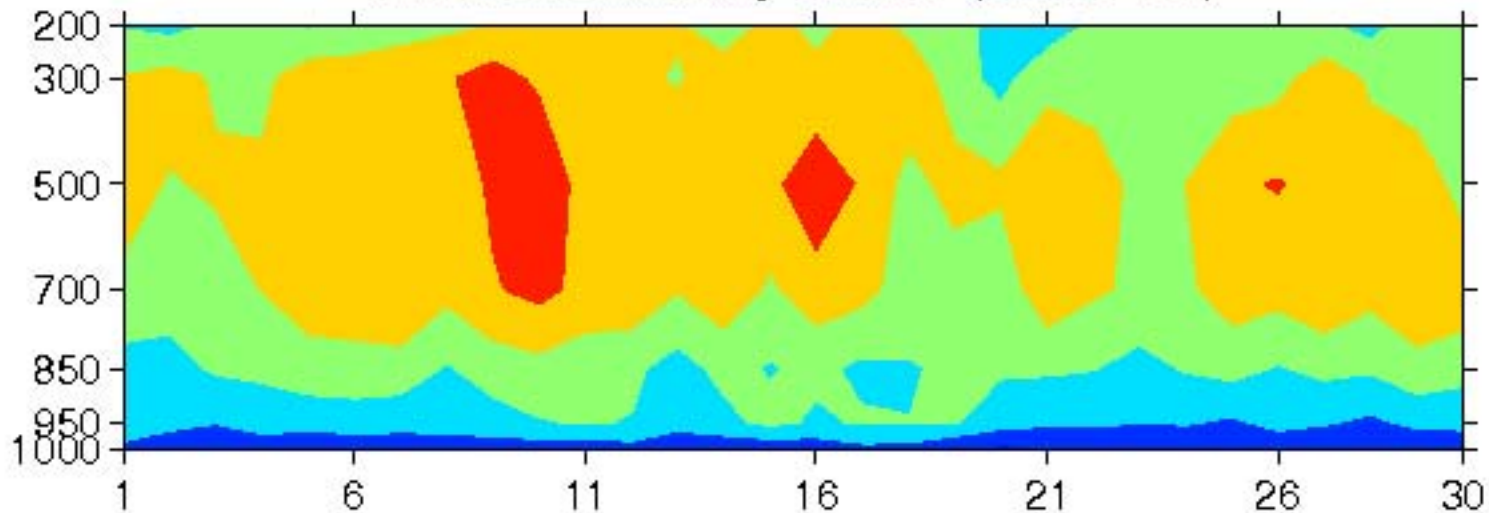
Relative Humidity RMSD (24 Hr FC)



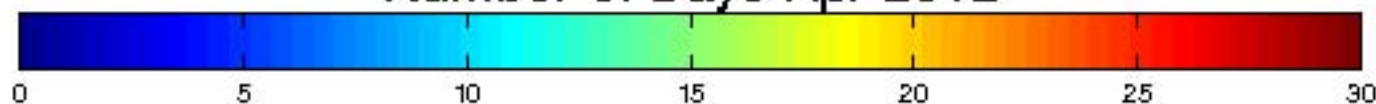
Relative Humidity RMSD (48 Hr FC)



Relative Humidity RMSD (72 Hr FC)

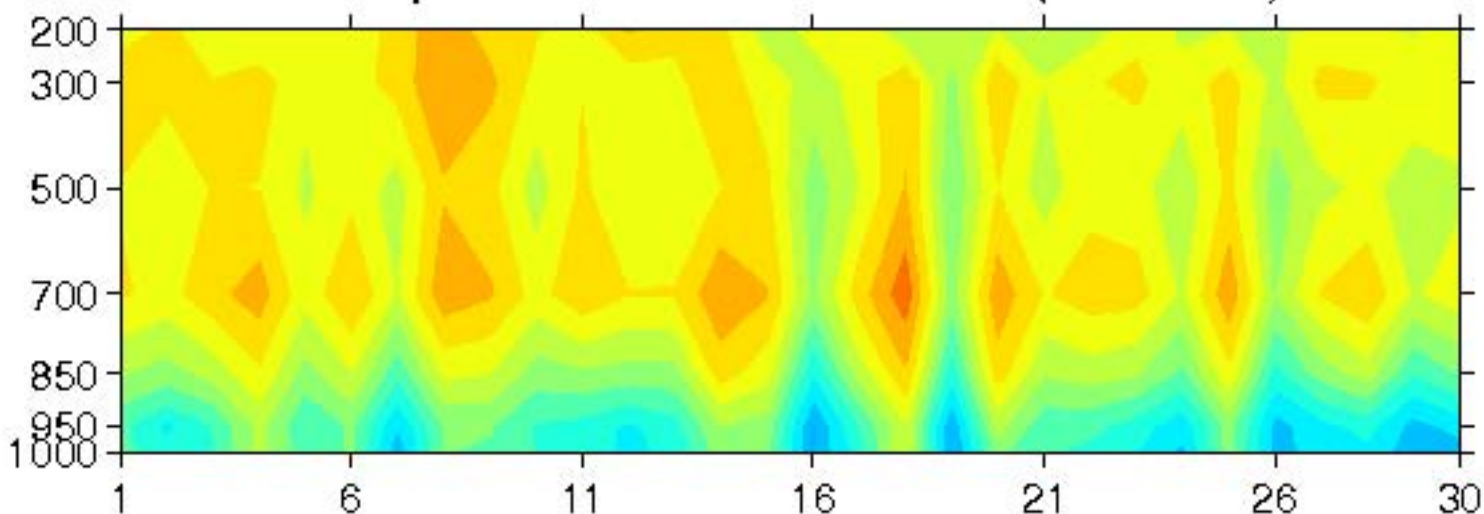


Number of Days Apr 2012

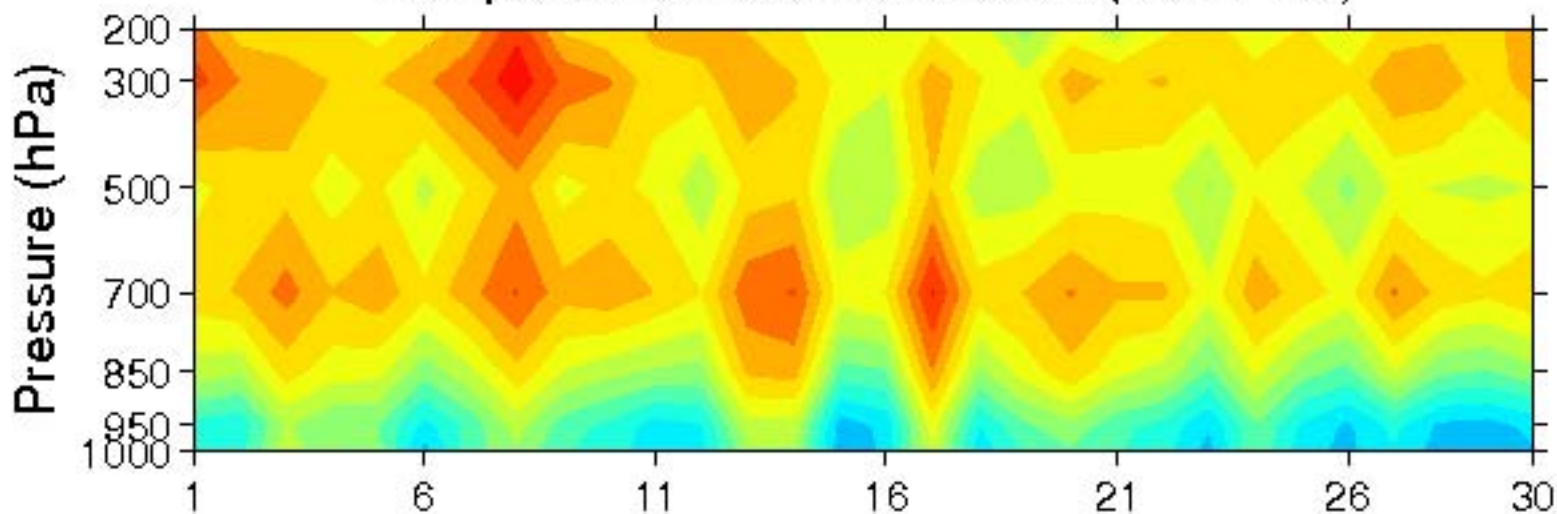




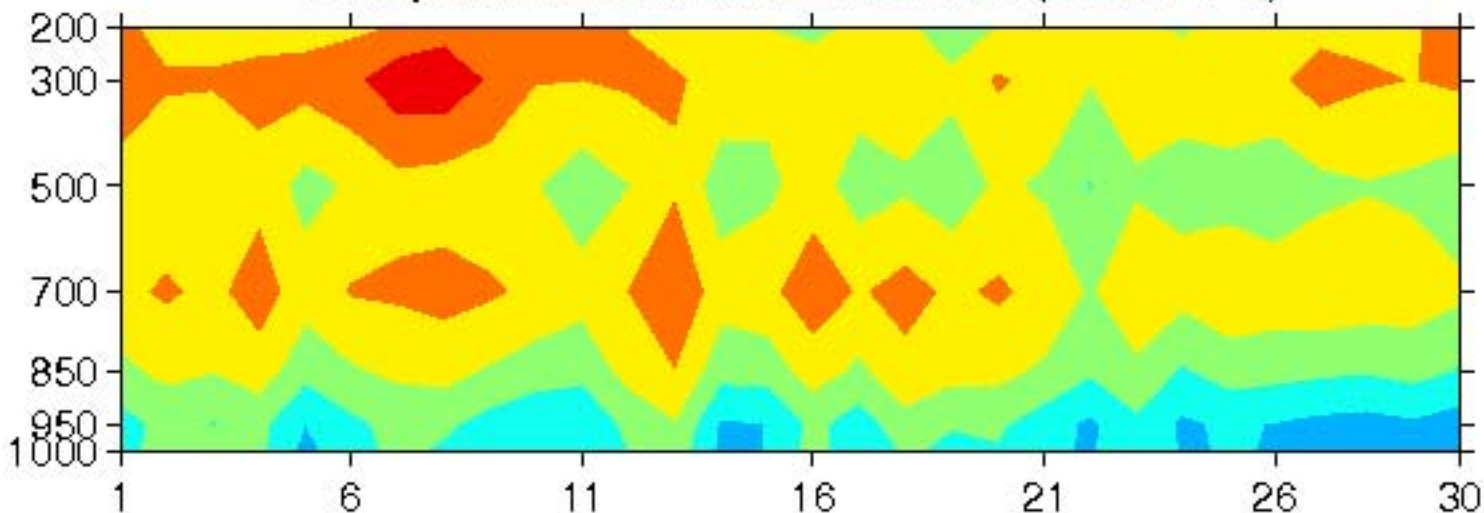
Temperature Mean Difference (24 Hr FC)



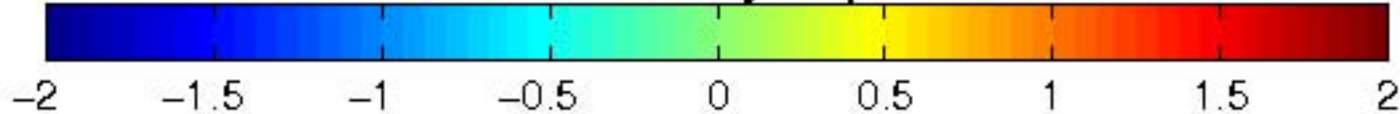
Temperature Mean Difference (48 Hr FC)



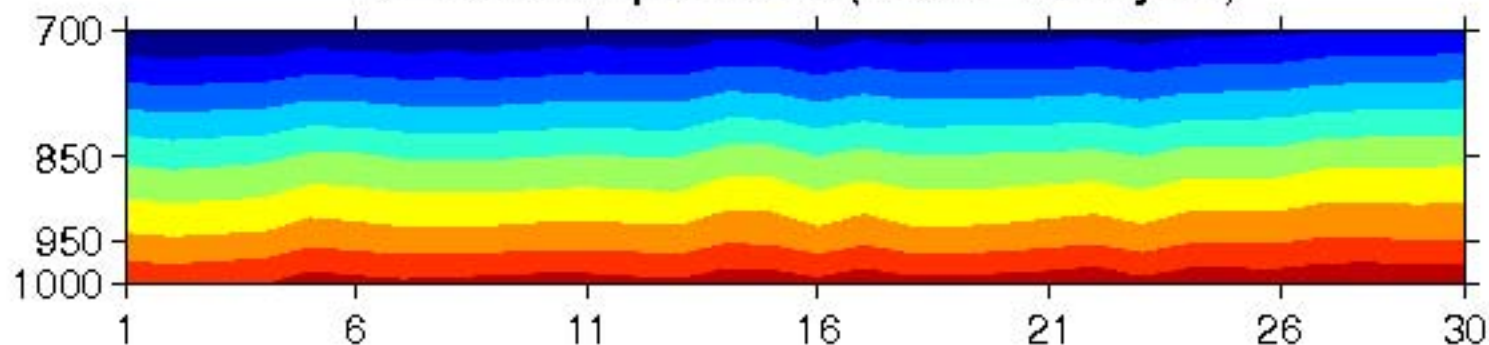
Temperature Mean Difference (72 Hr FC)



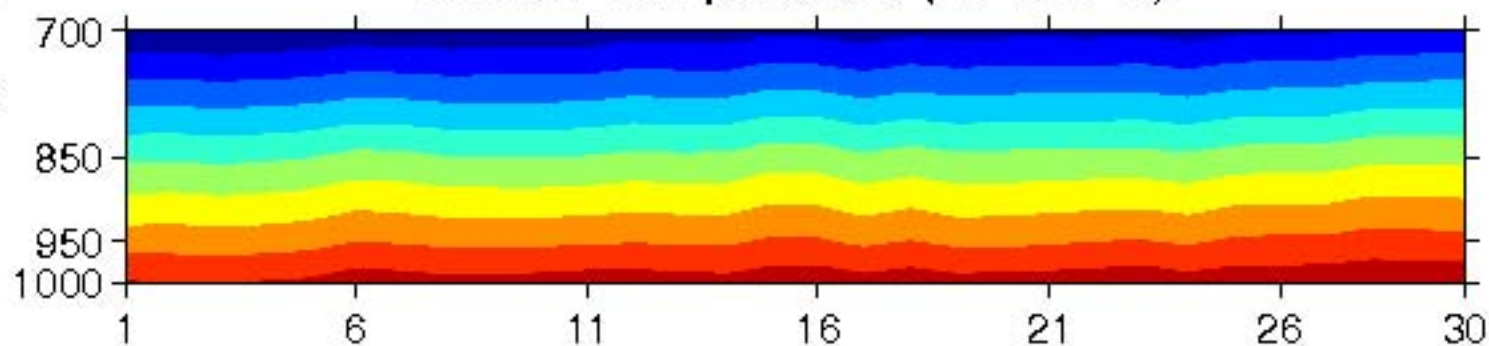
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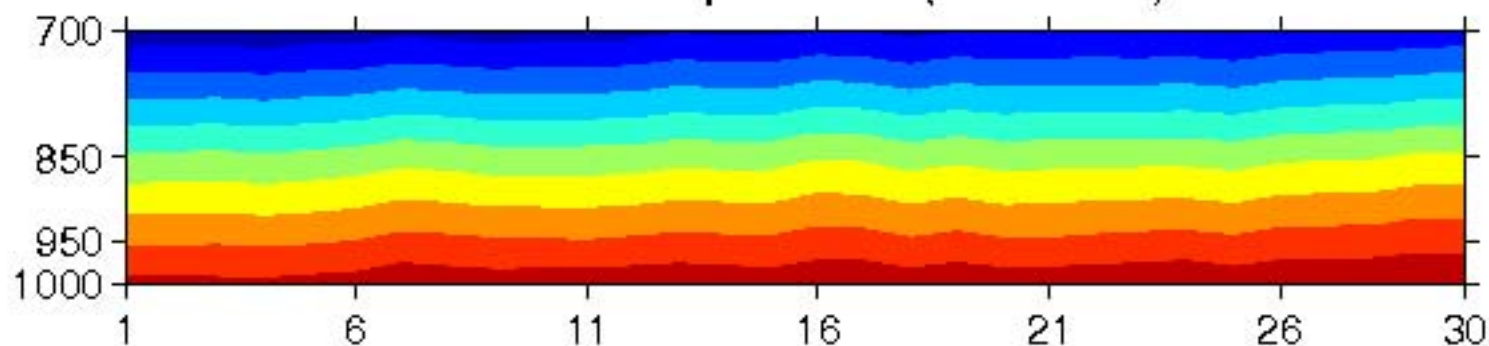
MEAN Temperature (NCEP Analysis)



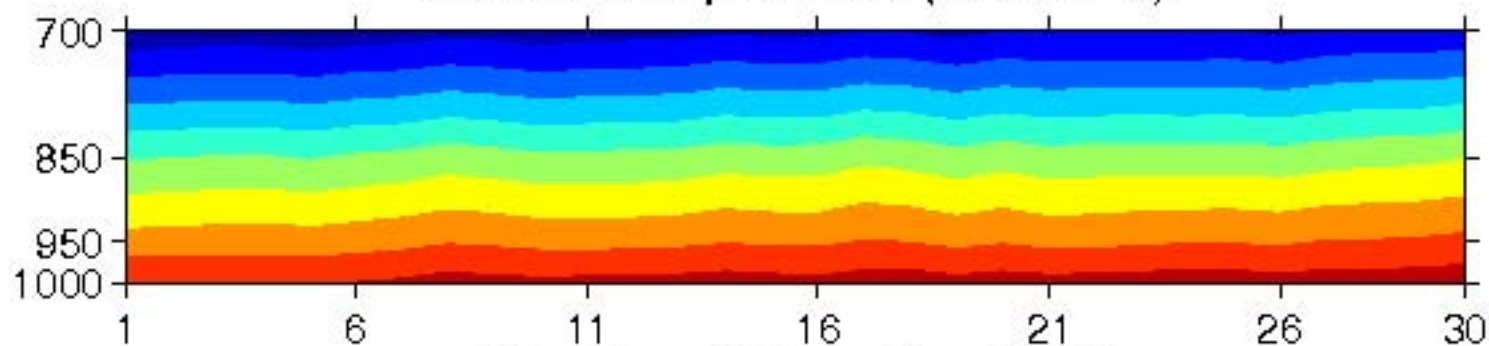
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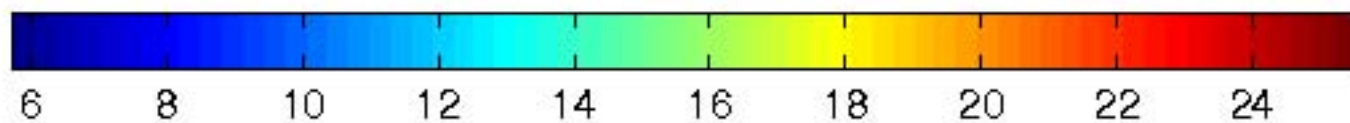
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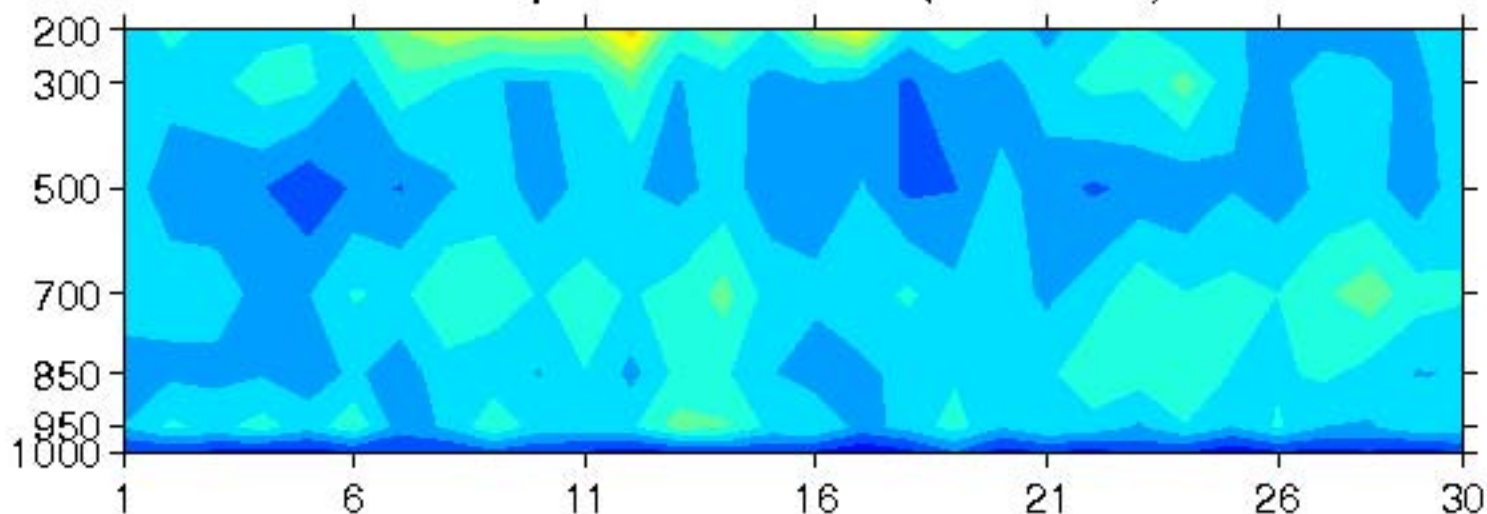
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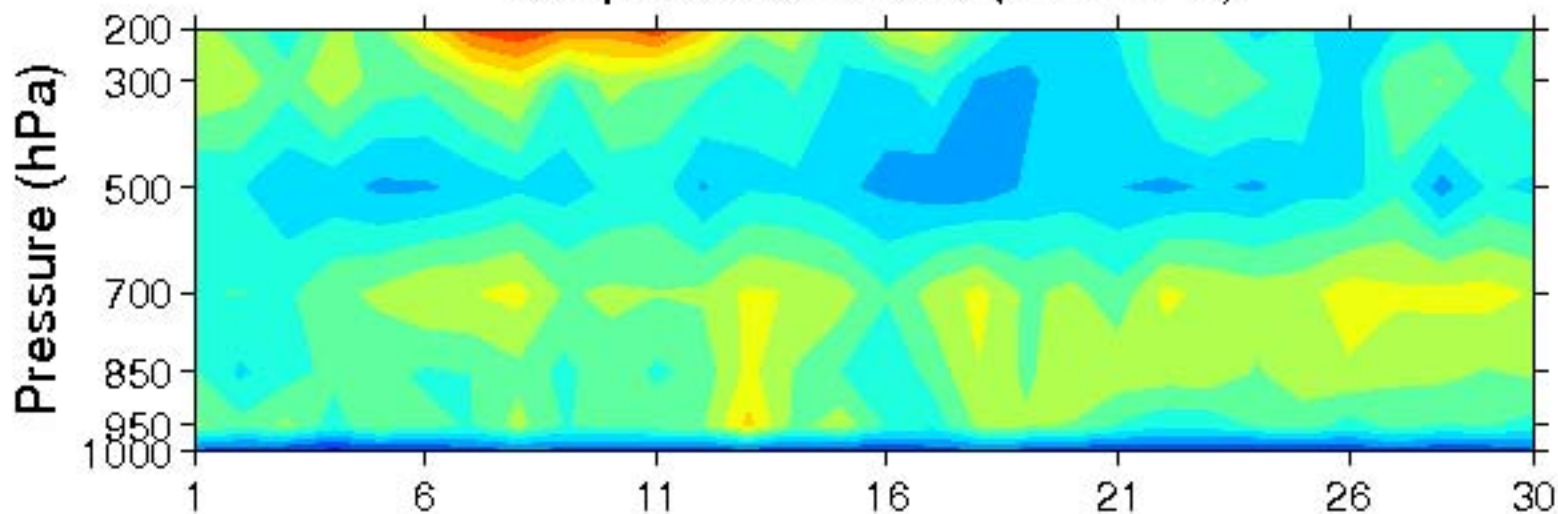
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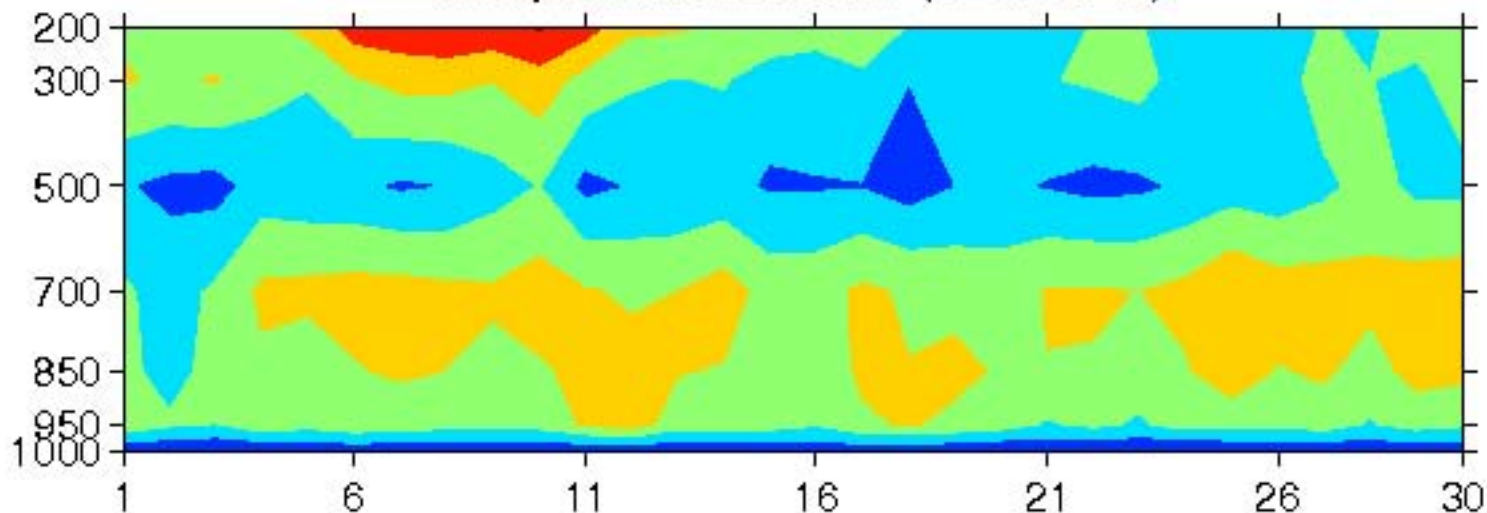
Temperature RMSD (24 Hr FC)



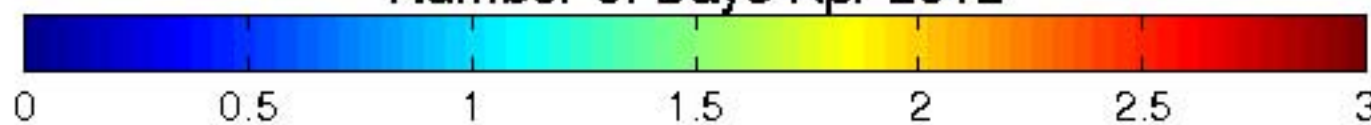
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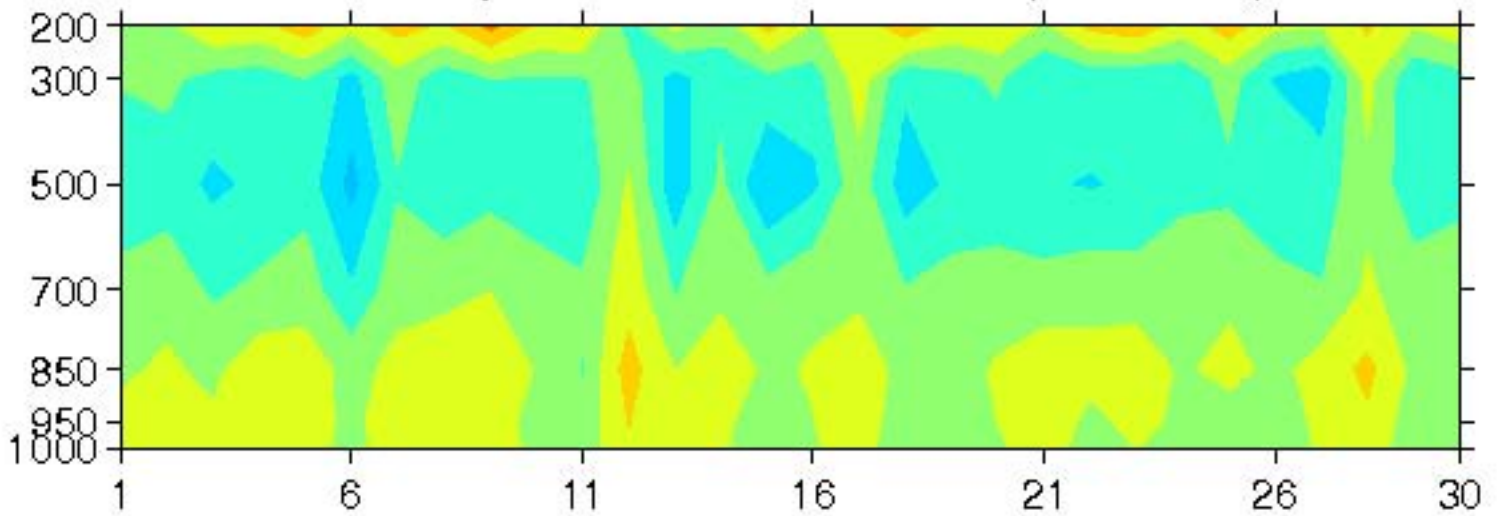
Temperature RMSD (72 Hr FC)



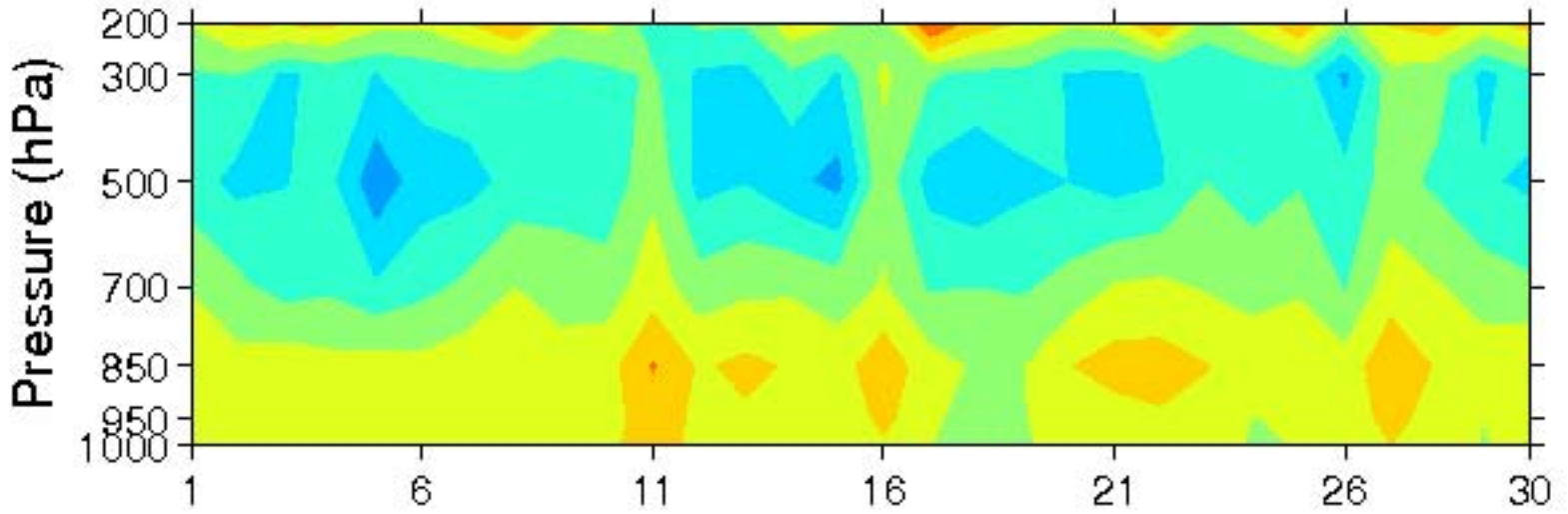
Number of Days Apr 2012



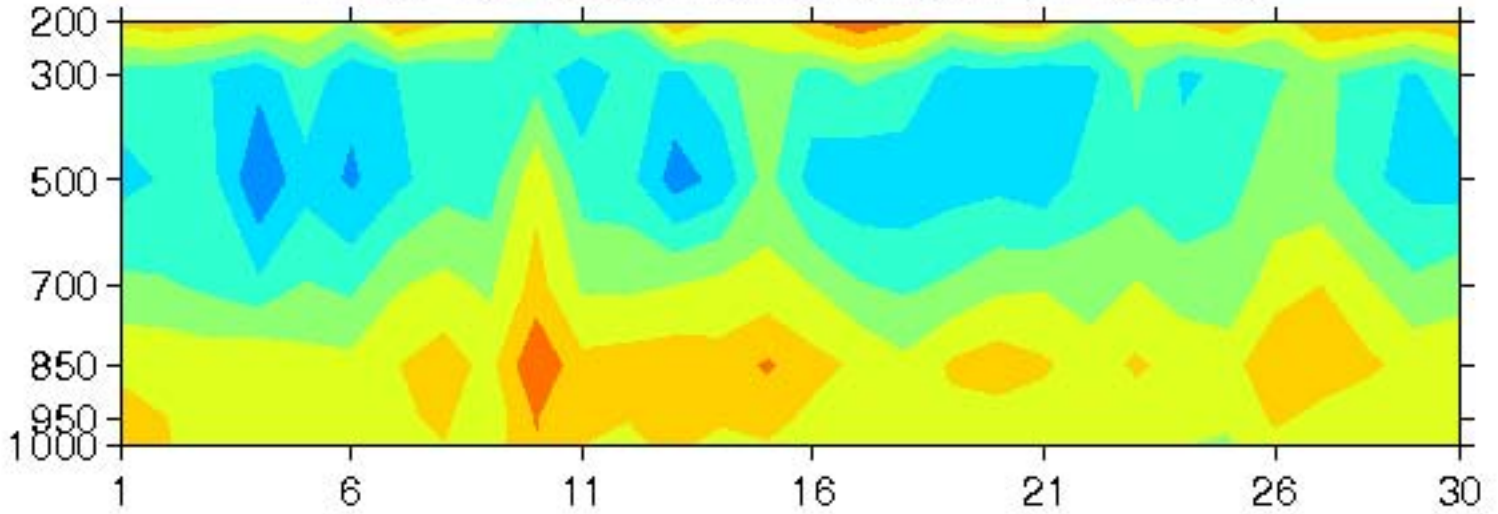
Wind Speed Mean Difference (24 Hr FC)



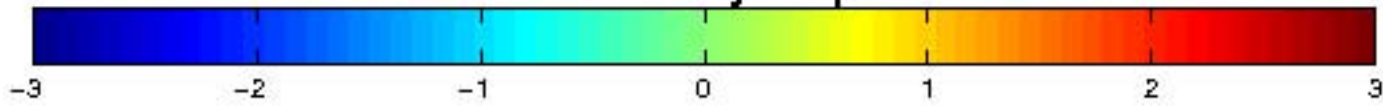
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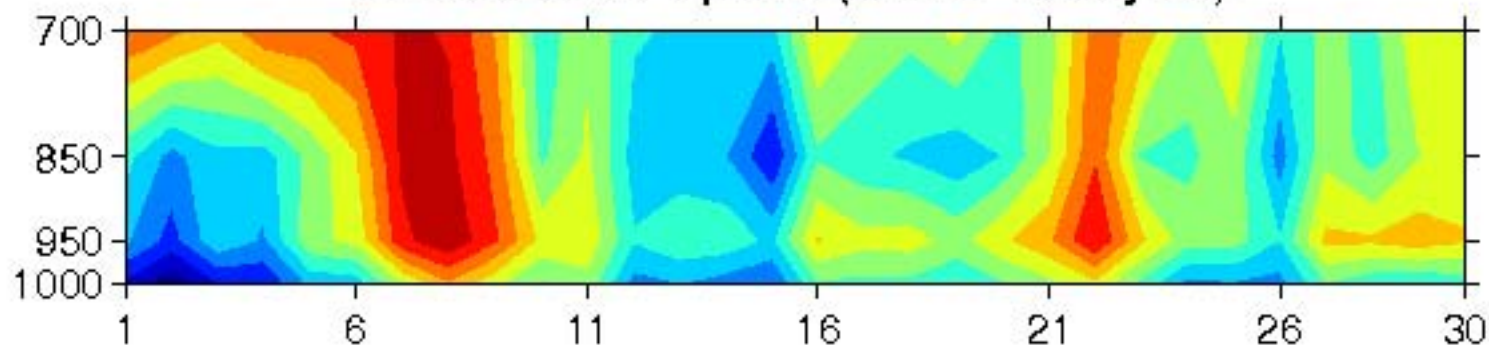
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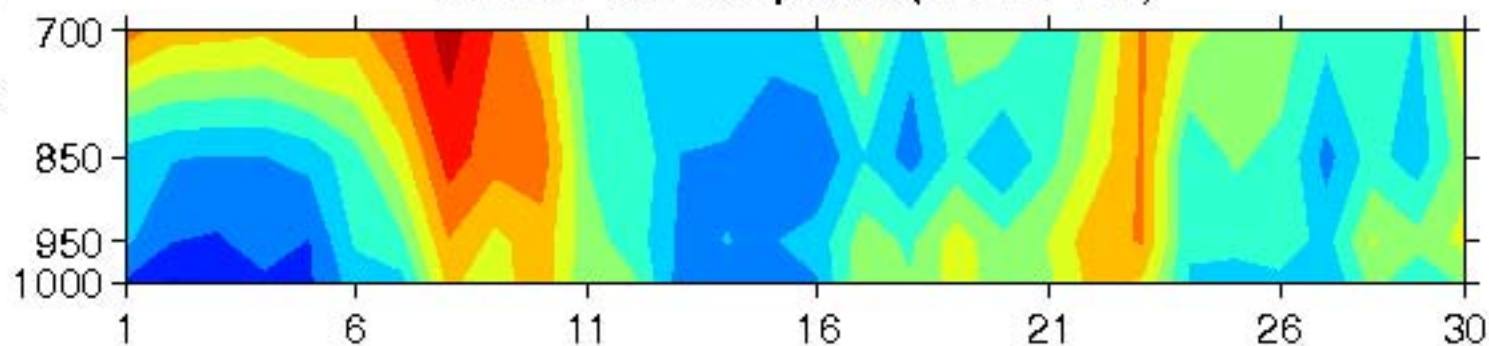
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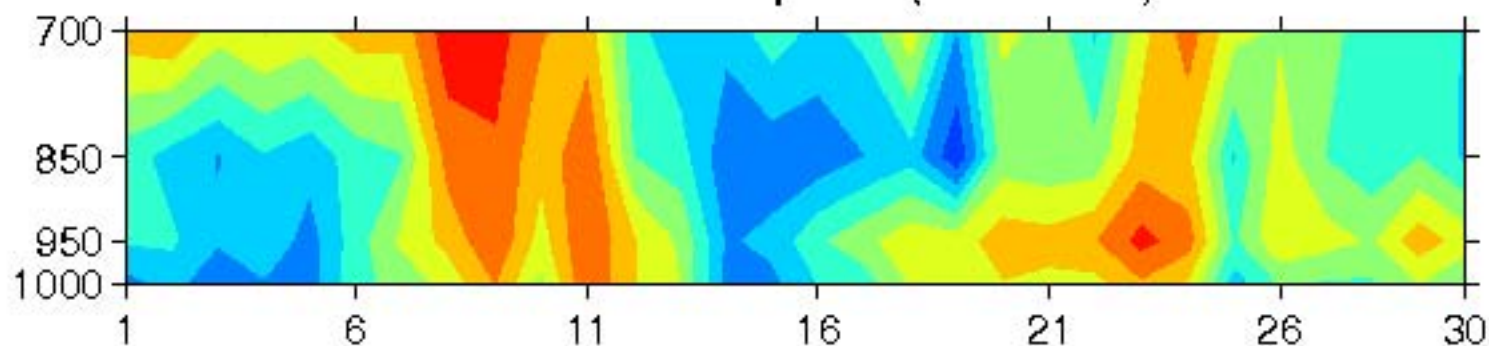
MEAN Wind Speed (NCEP Analysis)



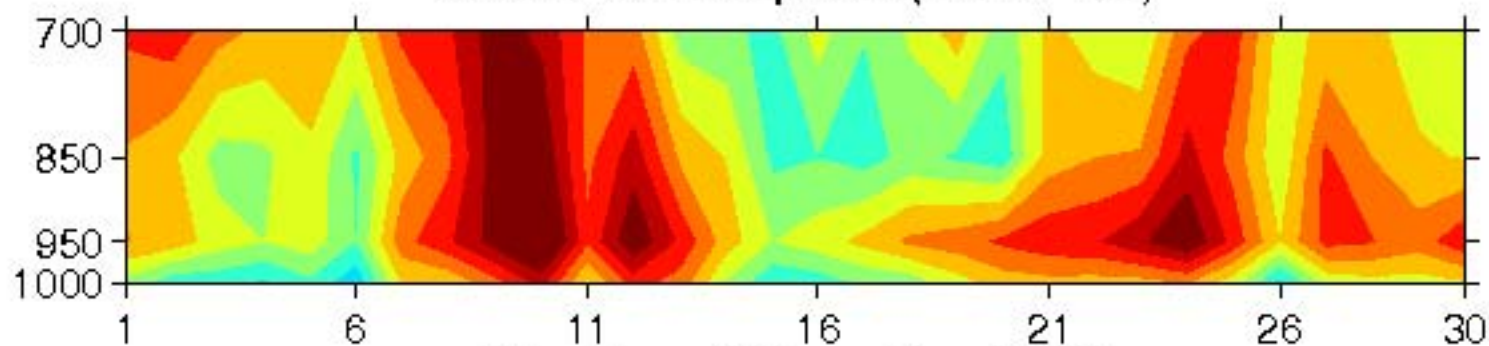
MEAN Wind Speed (24 Hr FC)



MEAN Wind Speed (48 Hr FC)



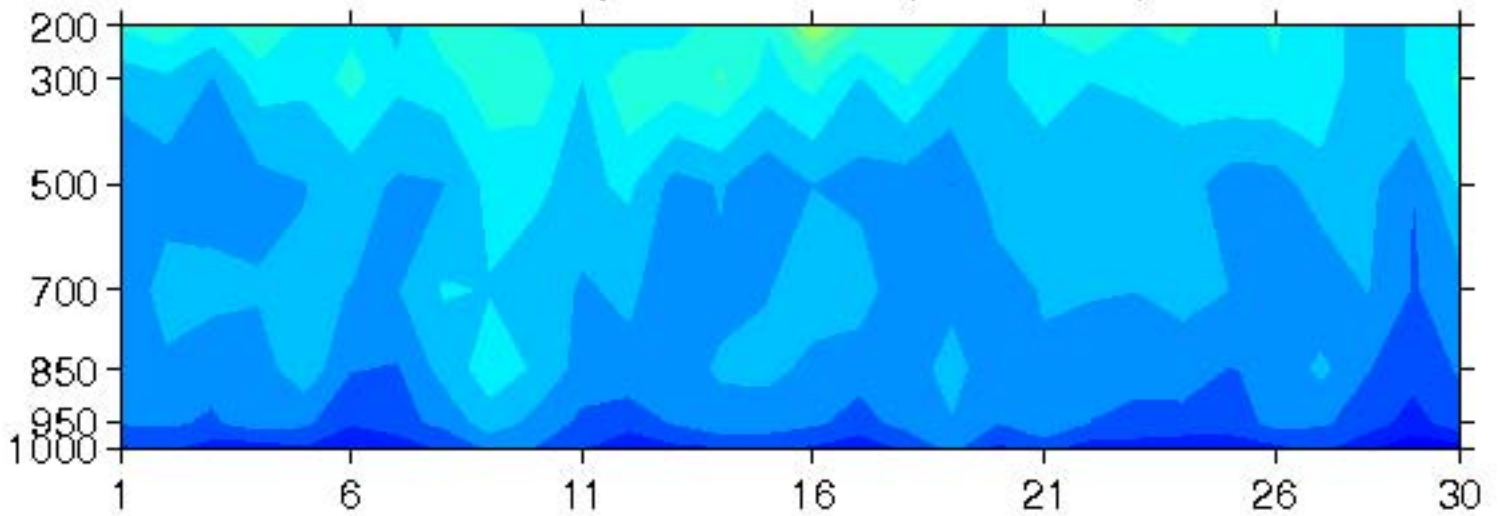
MEAN Wind Speed (72 Hr FC)



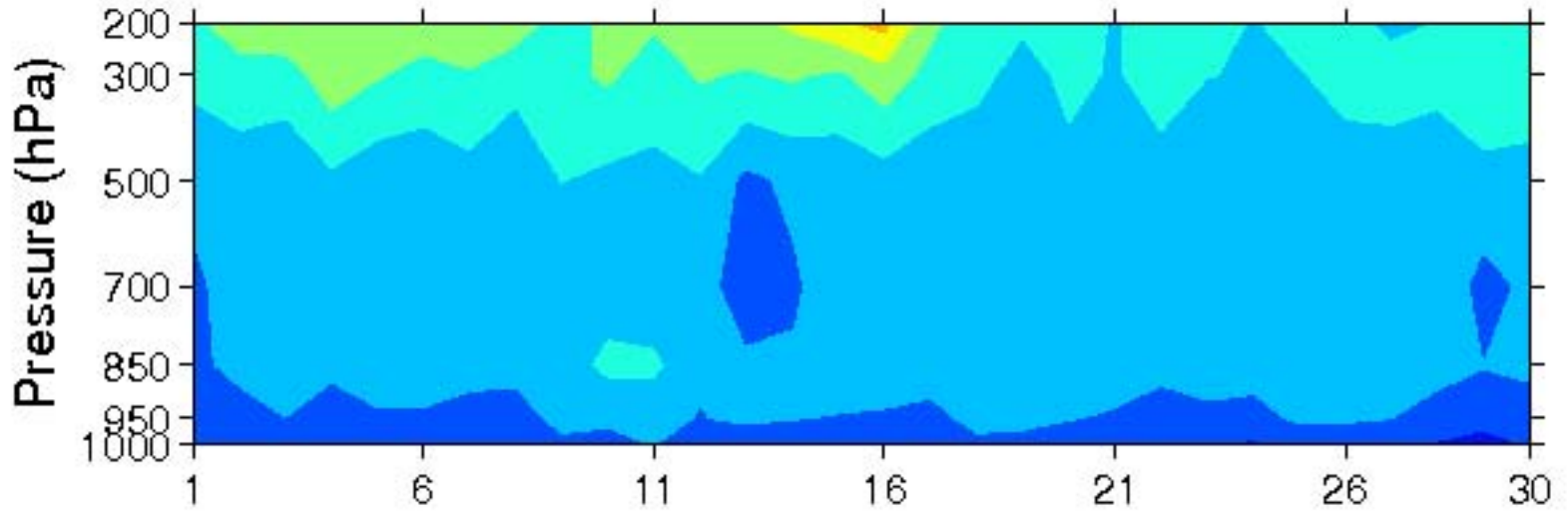
Number of Days Apr 2012



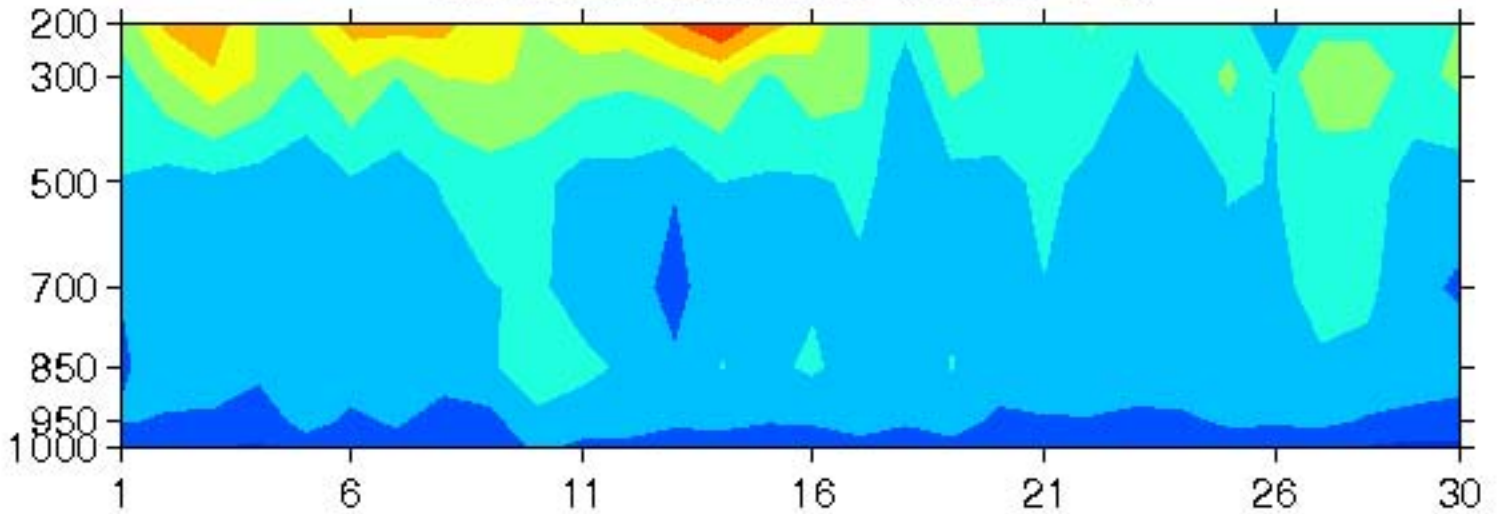
Wind Speed RMSD (24 Hr FC)



Wind Speed RMSD (48 Hr FC)



Wind Speed RMSD (72 Hr FC)



Number of Days Apr 2012

