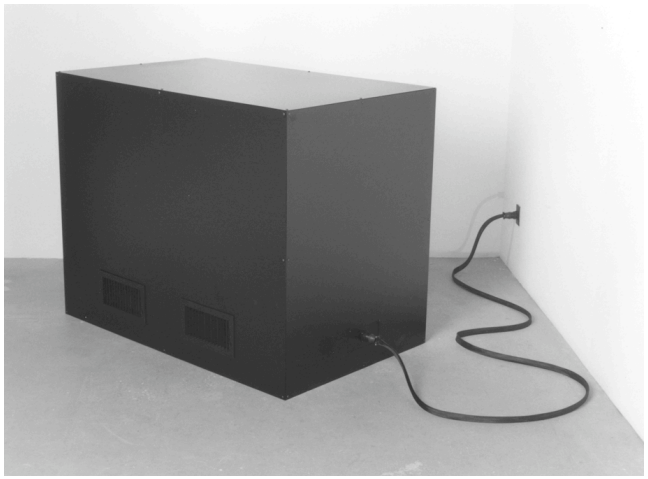
Additional NARCCAP Results

Melissa Bukovsky

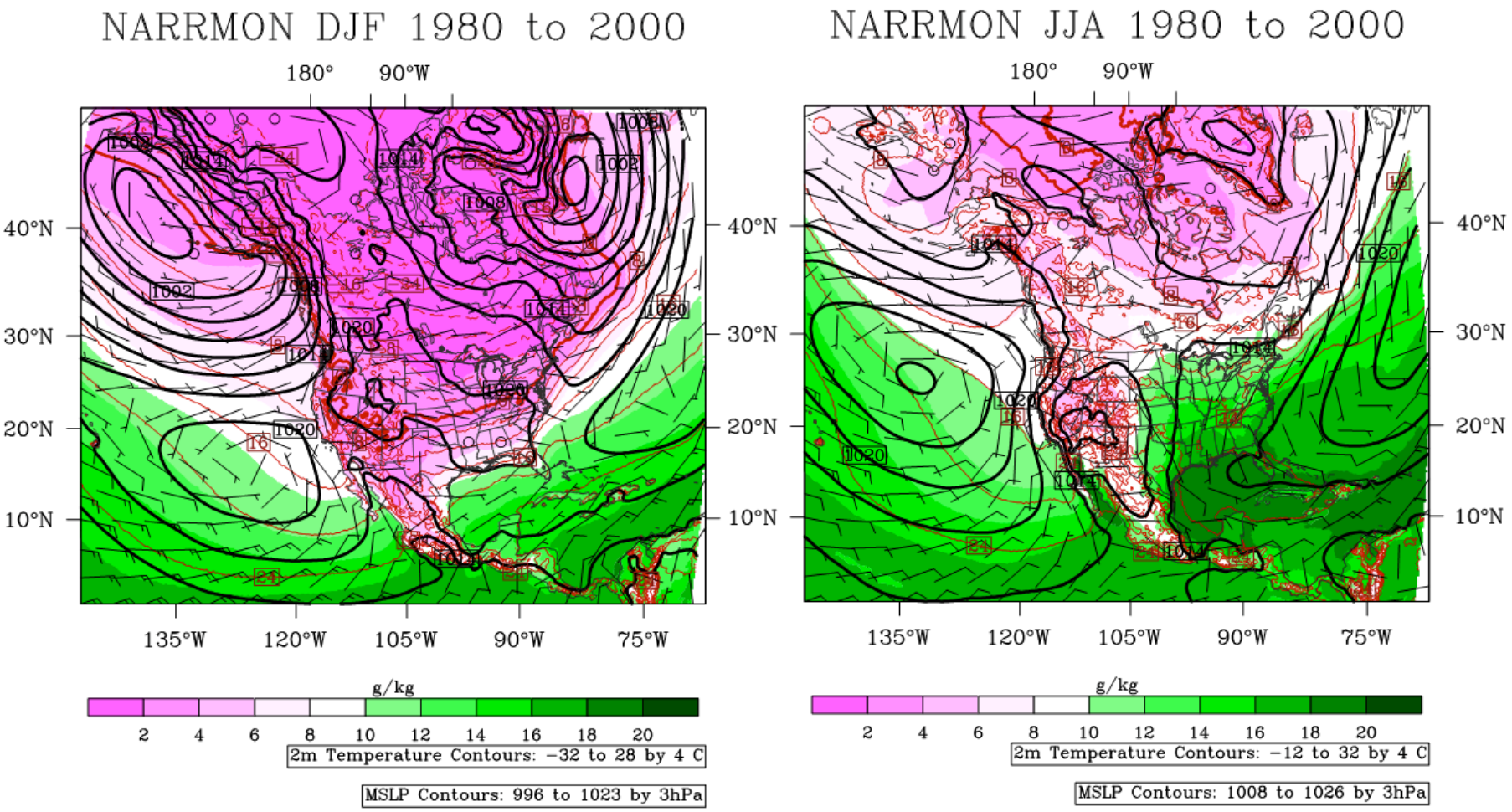
NARCCAP

No Model Is Perfect

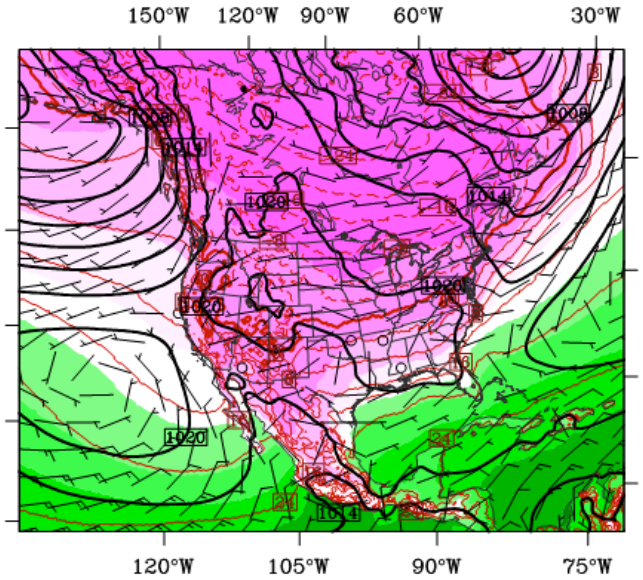
Some Models Are Useful



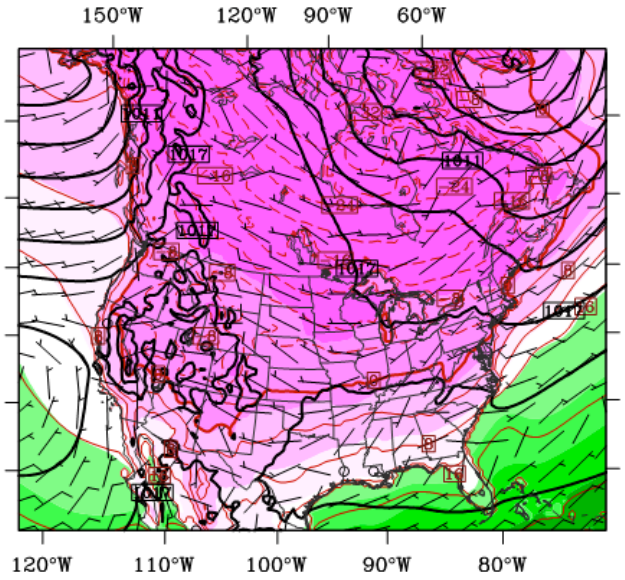
Surface Overview



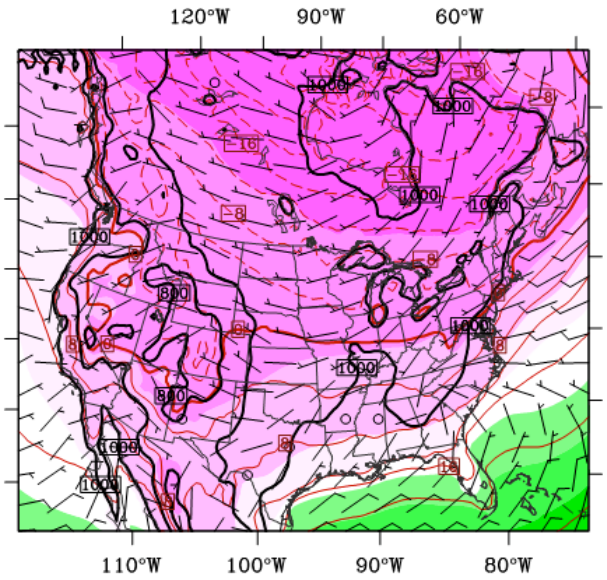
NARRMON DJF 1980 to 2000



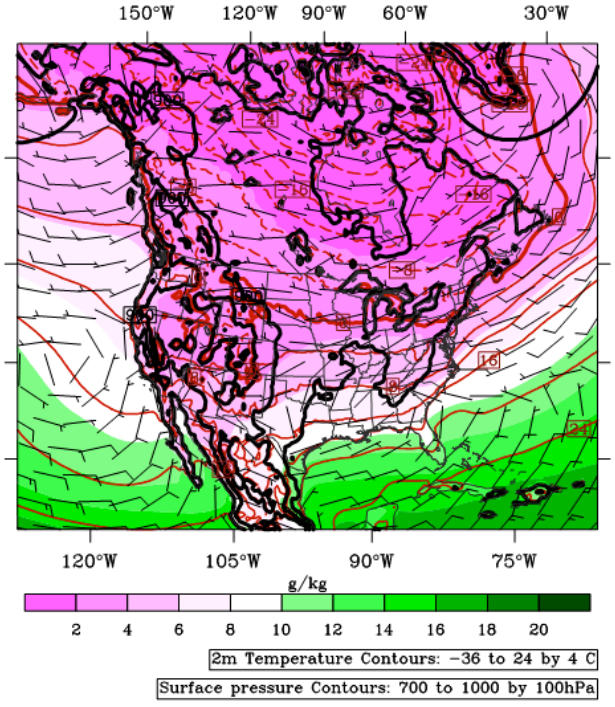
CRCM ncep DJF 1979 to 2004



ECPC ncep DJF 1979 to 2004



HRM3 ncep DJF 1979 to 2004



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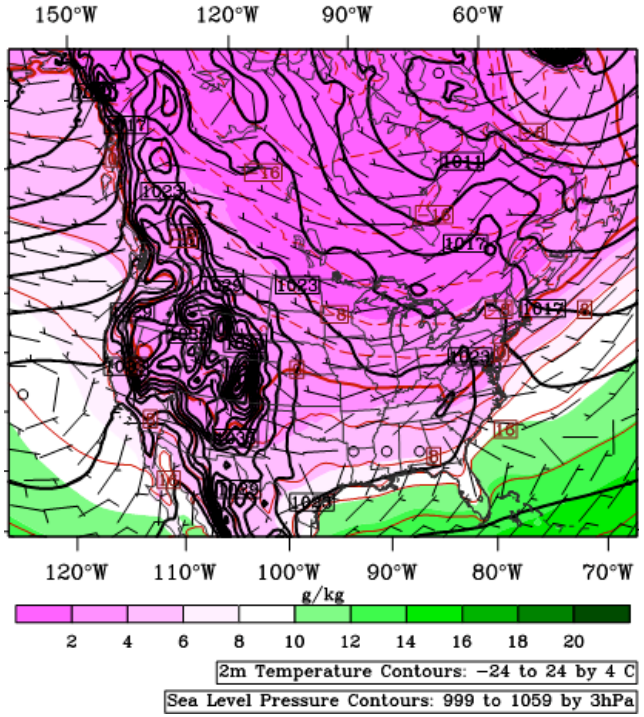
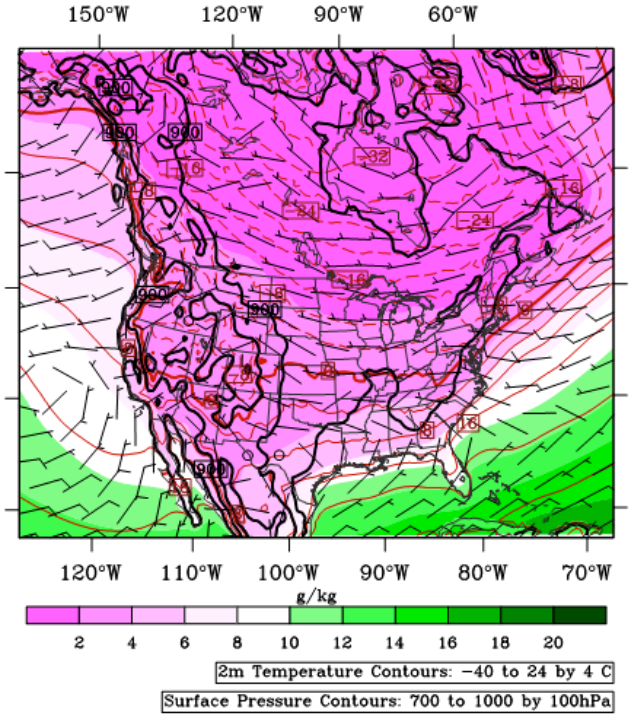
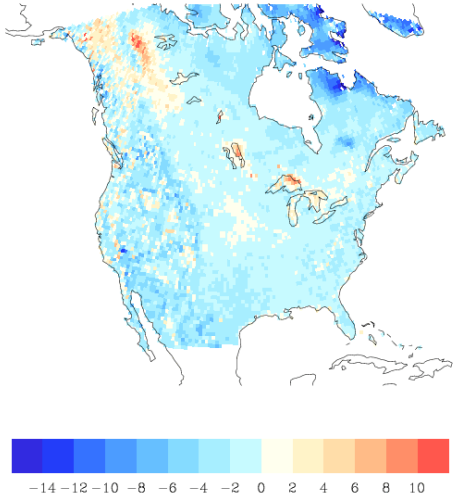


WRFP ncep DJF 1979 to 2004

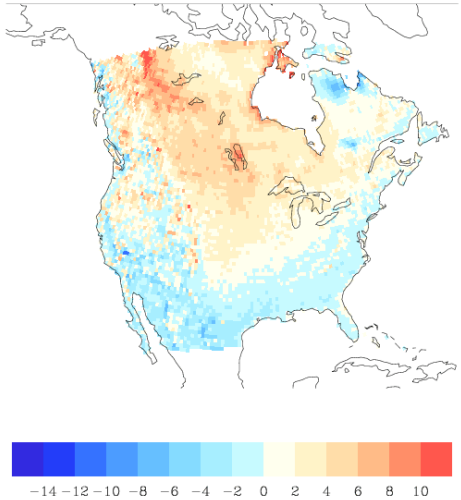


NCEP Driven Winter Temperature Bias

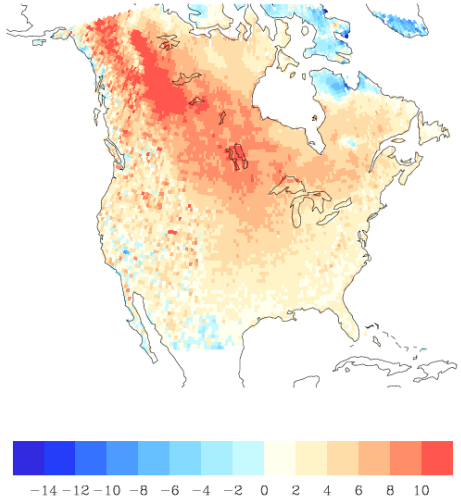
CRCM-UDEL Winter Temps Regrided .5 degree



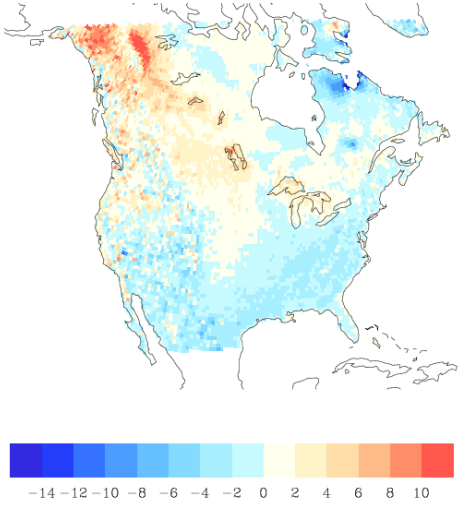
ECPC-UDEL Winter Temps Regrided .5 degree



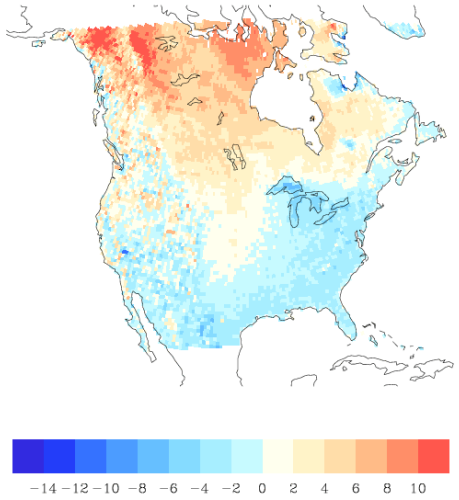
HRM3-UDEL Winter Temps Regrided .5 degree



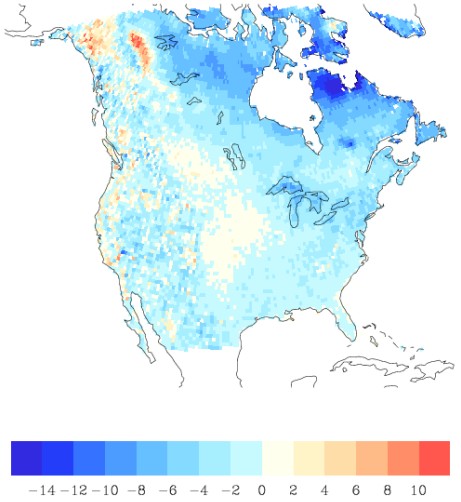
MM5I-UDEL Winter Temps Regrided .5 degree



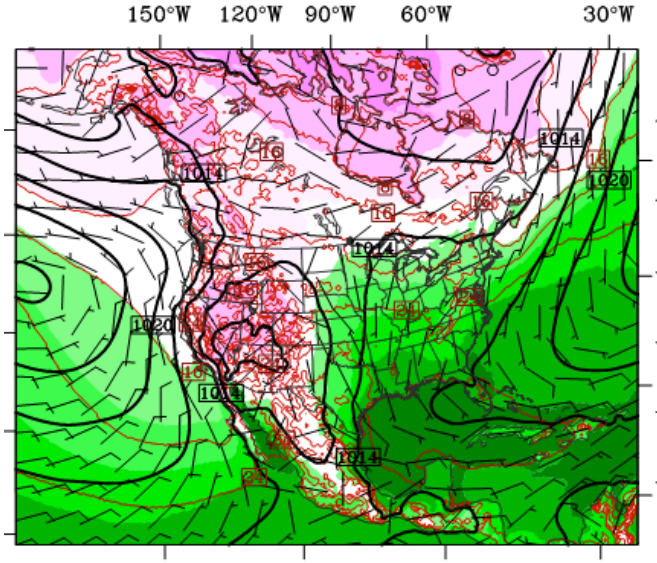
RCM3-UDEL Winter Temps Regrided .5 degree



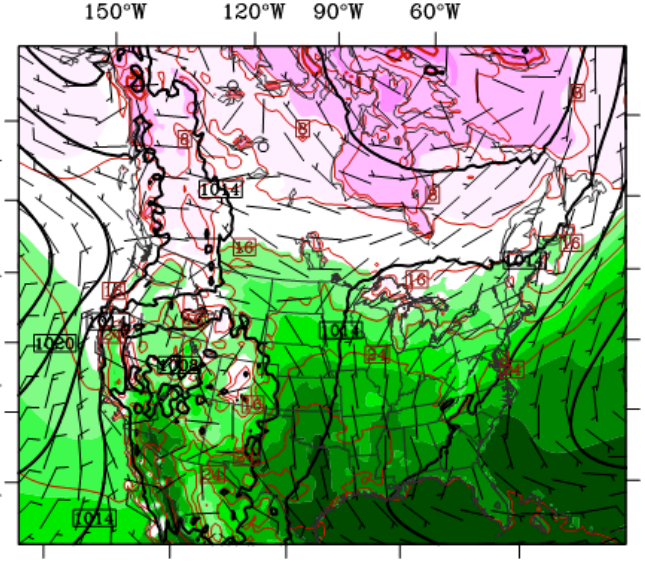
WRFP-UDEL Winter Temps Regrided .5 degree



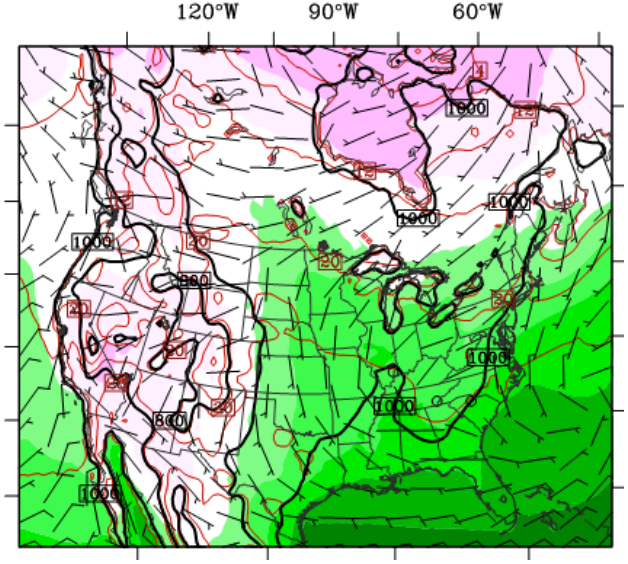
NARRMON JJA 1980 to 2000



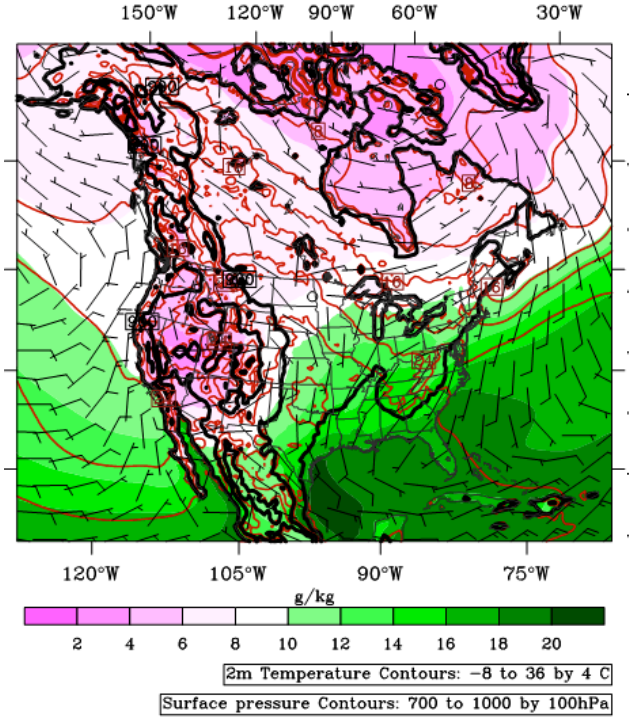
CRCM ncep JJA 1979 to 2004



ECPC ncep JJA 1979 to 2004



HRM3 ncep JJA 1979 to 2004



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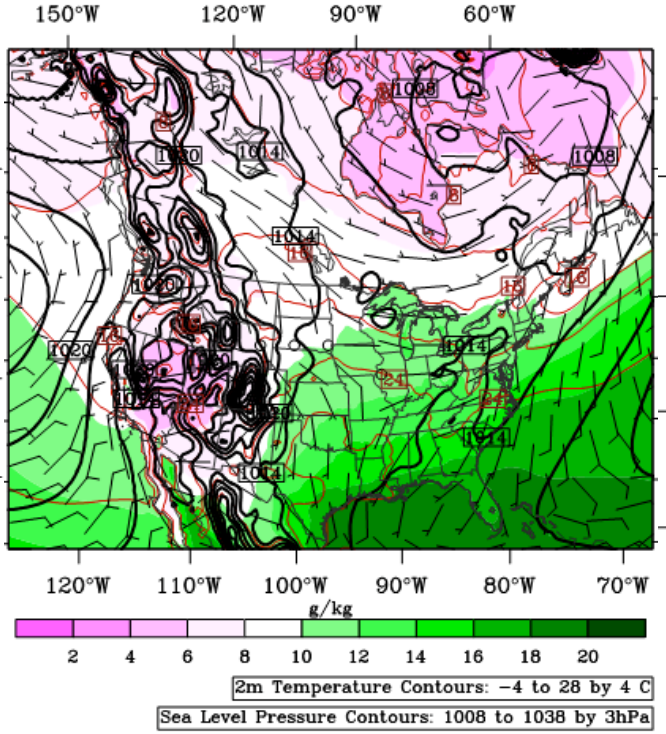
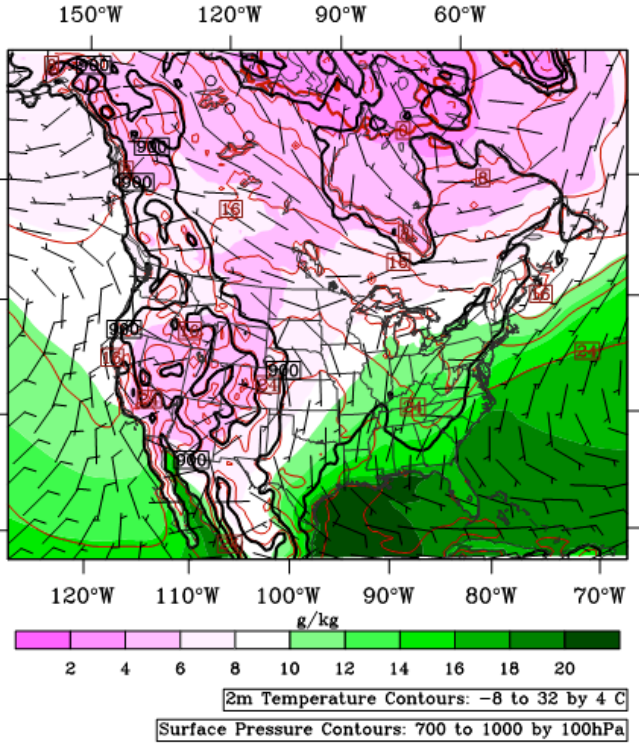
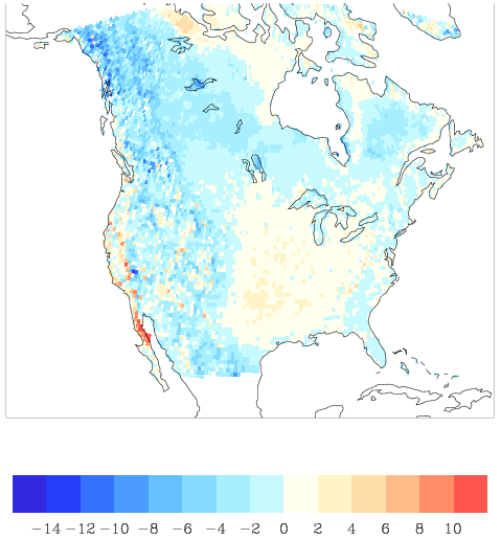


WRFP ncep JJA 1979 to 2004

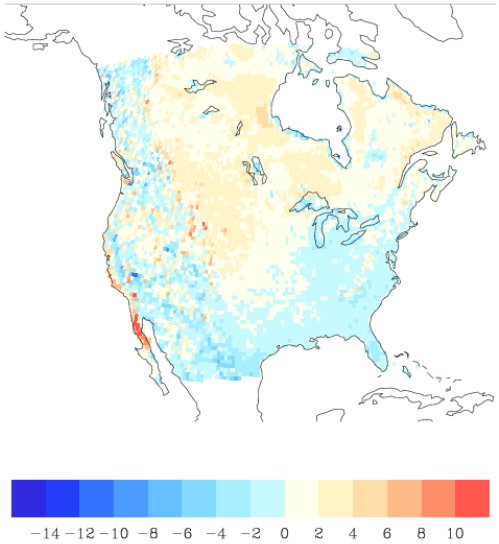


NCEP Driven Summer Temperature Bias

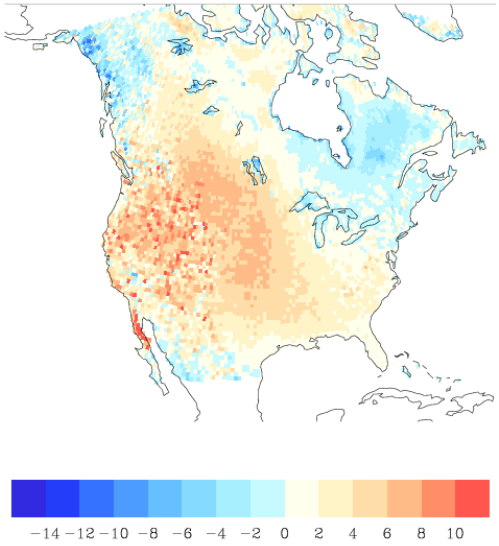
CRCM-UDEL Summer Temps Regrided .5 degree



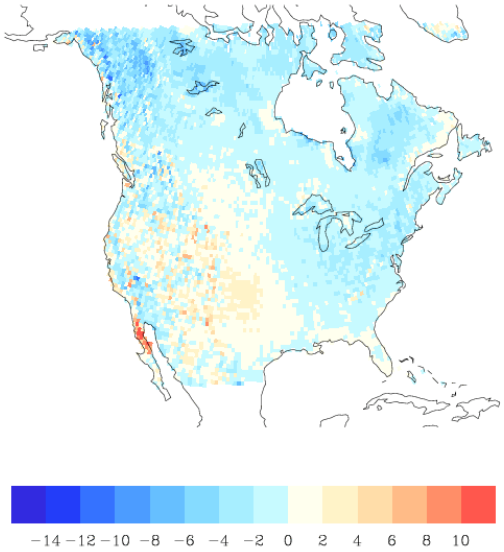
ECPC-UDEL Summer Temps Regrided .5 degree



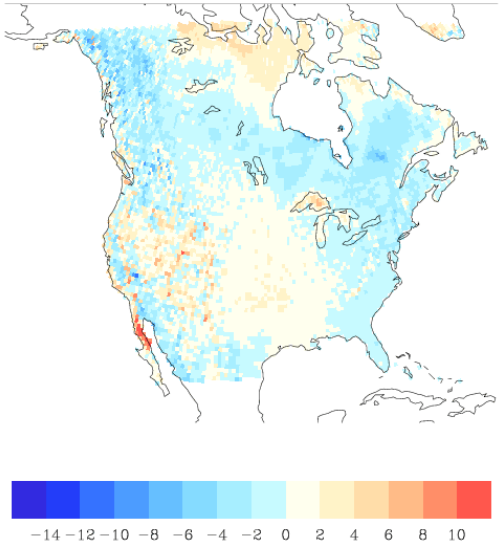
HRM3-UDEL Summer Temps Regrided .5 degree



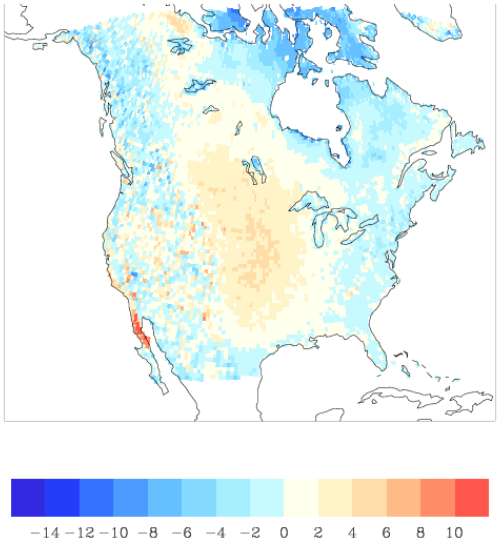
MM5I-UDEL Summer Temps Regrided .5 degree



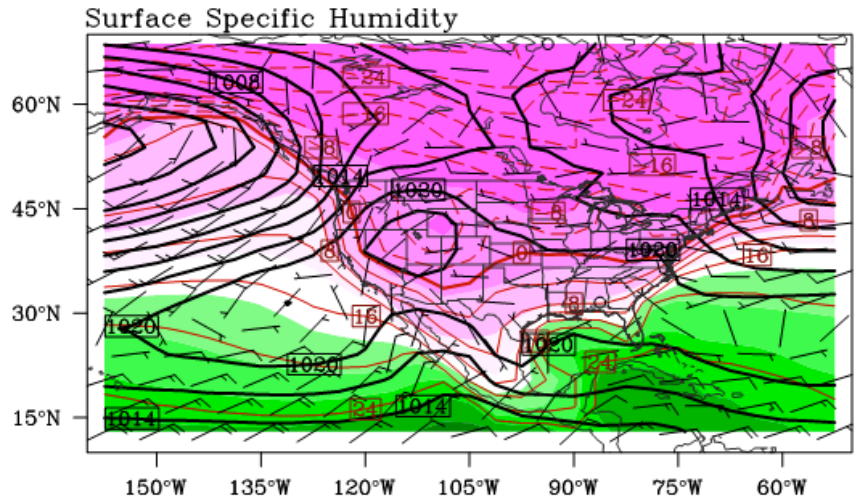
RCM3-UDEL Summer Temps Regrided .5 degree



WRFP-UDEL Summer Temps Regrided .5 degree

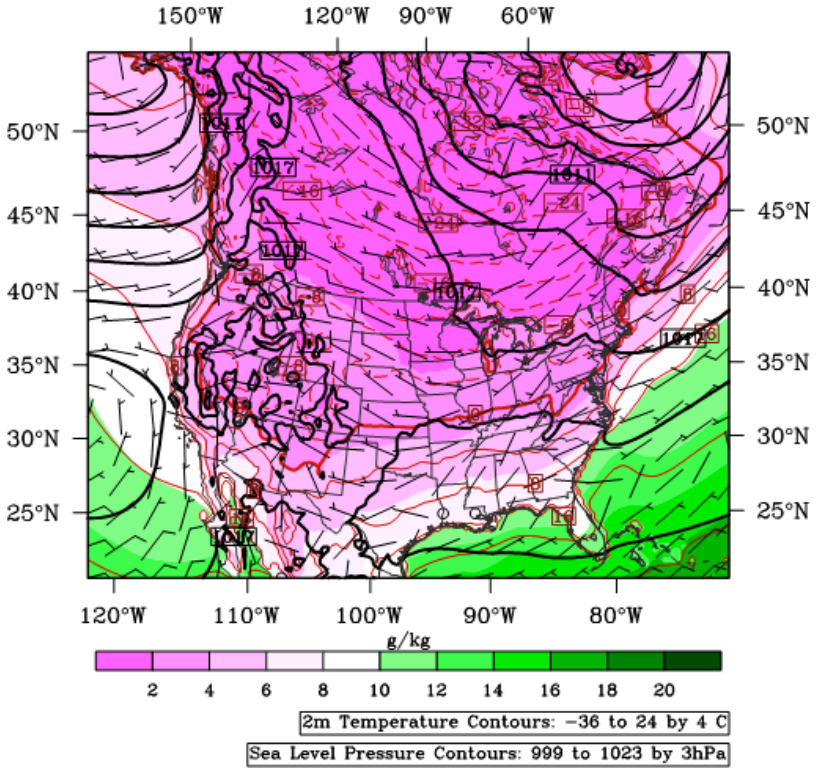


cgcm3 1 1980 to 1999: mons 01,02,12

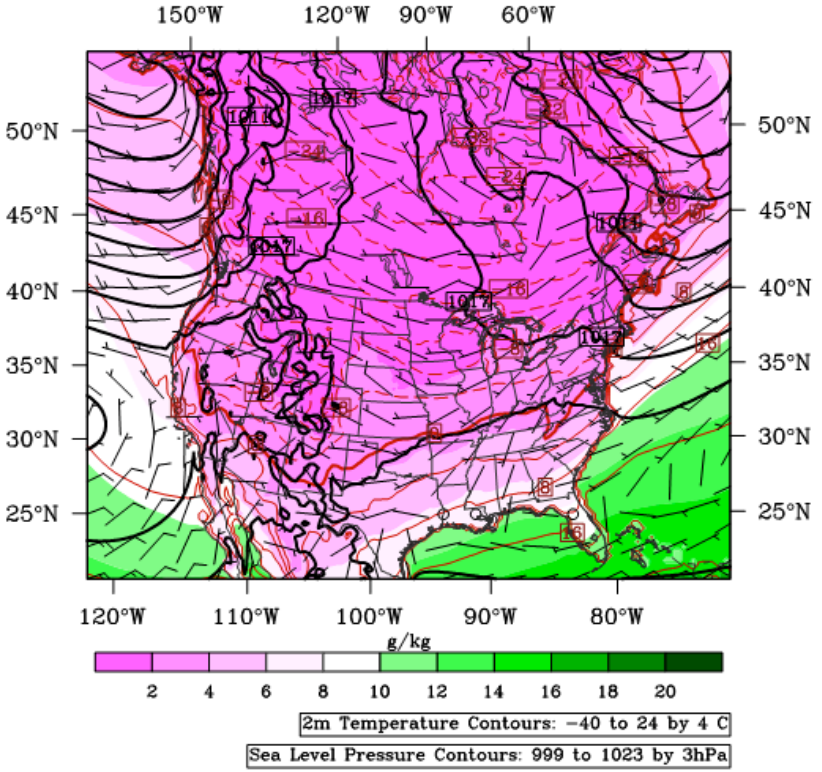


CGCM, CRCM-ncep, CRCM-cgcm Winter

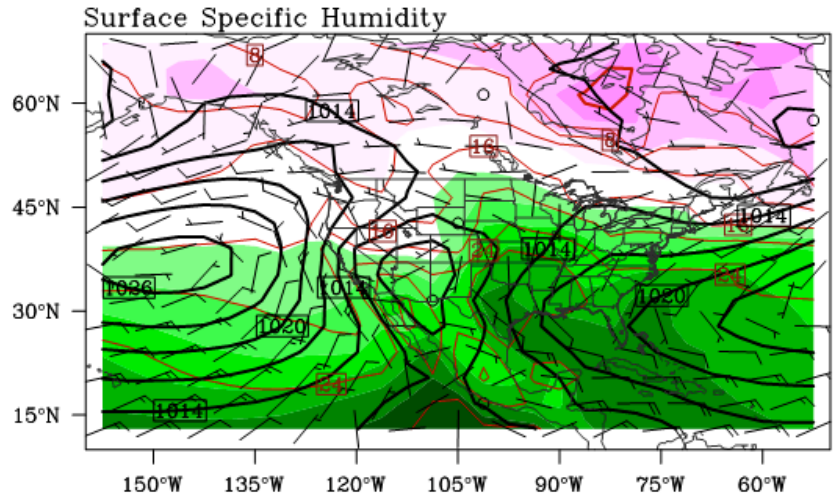
CRCM ncep DJF 1979 to 2004



CRCM cgcm3−current DJF 1971 to 2000

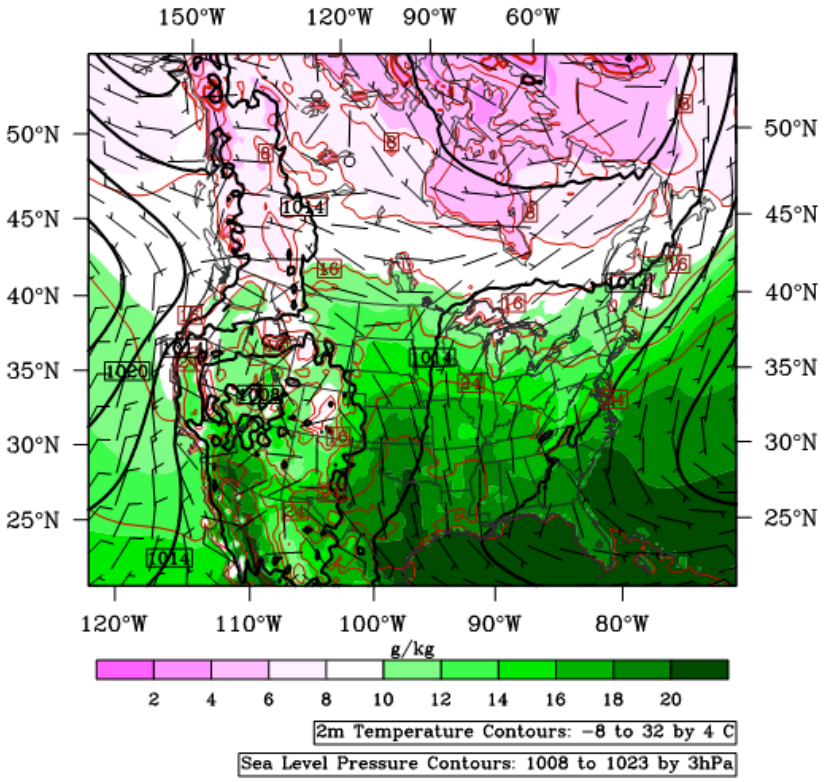


cgcm3 1 1980 to 1999: mons 06,07,08

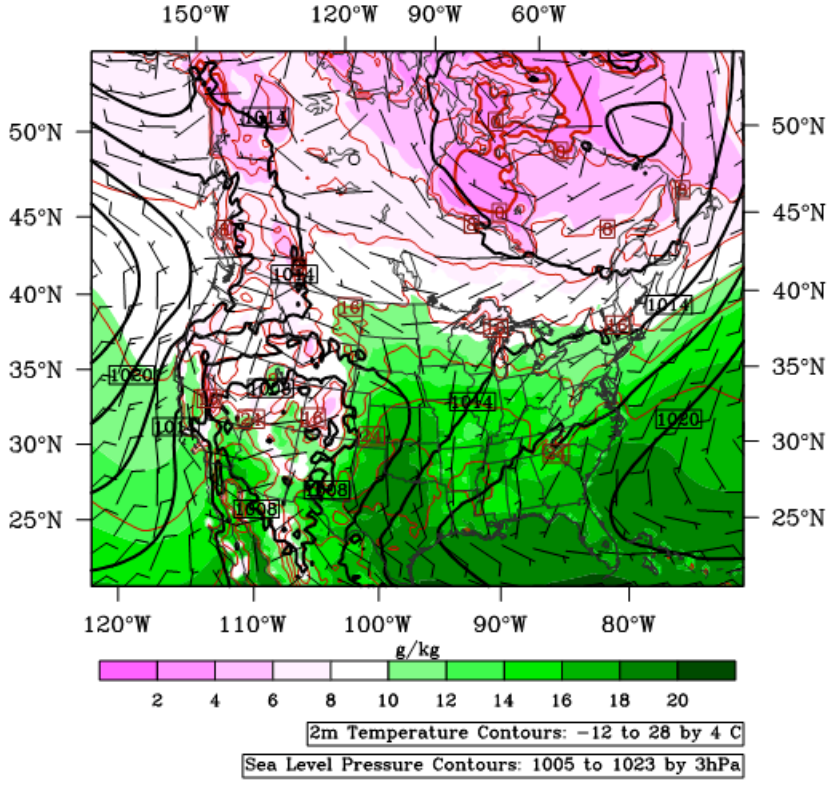


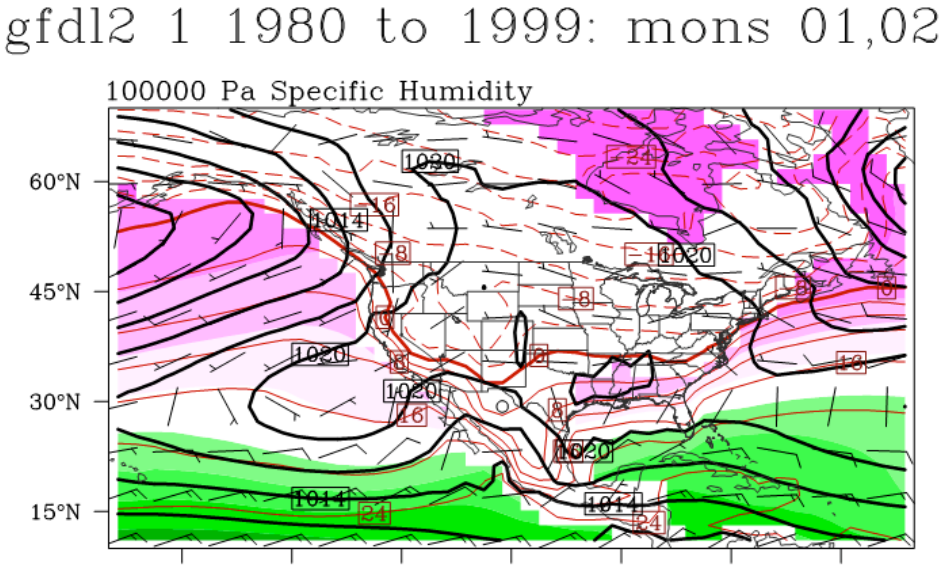
CGCM, CRCM-ncep, CRCM-cgcm Summer

CRCM ncep JJA 1979 to 2004

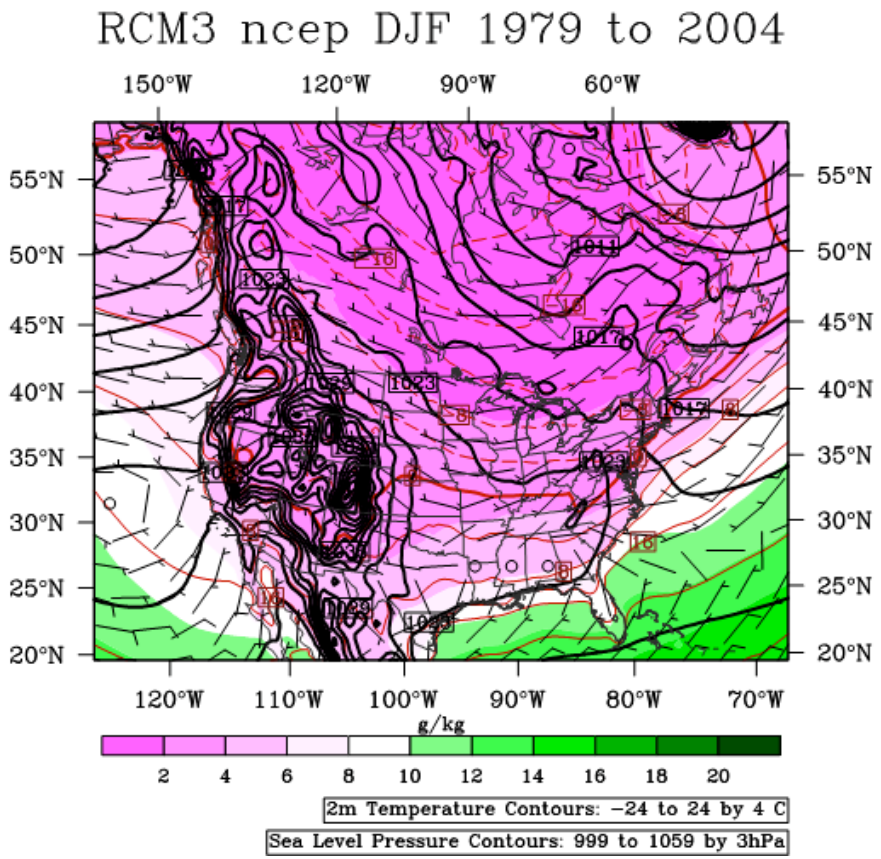


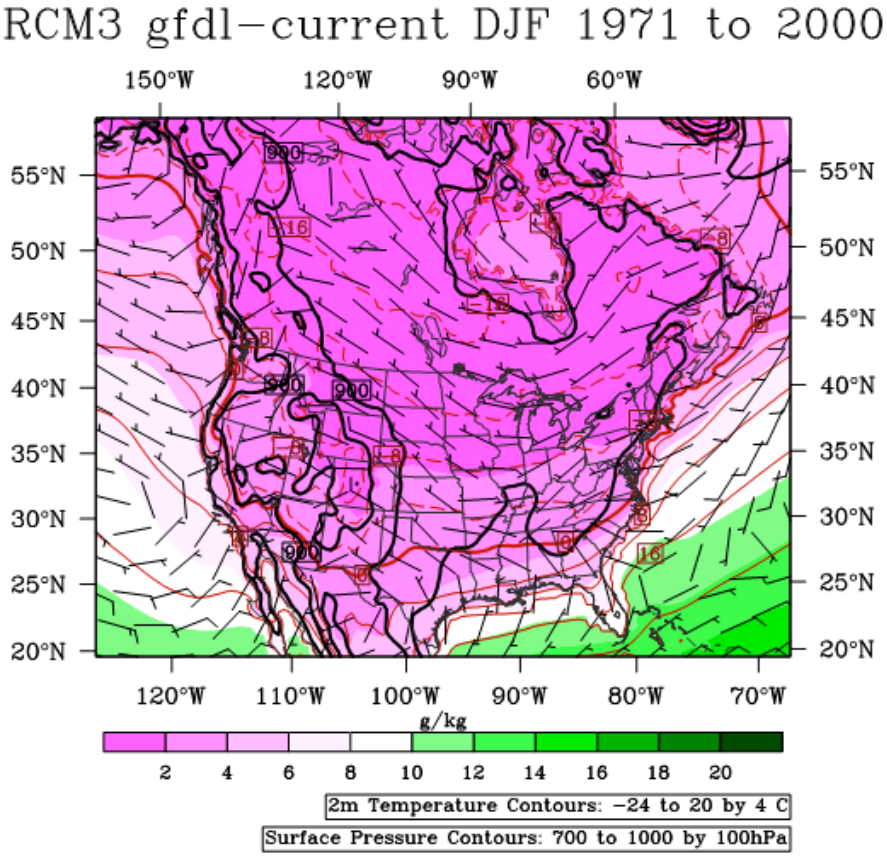
CRCM cgcm3−current JJA 1971 to 2000



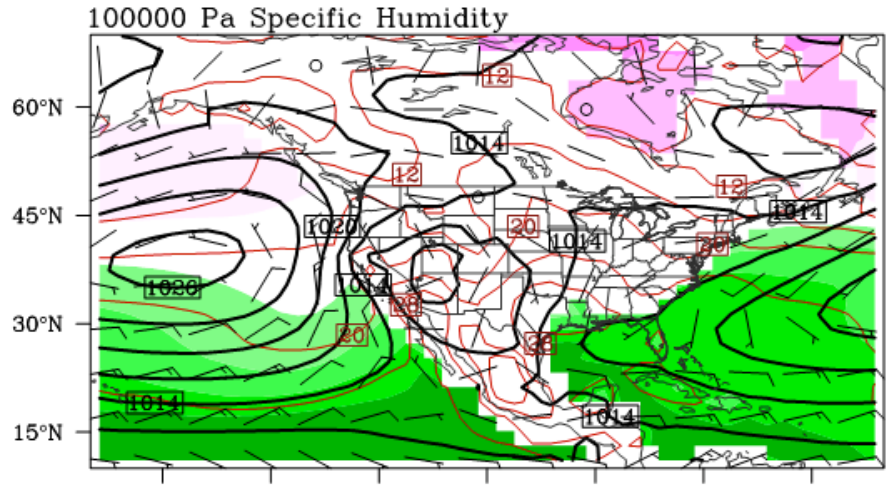


GFDL, RCM3-ncep, RCM3-gfdl Winter



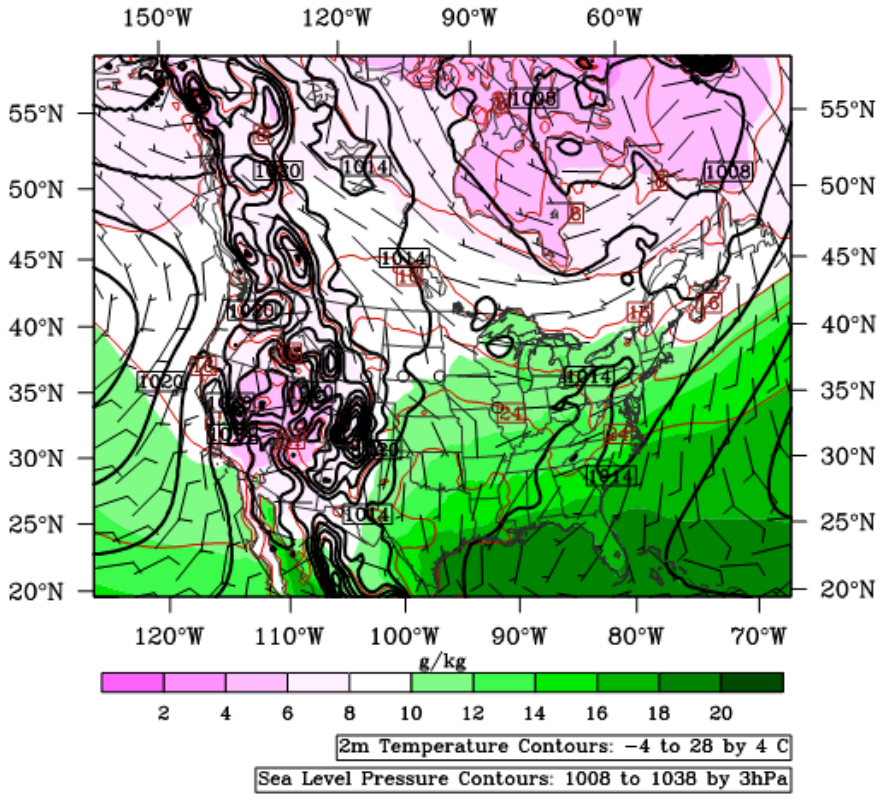


gfdl2 1 1980 to 1999: mons 06,07,08

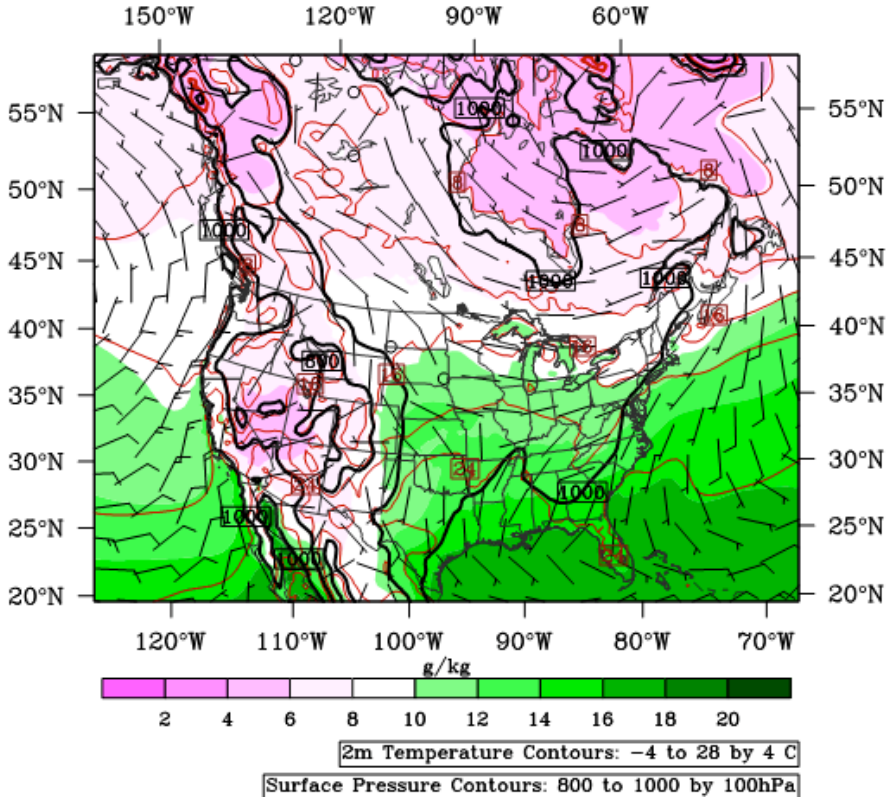


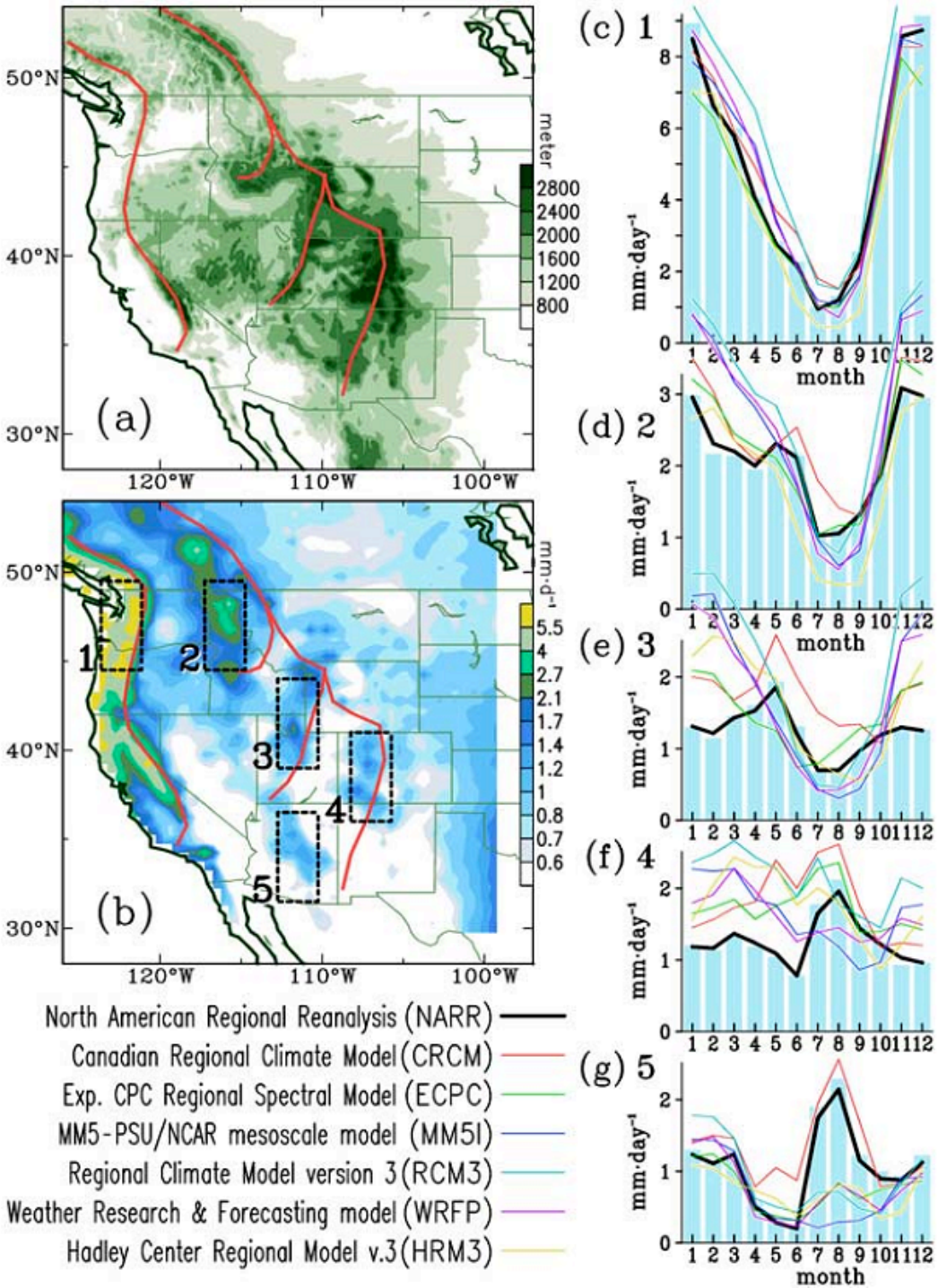
GFDL, RCM3-ncep, RCM3-gfdl Summer

RCM3 ncep JJA 1979 to 2004



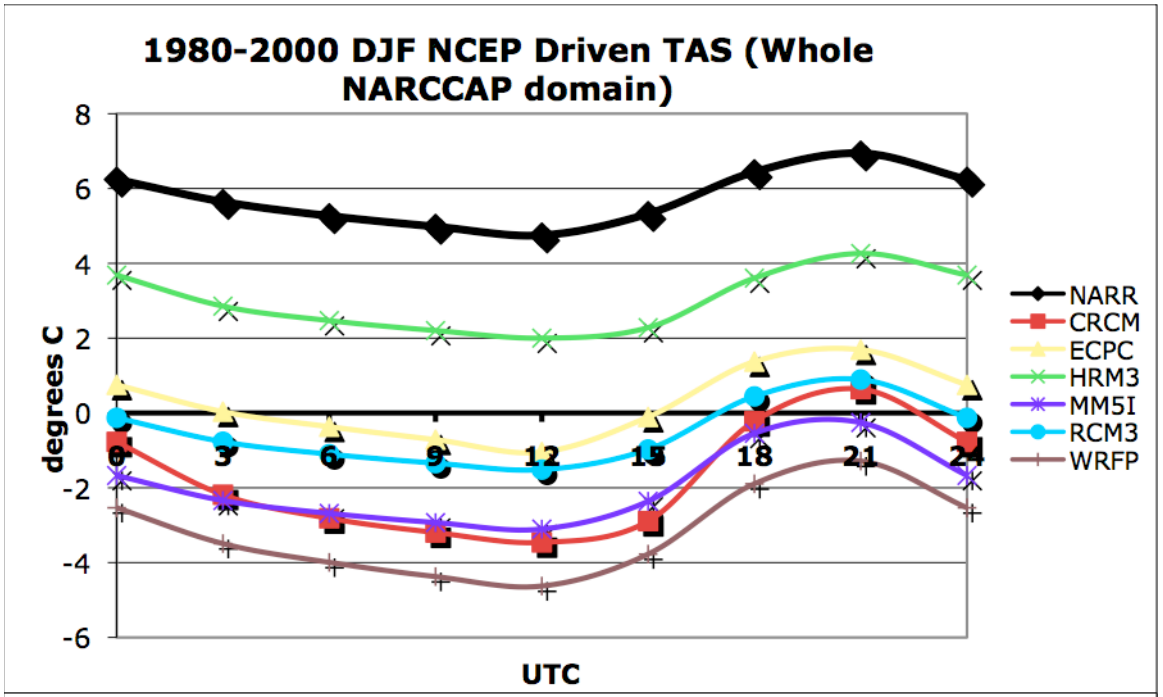
RCM3 gfdl−current JJA 1971 to 2000

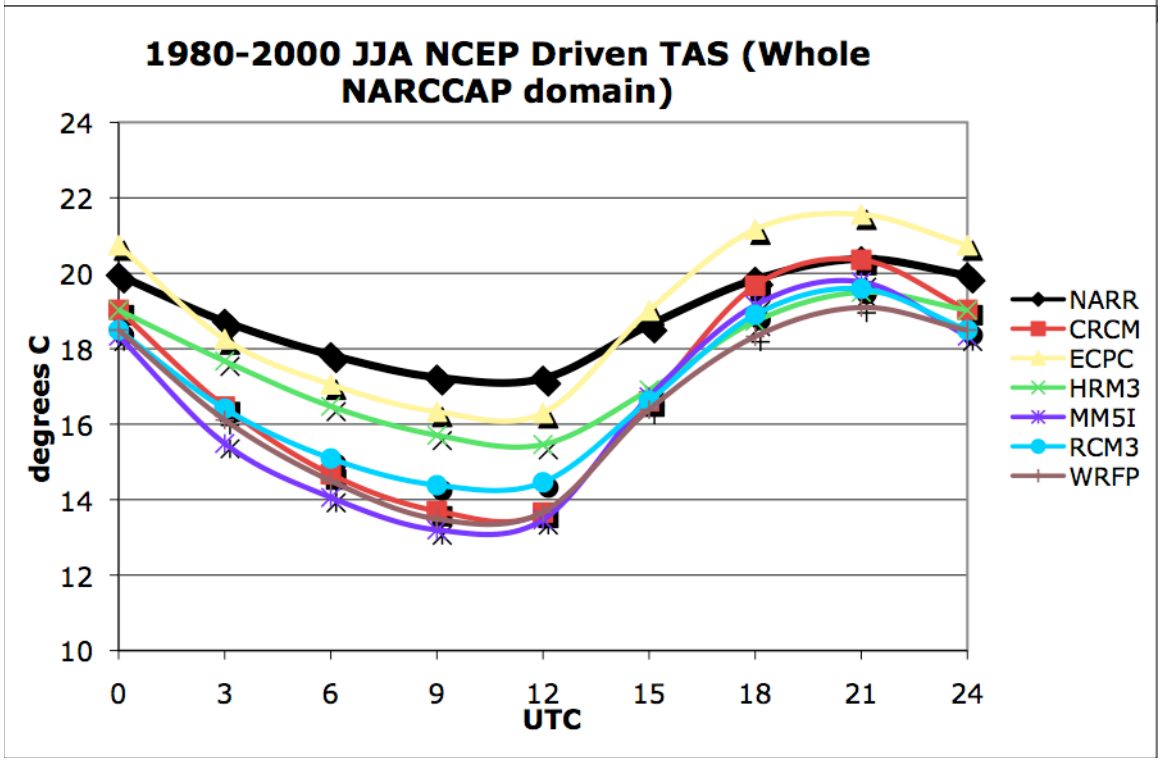




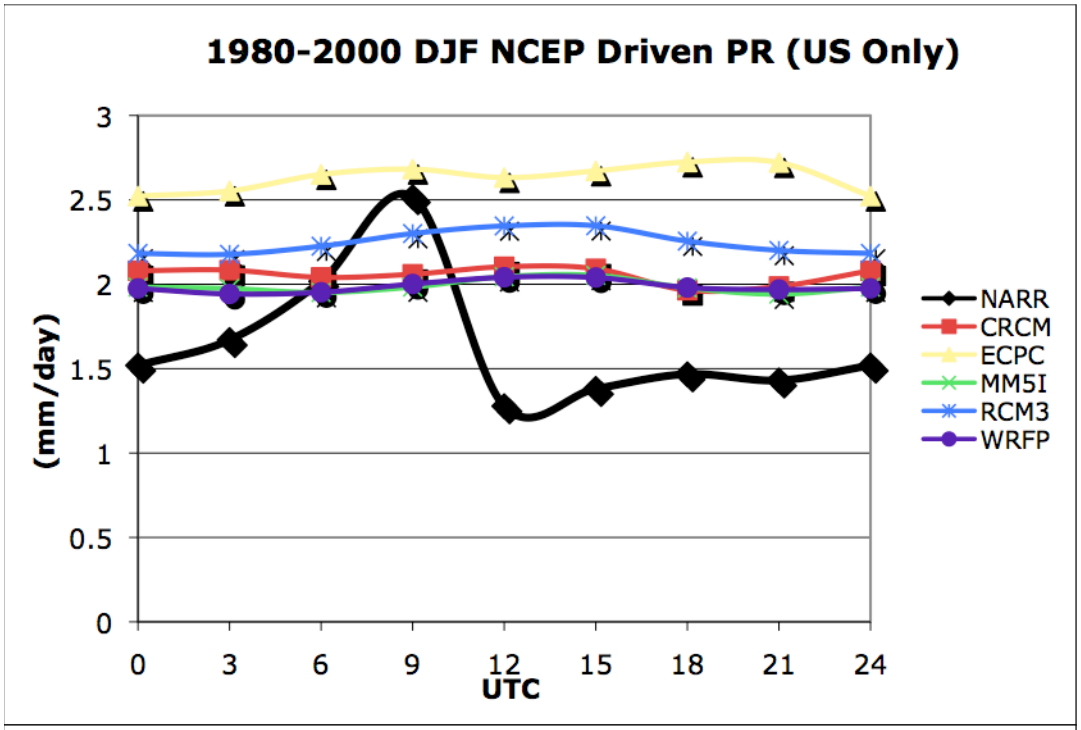
Monthly Precipitation

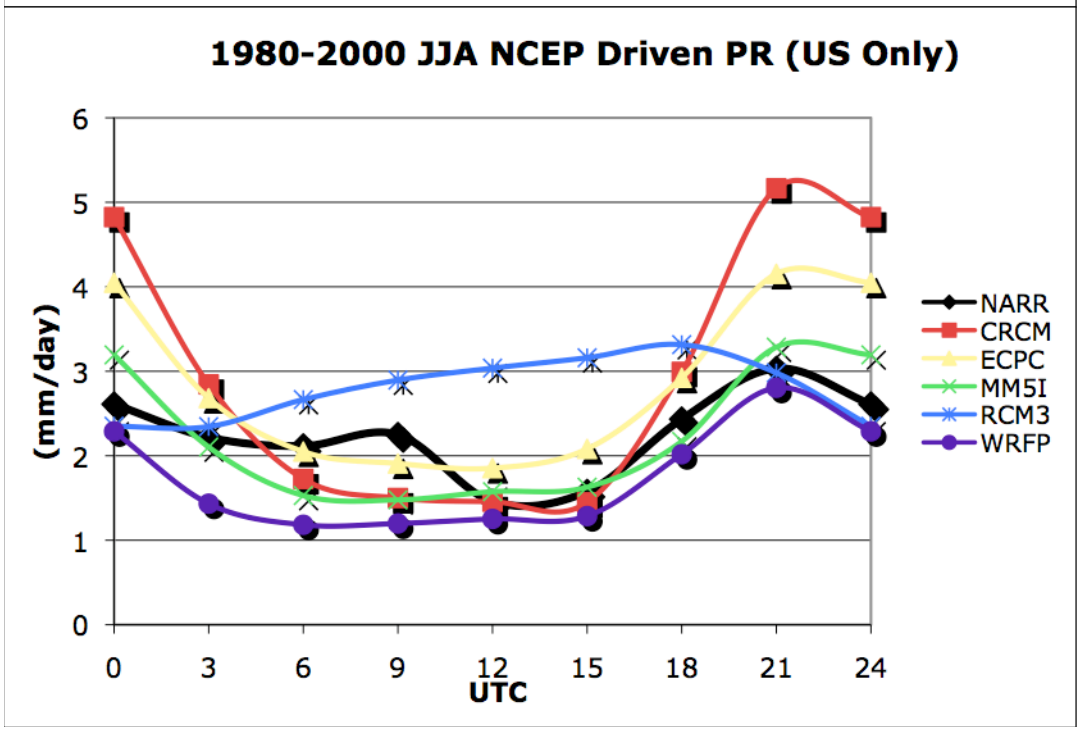
- From Wang et al. 2009 (JRL)
- Fig. 1. (a) Orography and (b) cold-season rainfall (Nov-May, Udel) of the Intermountain Region. The major mountain ranges are outlined by red lines. (c)-(g) Monthly rainfall histograms of Udel, averaged from the five regions indicated in Fig. 1b, superimposed with the corresponding precipitation of the NARR (thick black line) and all RCMs (color lines).



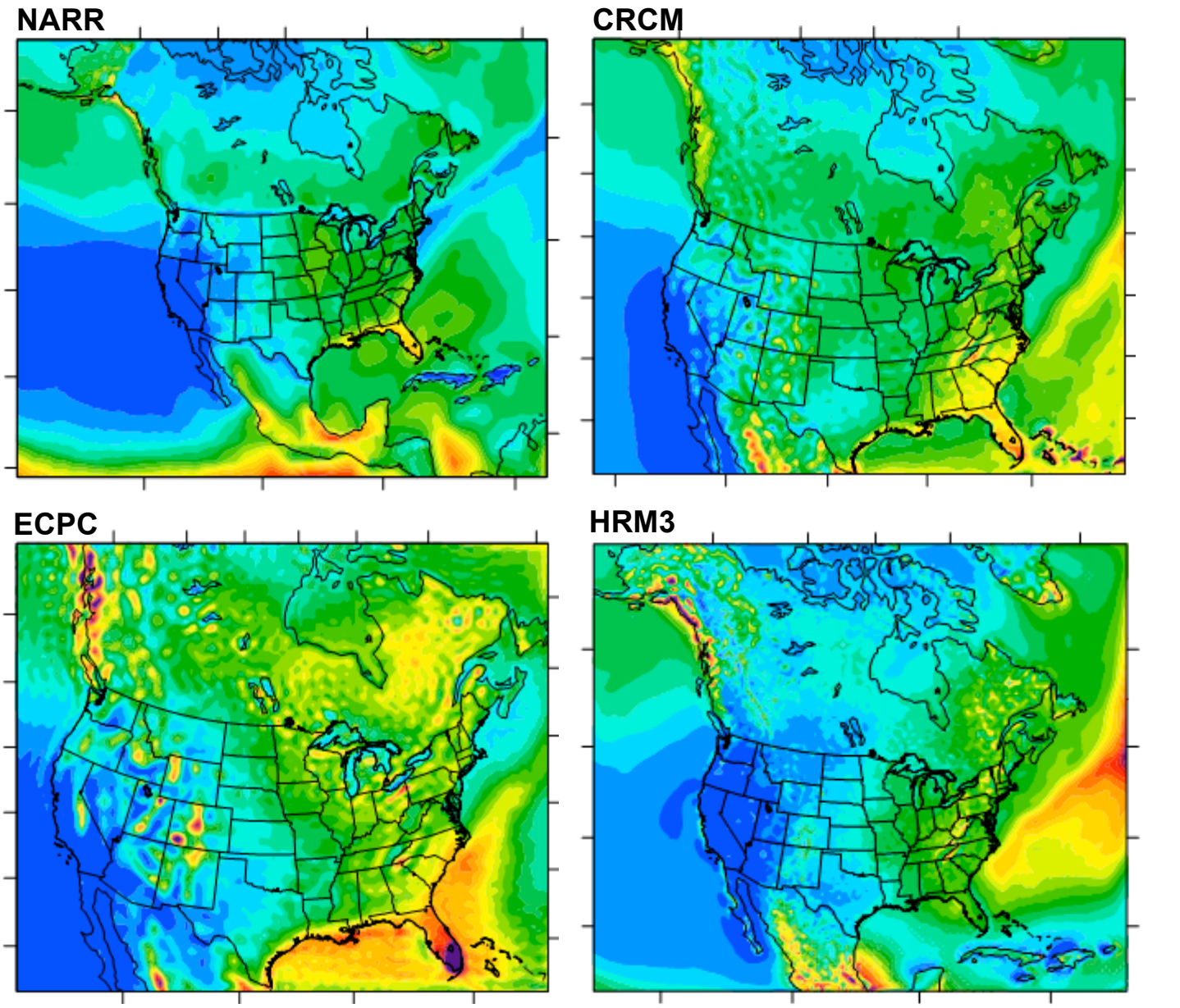


Diurnal Cycle: Temperature



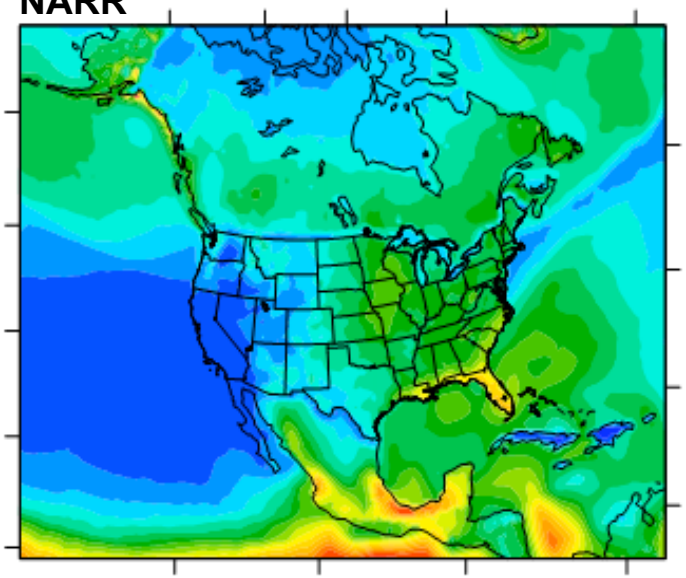


Diurnal Cycle: Precipitation

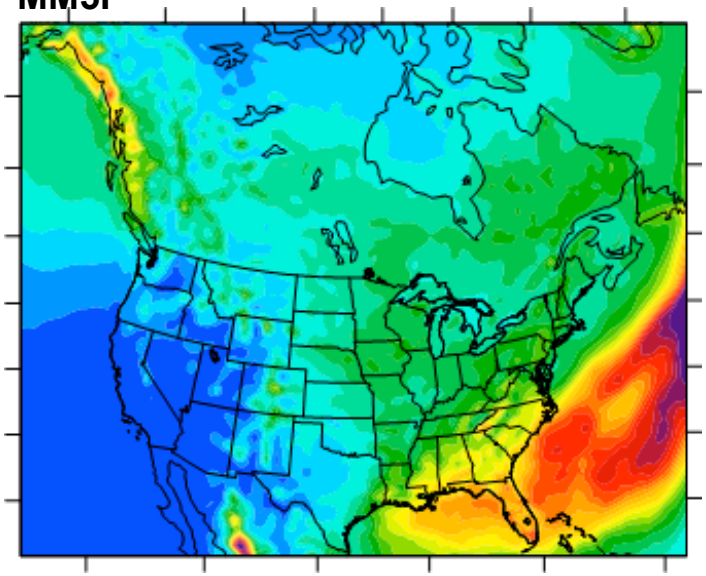


Summer Precipitation
NCEP Driven Runs

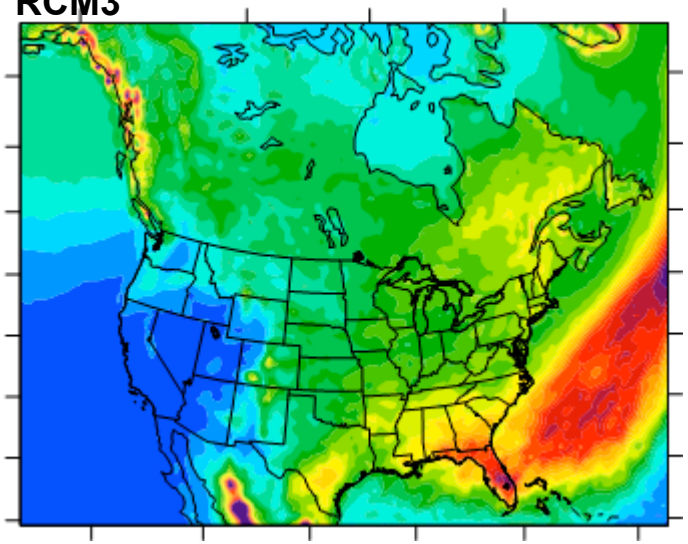
NARR



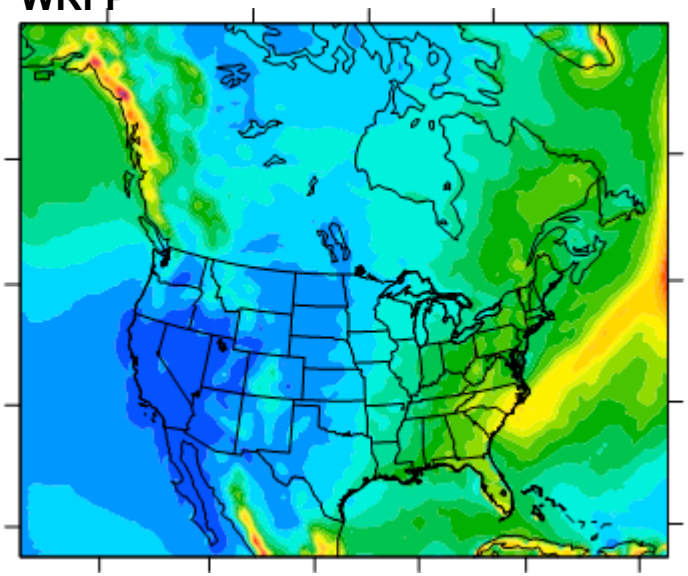
MM5I



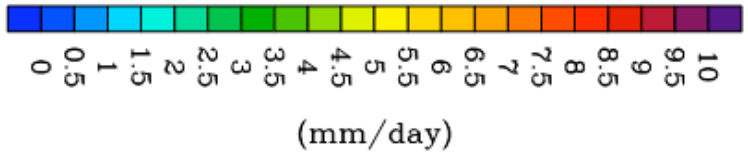
RCM3



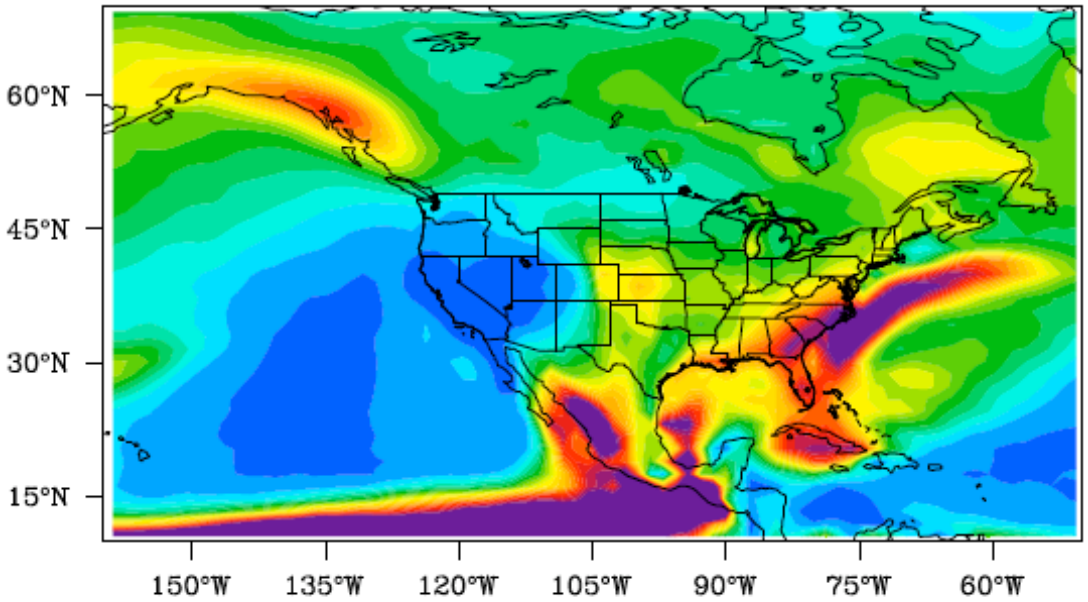
WRFP



Summer Precipitation
NCEP Driven Runs

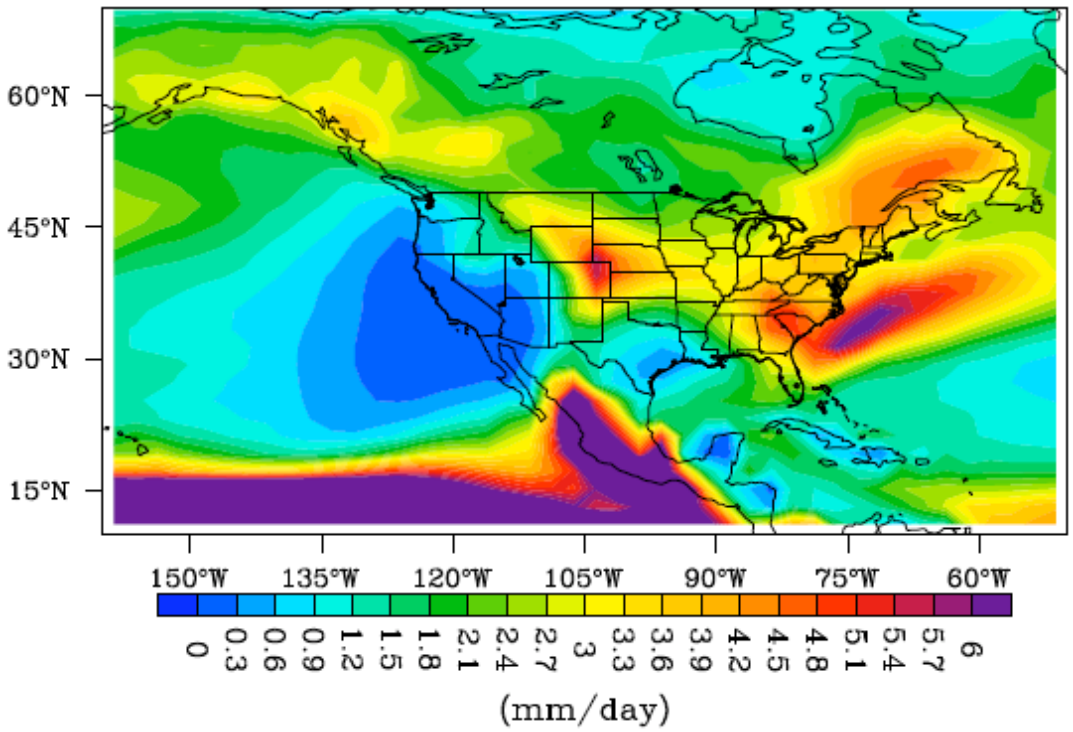


CCSM

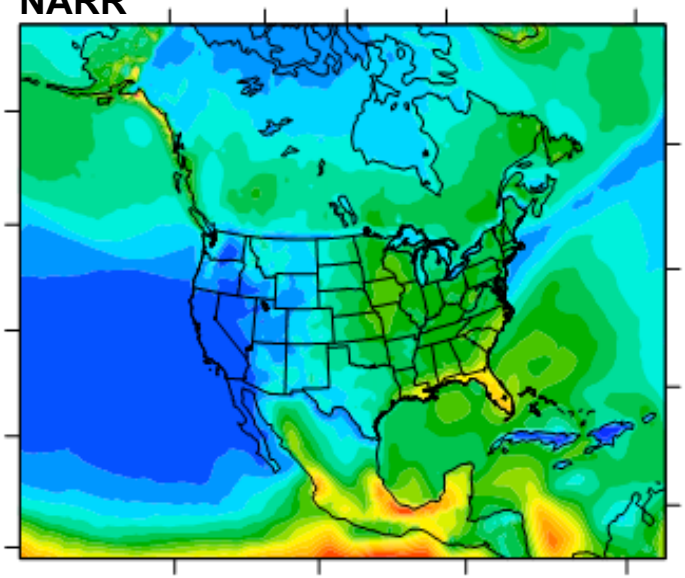


1980-1999 JJA GCM
Precipitation

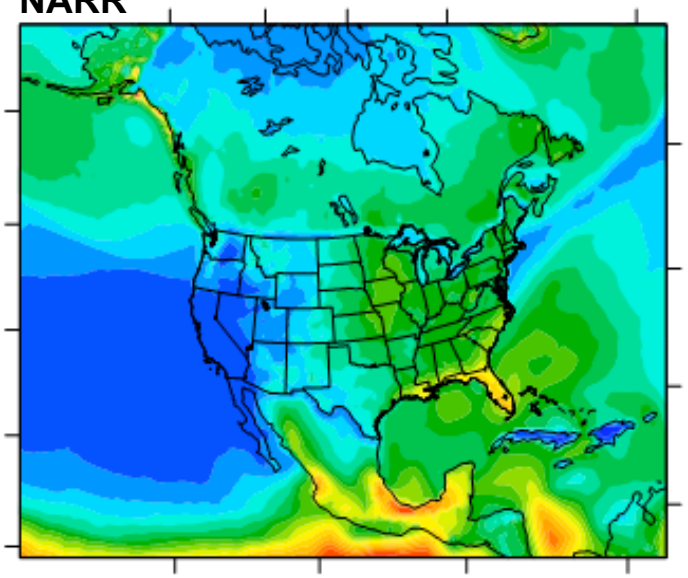
GFDL



NARR

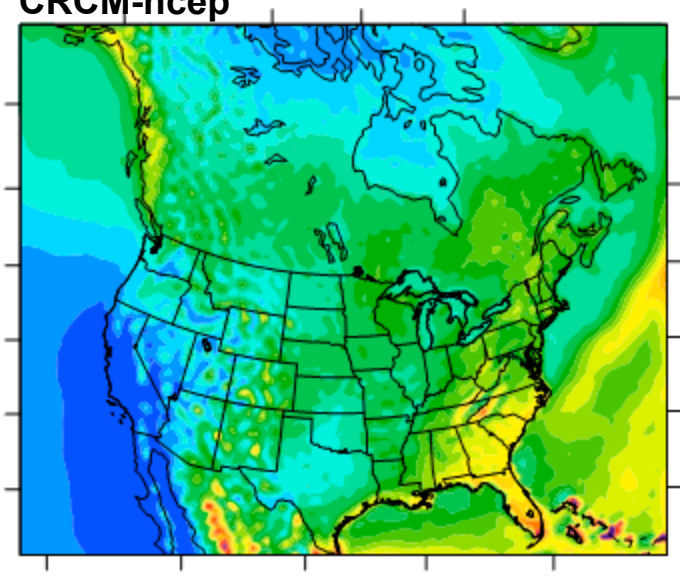


NARR

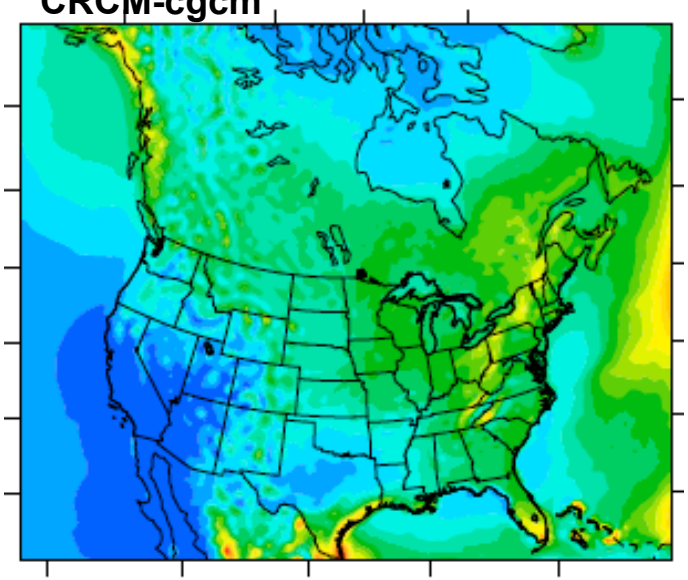


1980-2000 JJA Precipitation w/ GCM Driven Run: CRCM and CGCM

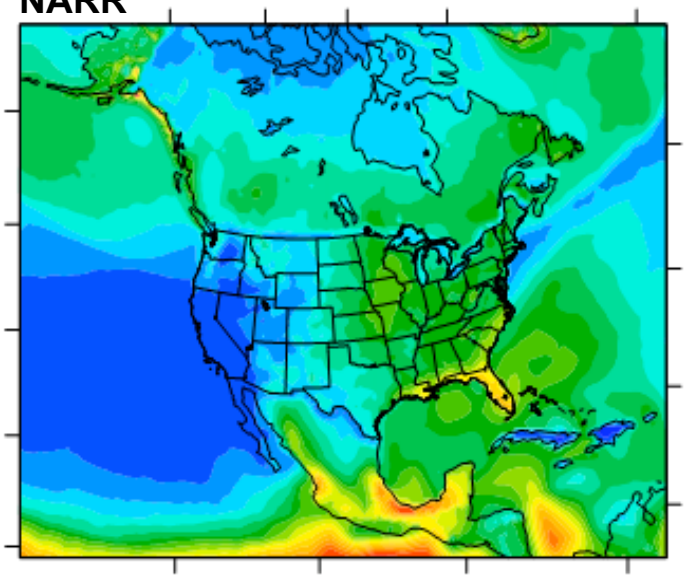
CRCM-ncep



CRCM-cgcm

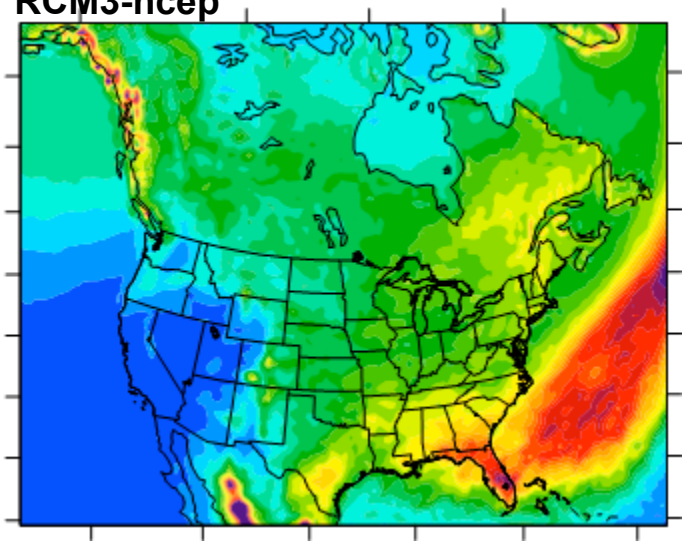


NARR

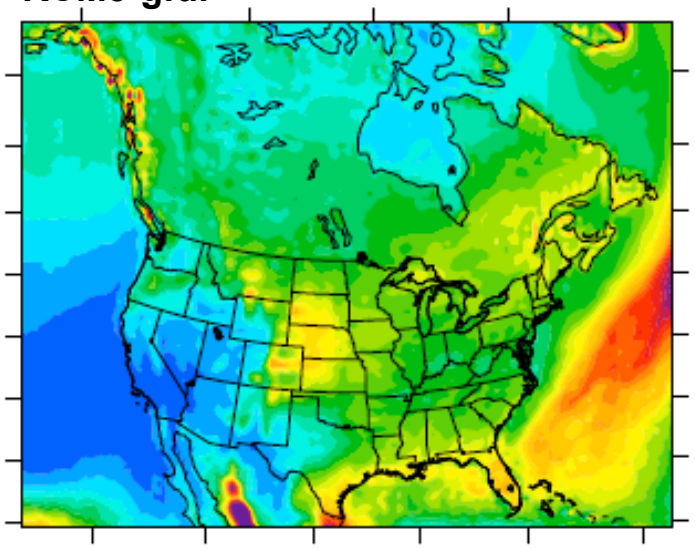


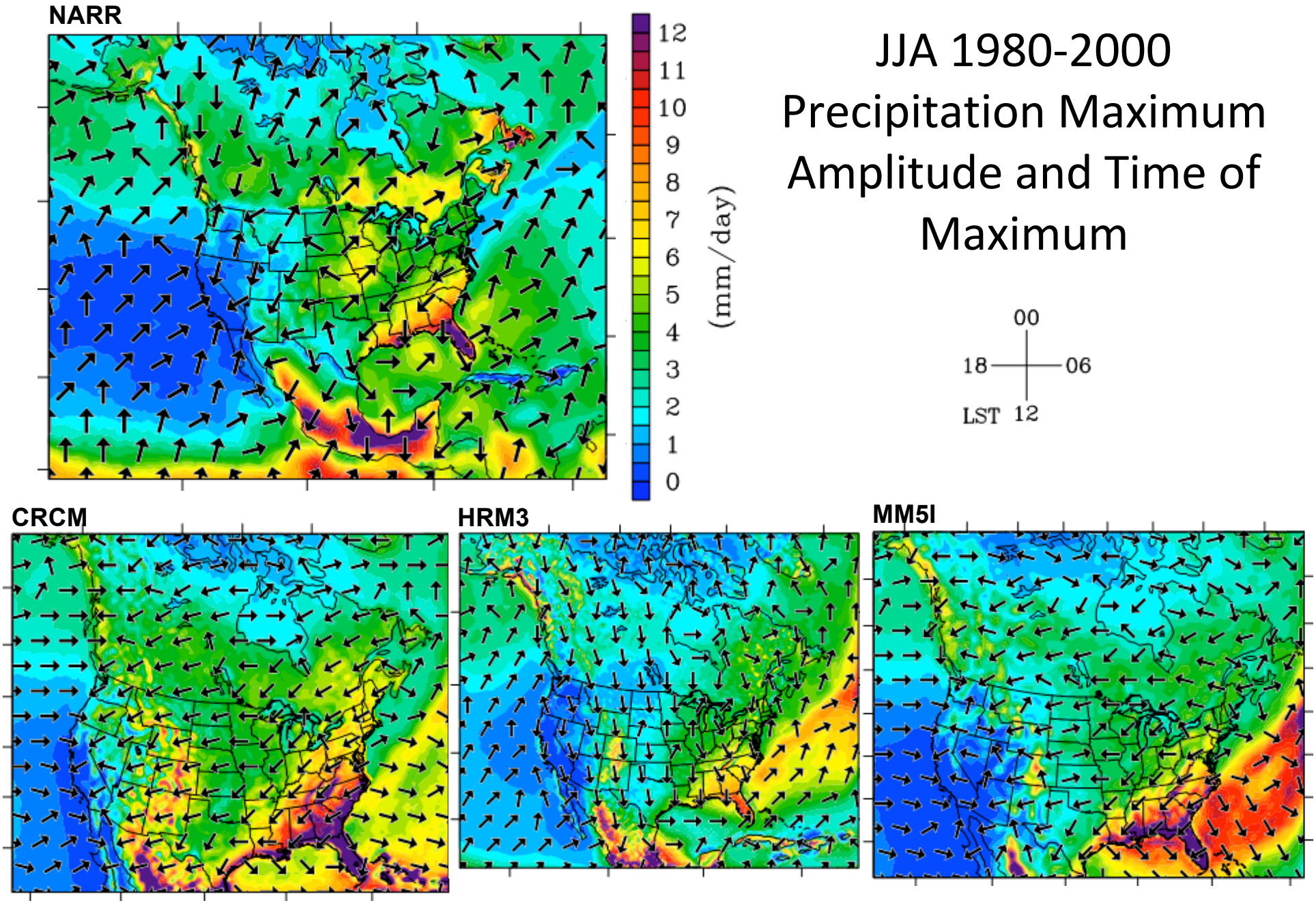
1980-2000 JJA Precipitation w/ GCM Driven Run: RCM3 and GFDL

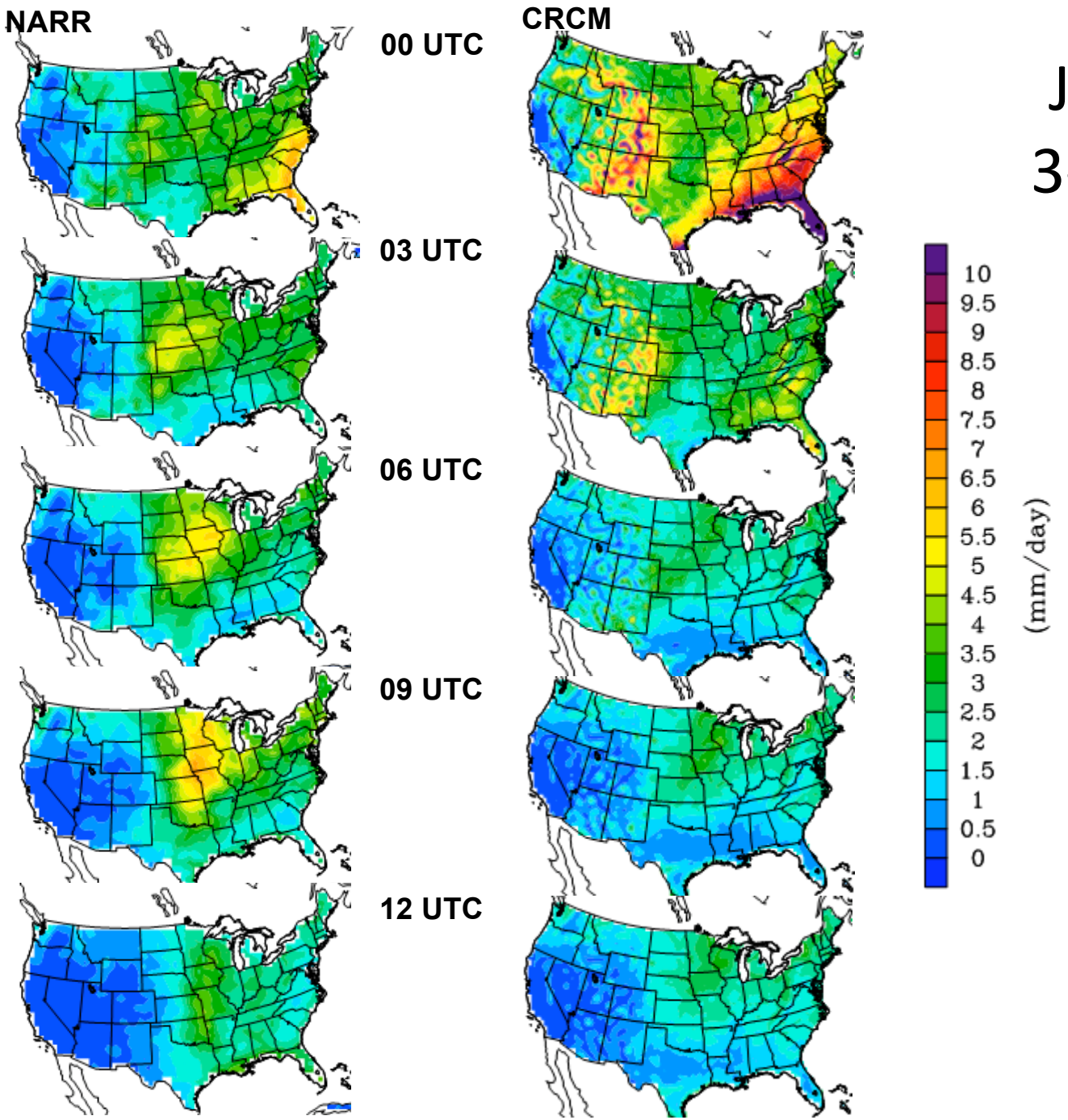
RCM3-ncep



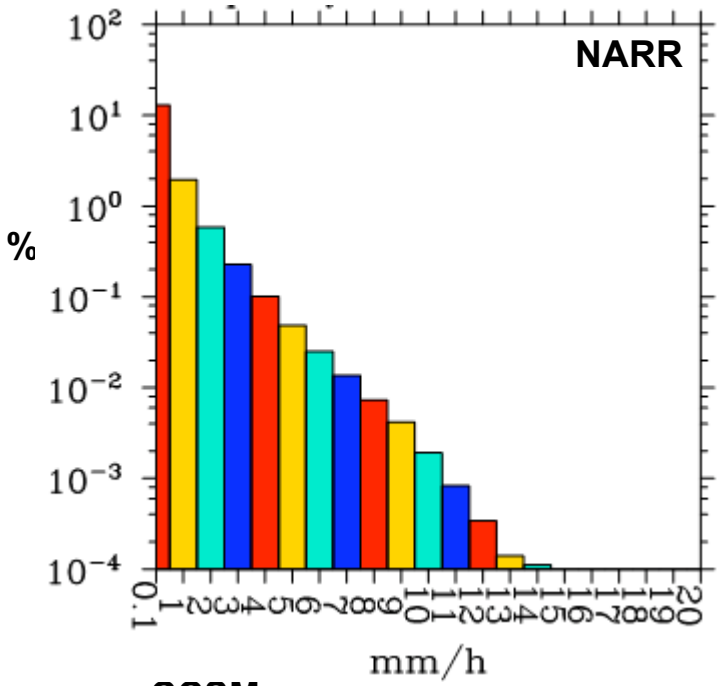
RCM3-gfdl

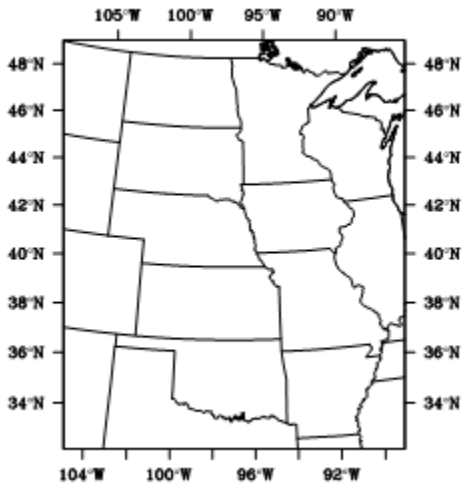



NARR
12
11
10
9
8
7
6
5
4
3
2
1
0
(mm/day)
JJA 1980-2000
Precipitation Maximum
Amplitude and Time of
Maximum
00
18
06
LST 12
CRCM
HRM3
MM5I

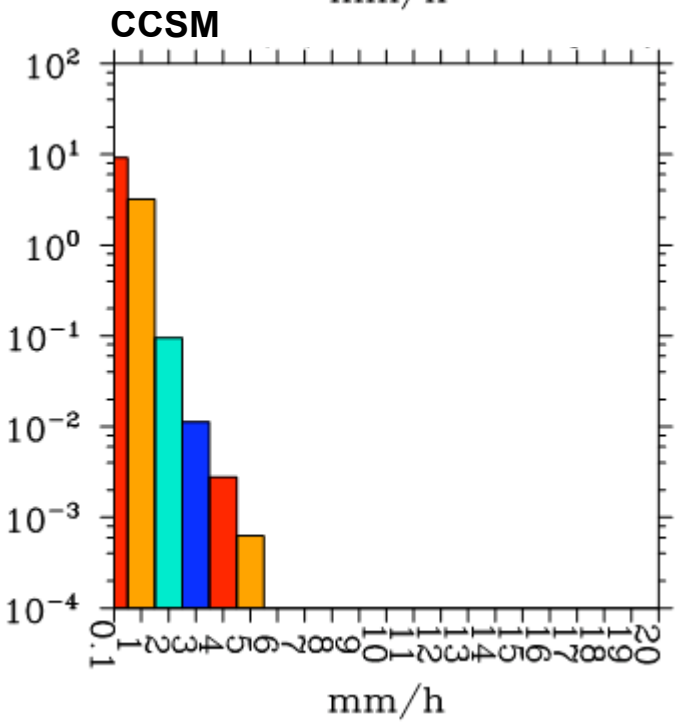


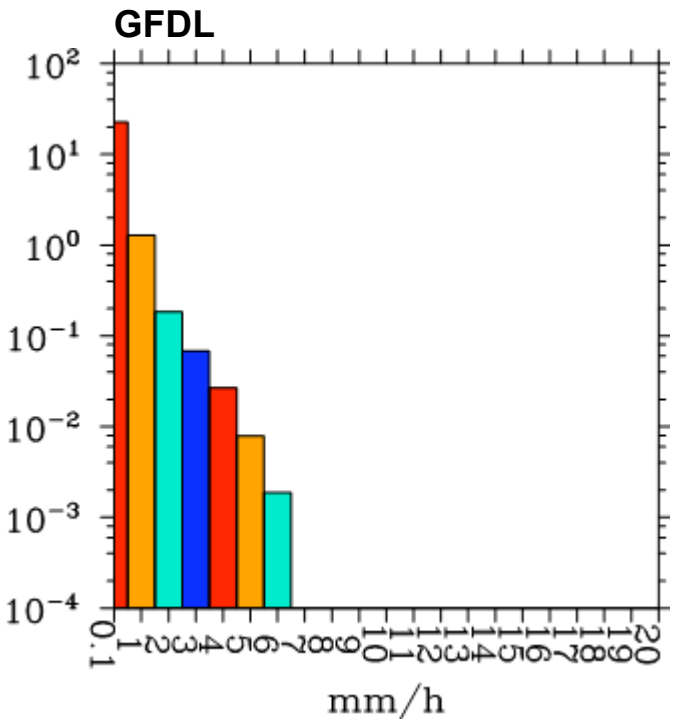
JJA 1980-2000
3-hr Average Pr

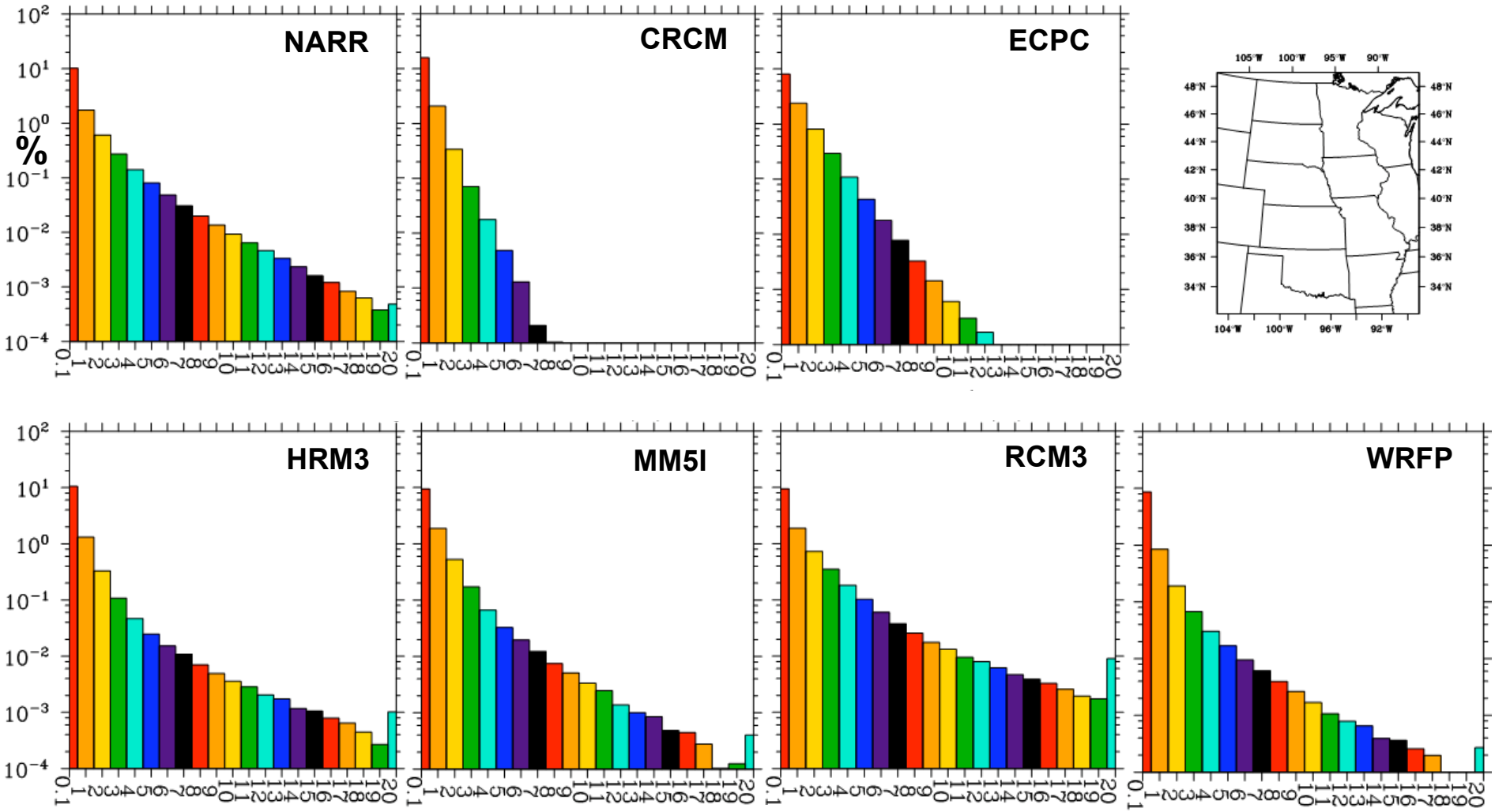




6h Pr Frequency Distribution
1980-1999/2000
JJA
GCMs







3h Pr Frequency Distribution
1980-1999/2000 JJA
RCMs
(mm/h)

Questions?