GROUP 8

Tests over CORDEX - EAST ASIA

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Outlines

1. Experiment design

2. Preliminary results

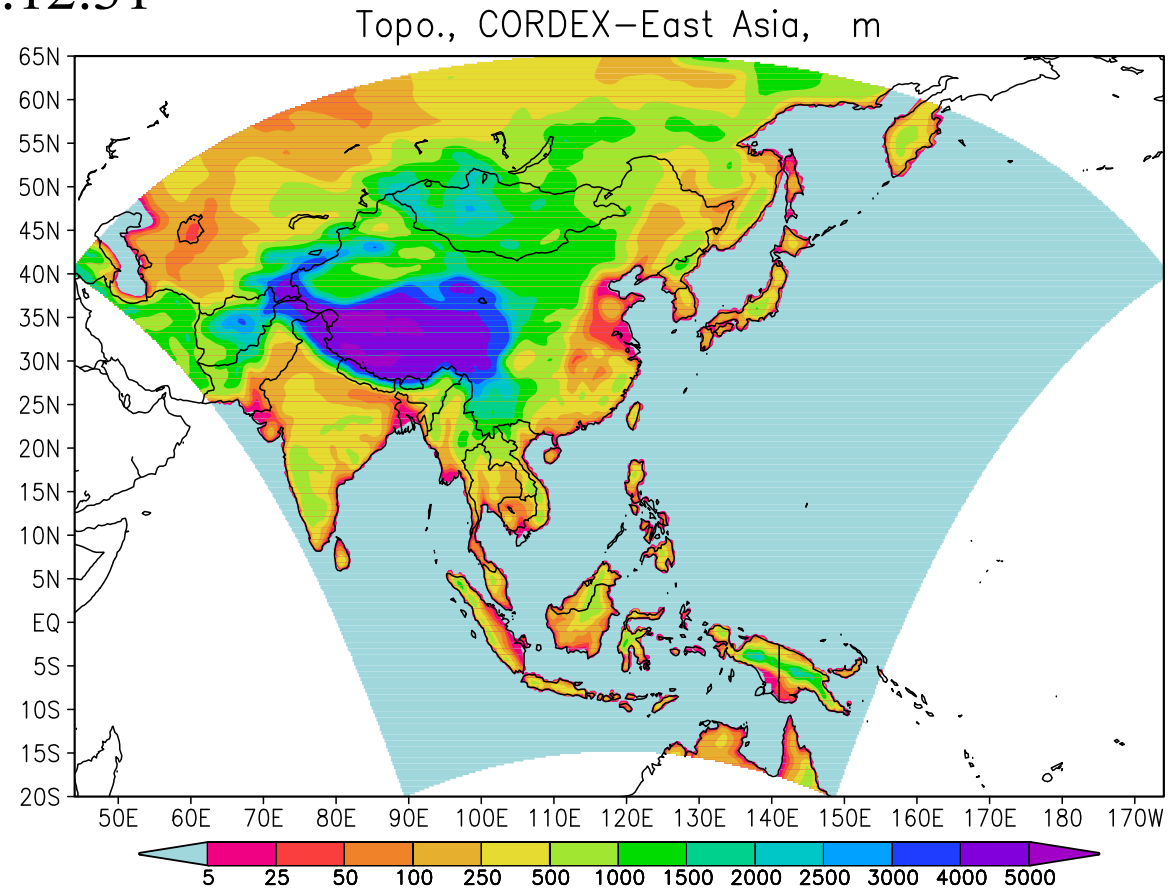
3. Summary

Forcing data: ERA-Interim, SST: OI_WK

Resolution: 50 km (216x200)

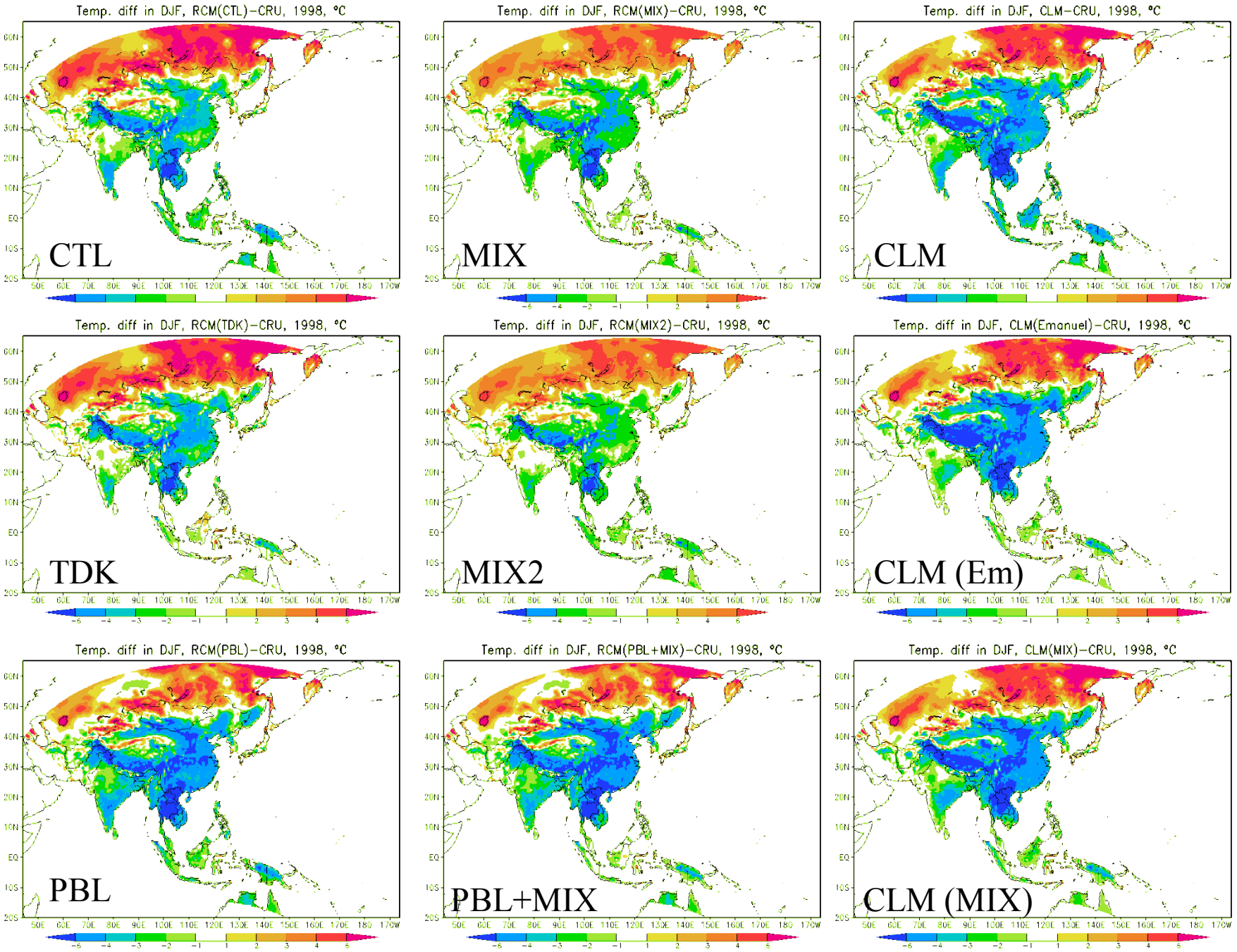
Vertical levels: 18

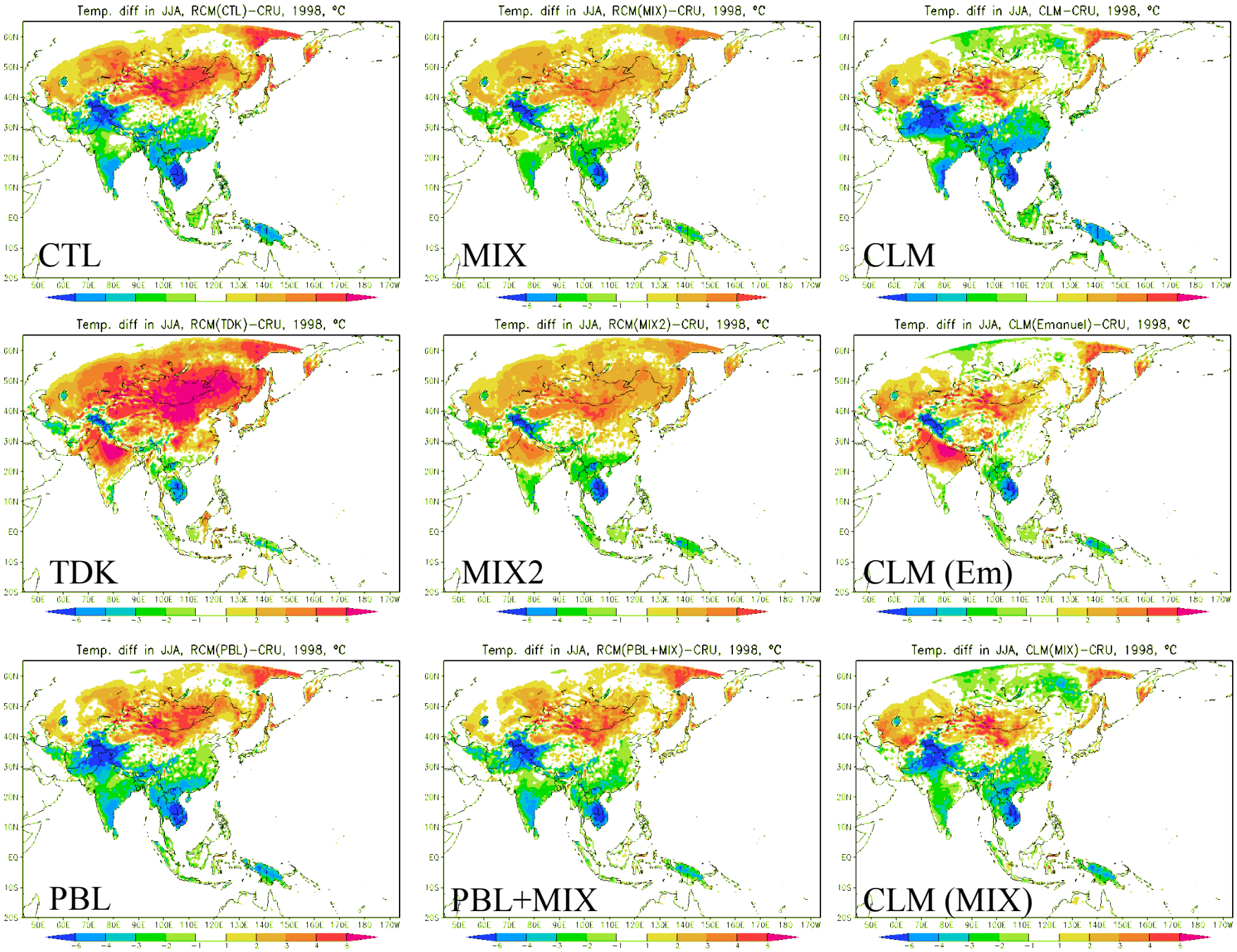
Period: 1997.11.15-1998.12.31

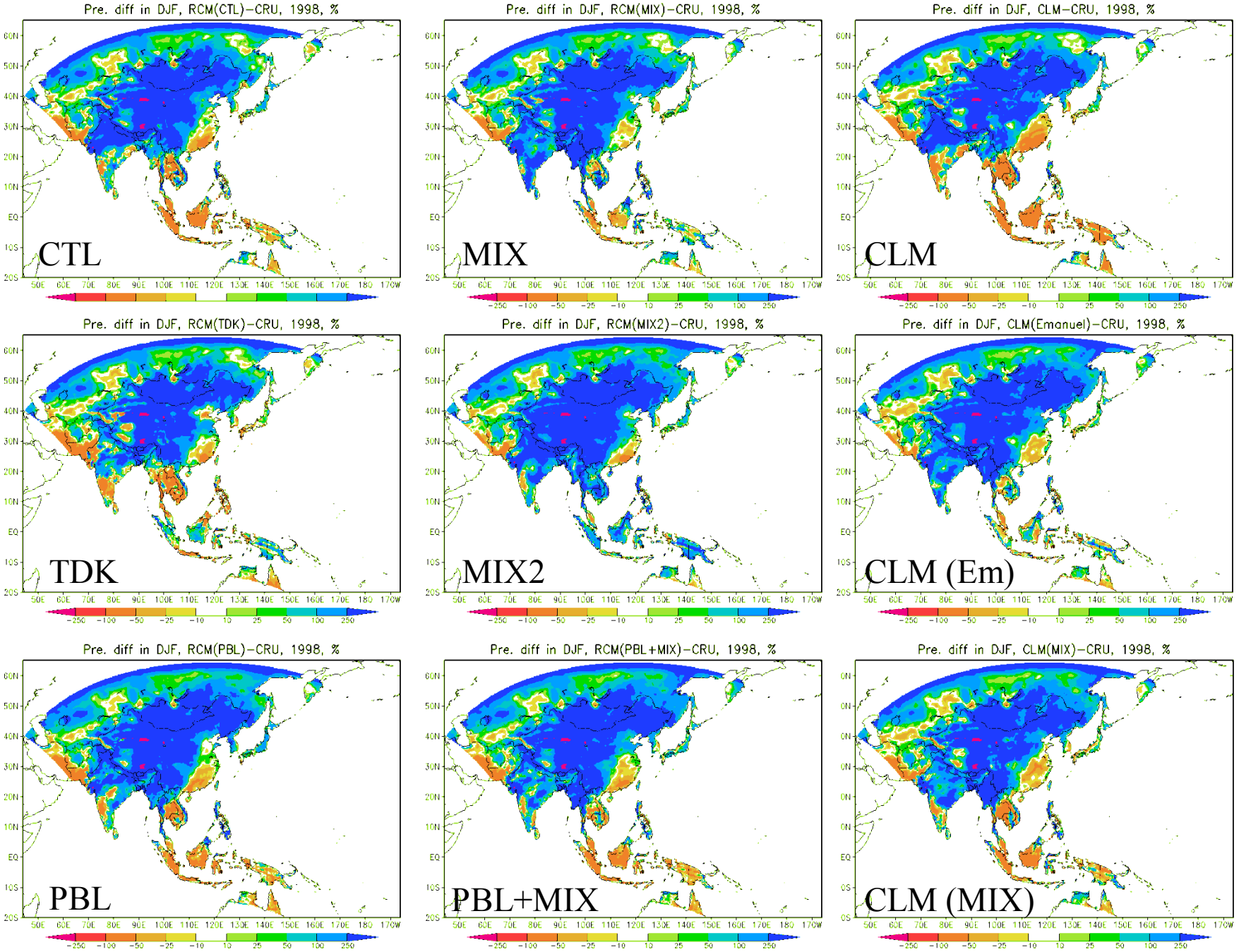


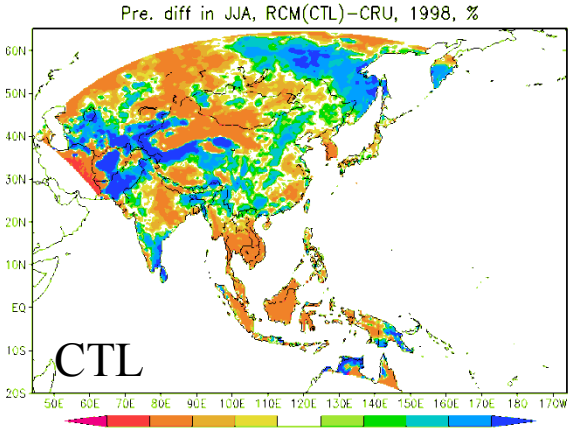
	Name	Convective Scheme	BATS or CLM	PBL
Test 1	control run(CTL)	Grell	BATS	Hotslag
Test 2	MIX	Emanuel -ocean +grell-land	BATS	Hotslag
Test 3	MIX2	Emanuel-land +grell-ocean	BATS	Hotslag
Test 4	TDK	Tiedtke	BATS	Hotslag
Test 5	CLM	Grell	CLM	Hotslag
Test 6	CLM2	Emanuel	CLM	Hotslag
Test 7	CLM+MIX	Emanuel-ocean +grell-land	CLM	Hotslag
Test 8	PBL	Grell	BATS	UW-PBL
Test 9	PBL+MIX	Emanuel –ocean +grell-land	BATS	UW-PBL

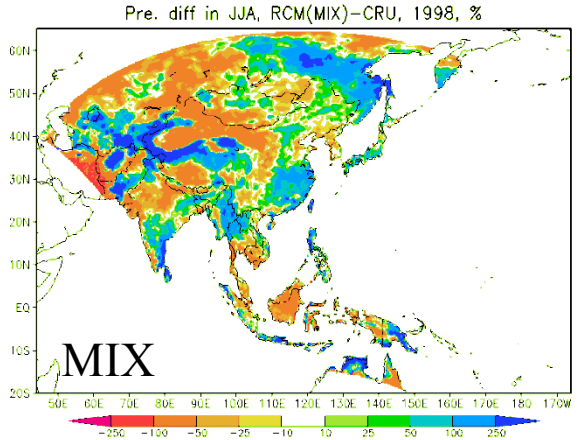
2. Preliminary results

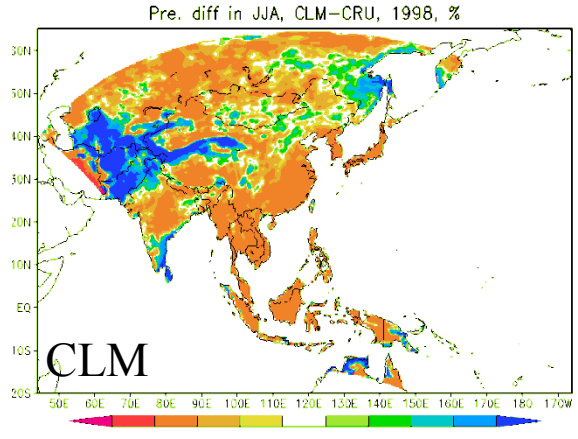

Temp. diff in DJF, RCM(CTL)−CRU, 1998, °C
CTL
Temp. diff in DJF, RCM(MIX)−CRU, 1998, °C
MIX
Temp. diff in DJF, CLM−CRU, 1998, °C
CLM
Temp. diff in DJF, RCM(TDK)−CRU, 1998, °C
TDK
Temp. diff in DJF, RCM(MIX2)−CRU, 1998, °C
MIX2
Temp. diff in DJF, CLM(Emanuel)−CRU, 1998, °C
CLM (Em)
Temp. diff in DJF, RCM(PBL)−CRU, 1998, °C
PBL
Temp. diff in DJF, RCM(PBL+MIX)−CRU, 1998, °C
PBL+MIX
Temp. diff in DJF, CLM(MIX)−CRU, 1998, °C
CLM (MIX)

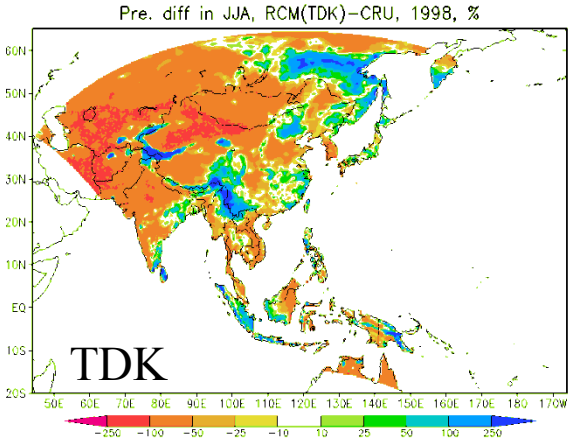

Temp. diff in JJA, RCM(CTL)−CRU, 1998, °C
CTL
Temp. diff in JJA, RCM(MIX)−CRU, 1998, °C
MIX
Temp. diff in JJA, CLM−CRU, 1998, °C
CLM
Temp. diff in JJA, RCM(TDK)−CRU, 1998, °C
TDK
Temp. diff in JJA, RCM(MIX2)−CRU, 1998, °C
MIX2
Temp. diff in JJA, CLM(Emanuel)−CRU, 1998, °C
CLM (Em)
Temp. diff in JJA, RCM(PBL)−CRU, 1998, °C
PBL
Temp. diff in JJA, RCM(PBL+MIX)−CRU, 1998, °C
PBL+MIX
Temp. diff in JJA, CLM(MIX)−CRU, 1998, °C
CLM (MIX)

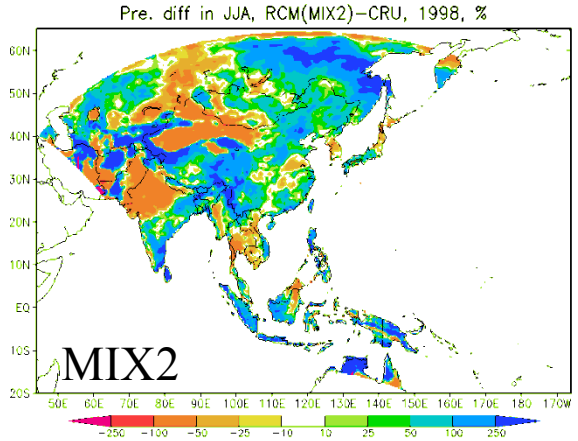

Pre. diff in DJF, RCM(CTL)−CRU, 1998, %
CTL
Pre. diff in DJF, RCM(MIX)−CRU, 1998, %
MIX
Pre. diff in DJF, CLM−CRU, 1998, %
CLM
Pre. diff in DJF, RCM(TDK)−CRU, 1998, %
TDK
Pre. diff in DJF, RCM(MIX2)−CRU, 1998, %
MIX2
Pre. diff in DJF, CLM(Emanuel)−CRU, 1998, %
CLM (Em)
Pre. diff in DJF, RCM(PBL)−CRU, 1998, %
PBL
Pre. diff in DJF, RCM(PBL+MIX)−CRU, 1998, %
PBL+MIX
Pre. diff in DJF, CLM(MIX)−CRU, 1998, %
CLM (MIX)

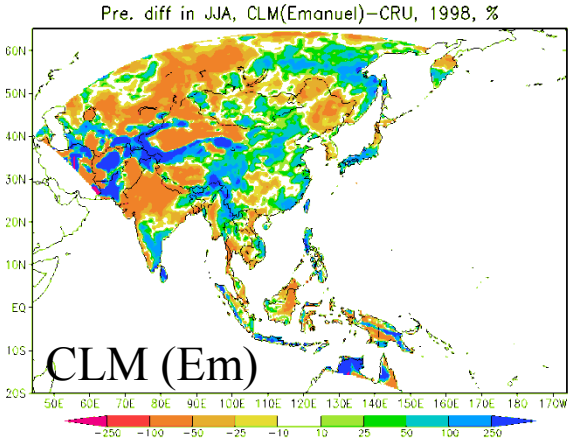

Pre. diff in JJA, RCM(CTL)-CRU, 1998, %
CTL

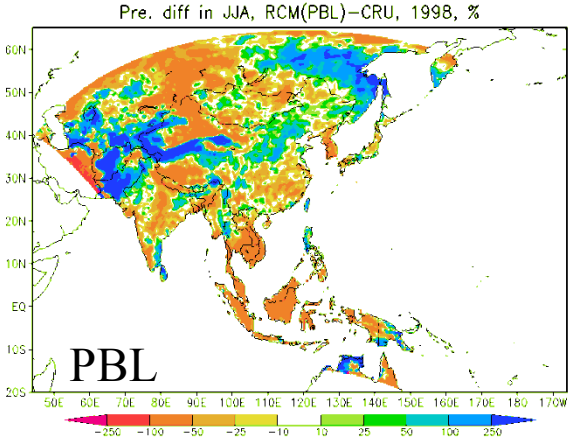

Pre. diff in JJA, RCM(MIX)-CRU, 1998, %
MIX

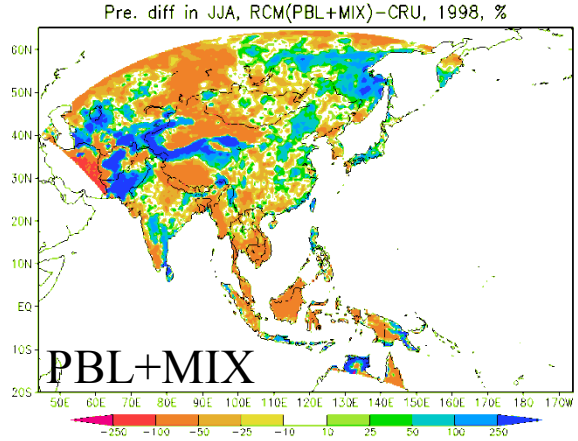

Pre. diff in JJA, CLM-CRU, 1998, %
CLM

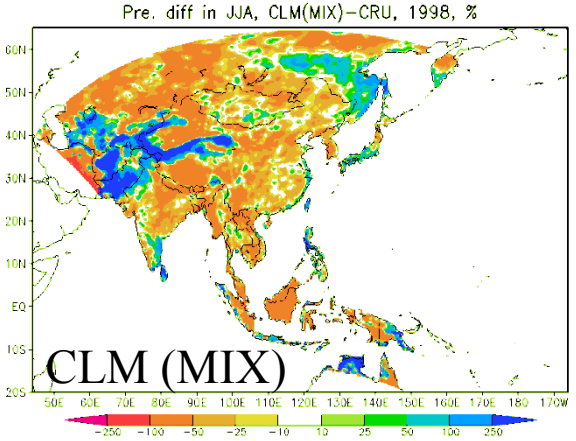

Pre. diff in JJA, RCM(TDK)-CRU, 1998, %
TDK

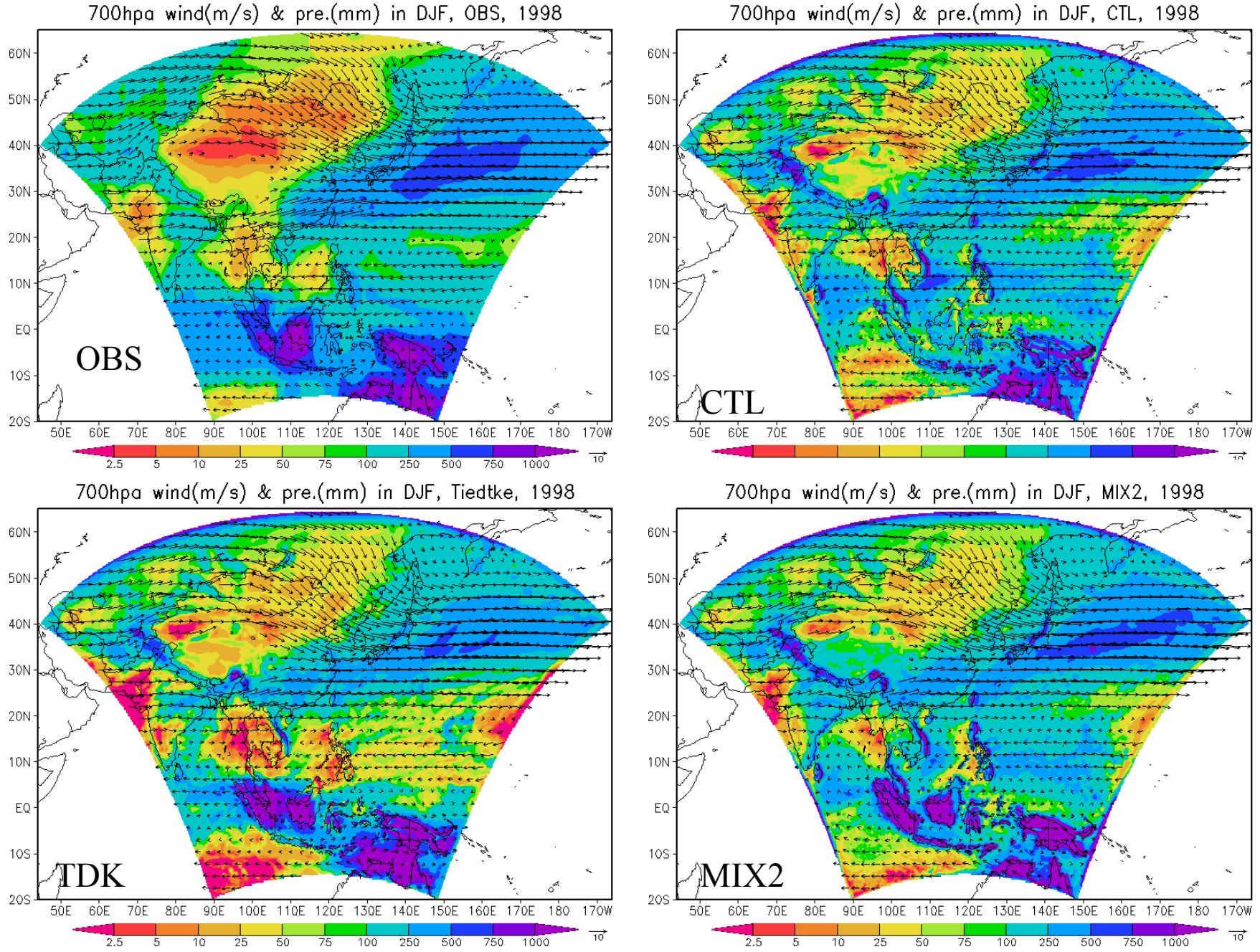

Pre. diff in JJA, RCM(MIX2)-CRU, 1998, %
MIX2

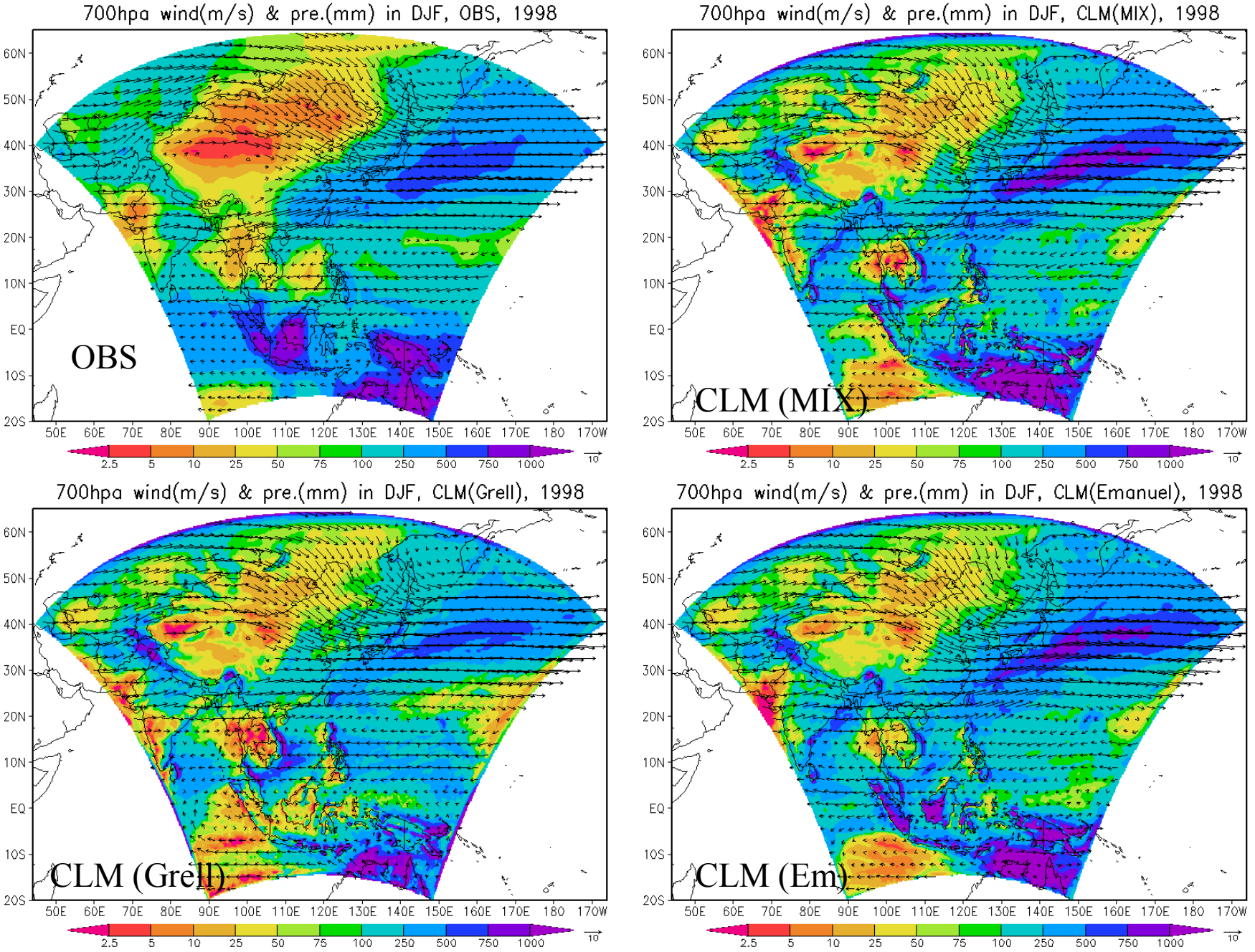

Pre. diff in JJA, CLM(Emanuel)-CRU, 1998, %
CLM (Em)

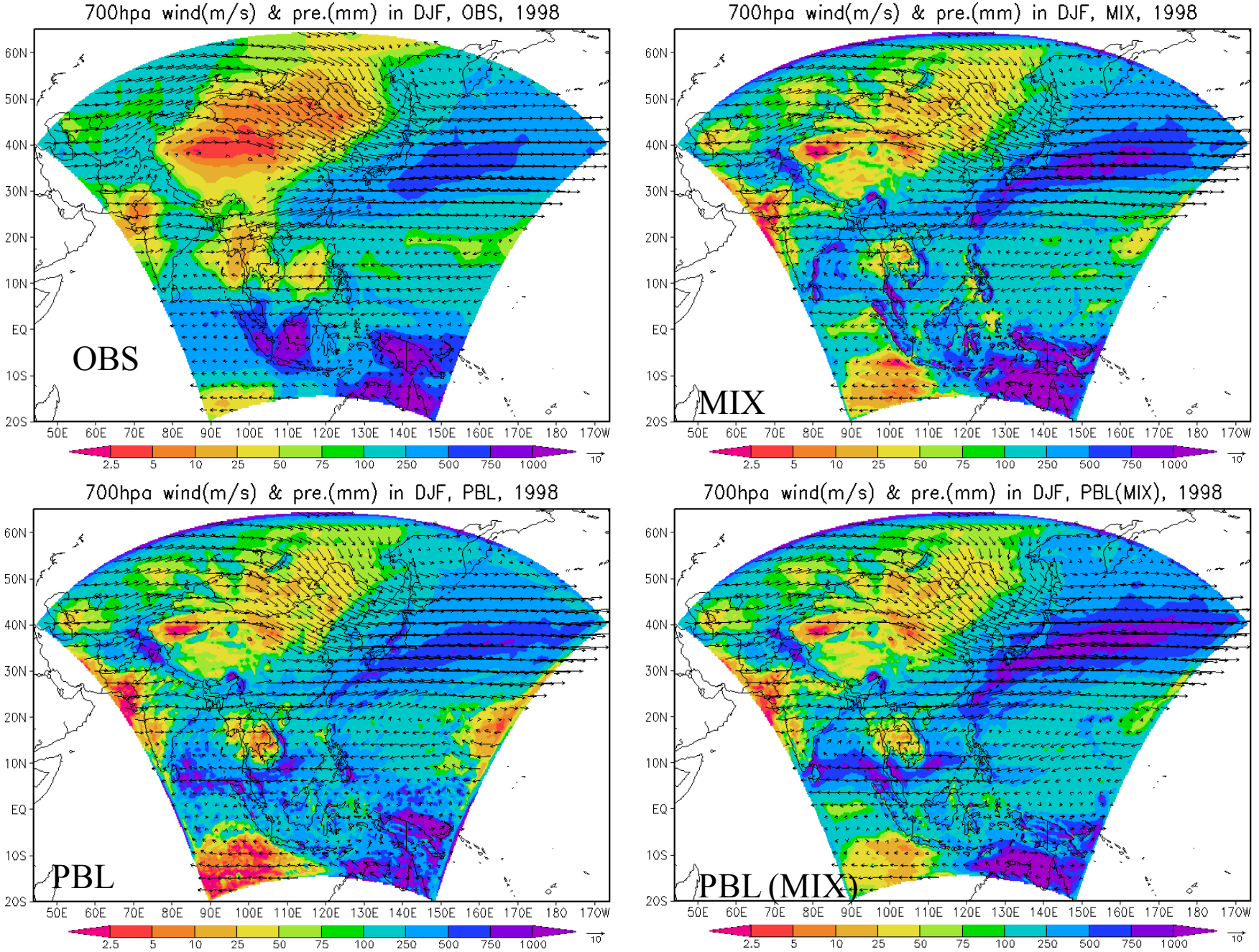

Pre. diff in JJA, RCM(PBL)-CRU, 1998, %
PBL

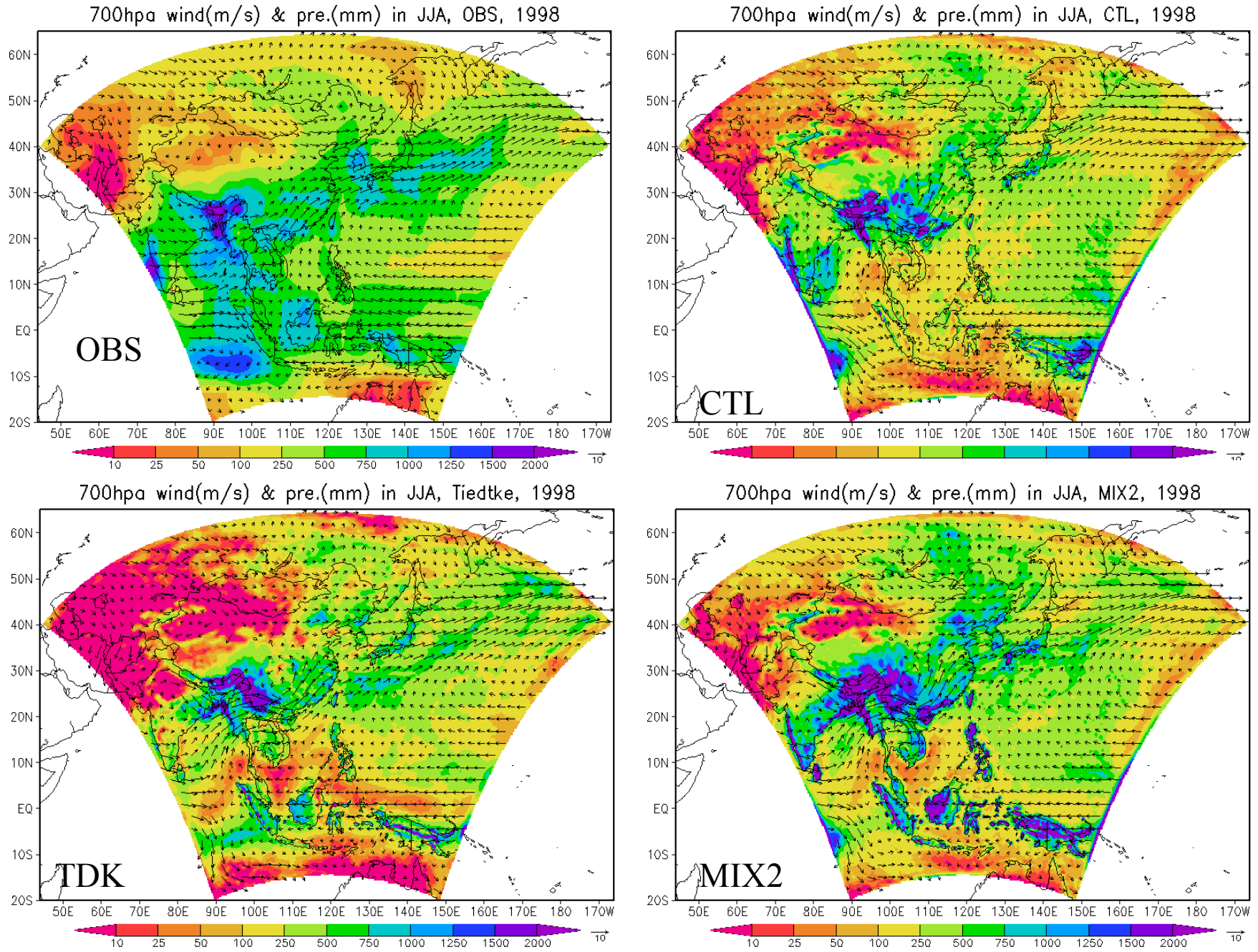

Pre. diff in JJA, RCM(PBL+MIX)-CRU, 1998, %
PBL+MIX

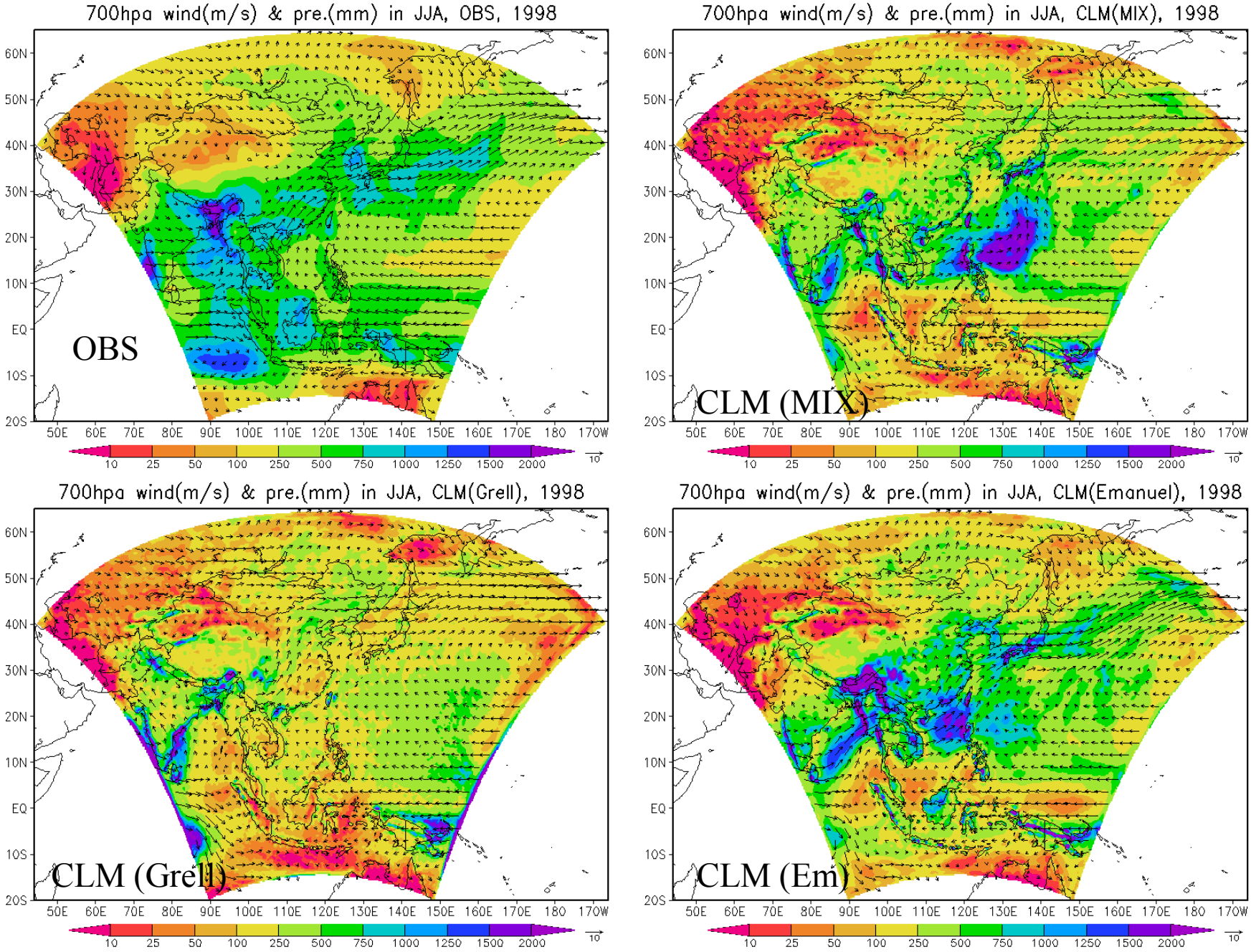

Pre. diff in JJA, CLM(MIX)-CRU, 1998, %
CLM (MIX)

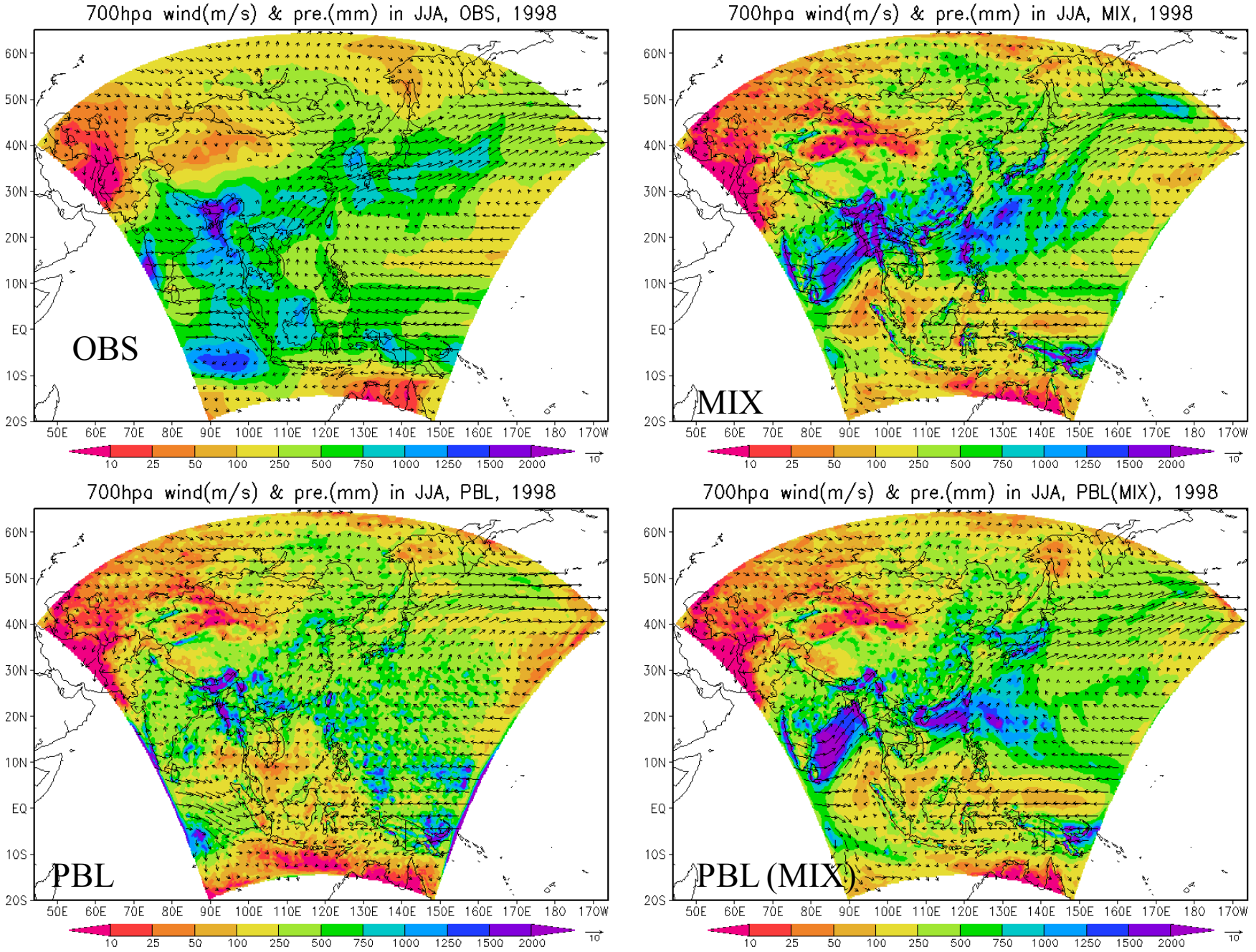

700hpa wind(m/s) & pre.(mm) in DJF, OBS, 1998
OBS
700hpa wind(m/s) & pre.(mm) in DJF, CTL, 1998
CTL
700hpa wind(m/s) & pre.(mm) in DJF, Tiedtke, 1998
TDK
700hpa wind(m/s) & pre.(mm) in DJF, MIX2, 1998
MIX2
60N
50N
40N
30N
20N
10N
EQ
10S
20S
50E 60E 70E 80E 90E 100E 110E 120E 130E 140E 150E 160E 170E 180 170W
2.5 5 10 25 50 75 100 250 500 750 1000


700hpa wind(m/s) & pre.(mm) in DJF, OBS, 1998
OBS
700hpa wind(m/s) & pre.(mm) in DJF, CLM(MIX), 1998
CLM (MIX)
700hpa wind(m/s) & pre.(mm) in DJF, CLM(Grell), 1998
CLM (Grell)
700hpa wind(m/s) & pre.(mm) in DJF, CLM(Emanuel), 1998
CLM (Em)
60N
50N
40N
30N
20N
10N
EQ
10S
20S
50E 60E 70E 80E 90E 100E 110E 120E 130E 140E 150E 160E 170E 180 170W
2.5 5 10 25 50 75 100 250 500 750 1000
10


700hpa wind(m/s) & pre.(mm) in DJF, OBS, 1998
OBS
700hpa wind(m/s) & pre.(mm) in DJF, MIX, 1998
MIX
700hpa wind(m/s) & pre.(mm) in DJF, PBL, 1998
PBL
700hpa wind(m/s) & pre.(mm) in DJF, PBL(MIX), 1998
PBL (MIX)
60N
50N
40N
30N
20N
10N
EQ
10S
20S
50E 60E 70E 80E 90E 100E 110E 120E 130E 140E 150E 160E 170E 180 170W
2.5 5 10 25 50 75 100 250 500 750 1000
10


700hpa wind(m/s) & pre.(mm) in JJA, OBS, 1998
OBS
700hpa wind(m/s) & pre.(mm) in JJA, CTL, 1998
CTL
700hpa wind(m/s) & pre.(mm) in JJA, Tiedtke, 1998
TDK
700hpa wind(m/s) & pre.(mm) in JJA, MIX2, 1998
MIX2
60N
50N
40N
30N
20N
10N
EQ
10S
20S
50E 60E 70E 80E 90E 100E 110E 120E 130E 140E 150E 160E 170E 180 170W
10 25 50 100 250 500 750 1000 1250 1500 2000
10


700hpa wind(m/s) & pre.(mm) in JJA, OBS, 1998
OBS
700hpa wind(m/s) & pre.(mm) in JJA, CLM(MIX), 1998
CLM (MIX)
700hpa wind(m/s) & pre.(mm) in JJA, CLM(Grell), 1998
CLM (Grell)
700hpa wind(m/s) & pre.(mm) in JJA, CLM(Emanuel), 1998
CLM (Em)
60N
50N
40N
30N
20N
10N
EQ
10S
20S
50E 60E 70E 80E 90E 100E 110E 120E 130E 140E 150E 160E 170E 180 170W
10 25 50 100 250 500 750 1000 1250 1500 2000


700hpa wind(m/s) & pre.(mm) in JJA, OBS, 1998
OBS
700hpa wind(m/s) & pre.(mm) in JJA, MIX, 1998
MIX
700hpa wind(m/s) & pre.(mm) in JJA, PBL, 1998
PBL
700hpa wind(m/s) & pre.(mm) in JJA, PBL(MIX), 1998
PBL (MIX)
60N
50N
40N
30N
20N
10N
EQ
10S
20S
50E 60E 70E 80E 90E 100E 110E 120E 130E 140E 150E 160E 170E 180 170W
10 25 50 100 250 500 750 1000 1250 1500 2000
10

Summary

1. Ts DJF: too warm in the high latitutes,

   too cold in China, cold in SEA

   better one: mix2 (em over land + grell over ocean)

2. Ts JJA: warm in the north, cold in the south

   very cold in Indo-China Peninsular

   cold in SEA

   better one over China: mix2, clm+em

3. Pr DJF: too less in southeast China (the rain center)

   too much over other places in China

   SEA: depends

4. Pr JJA: CLM does not rain except with em

SEA over land: usually dry.

5. Wind + precipitation:

DJF: too flat in southeast China, caused the less rainfall

problem with Grell in west and southwest Indonesia

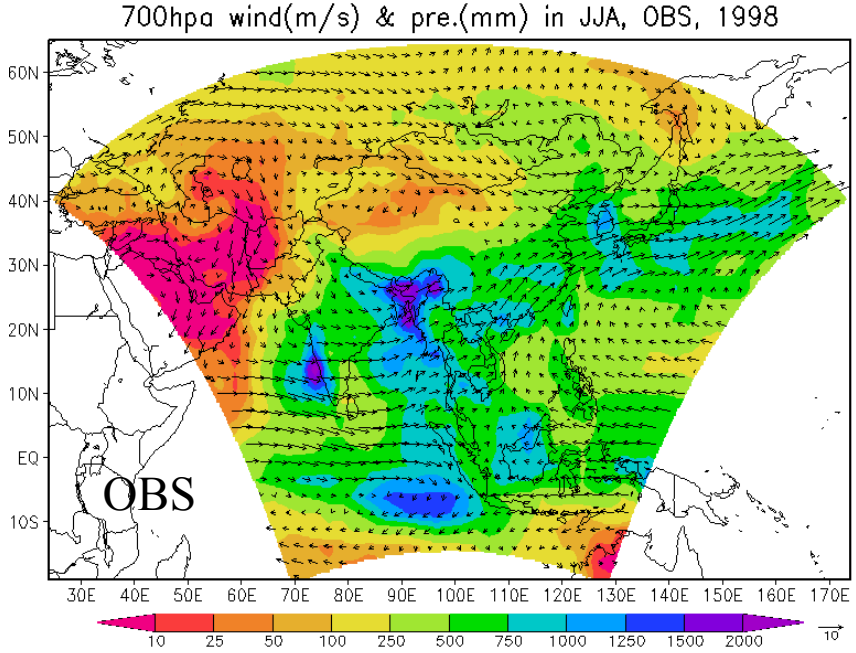
JJA: the “blocking” exits in all the exps.

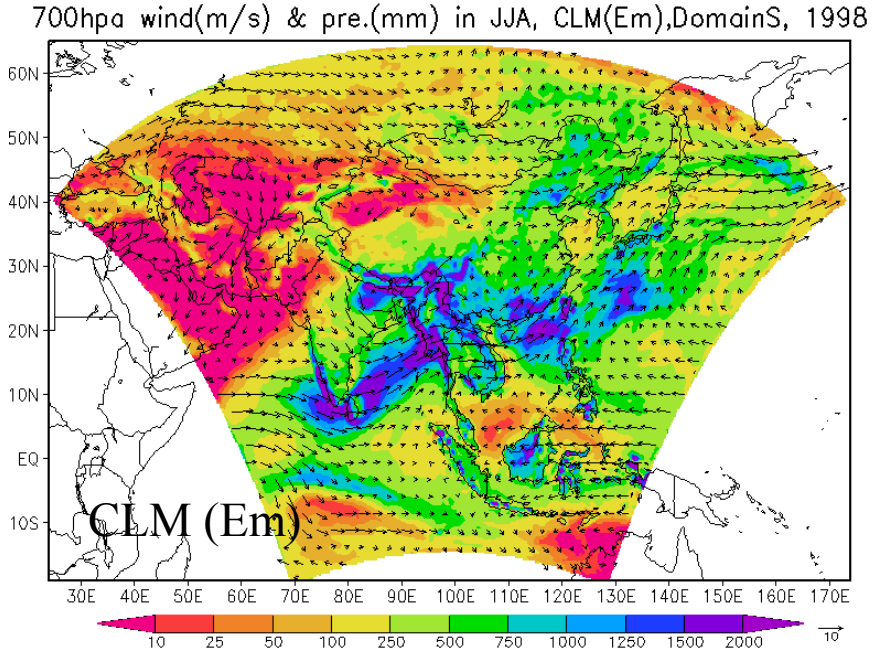
problem in west and southwest Indonesia

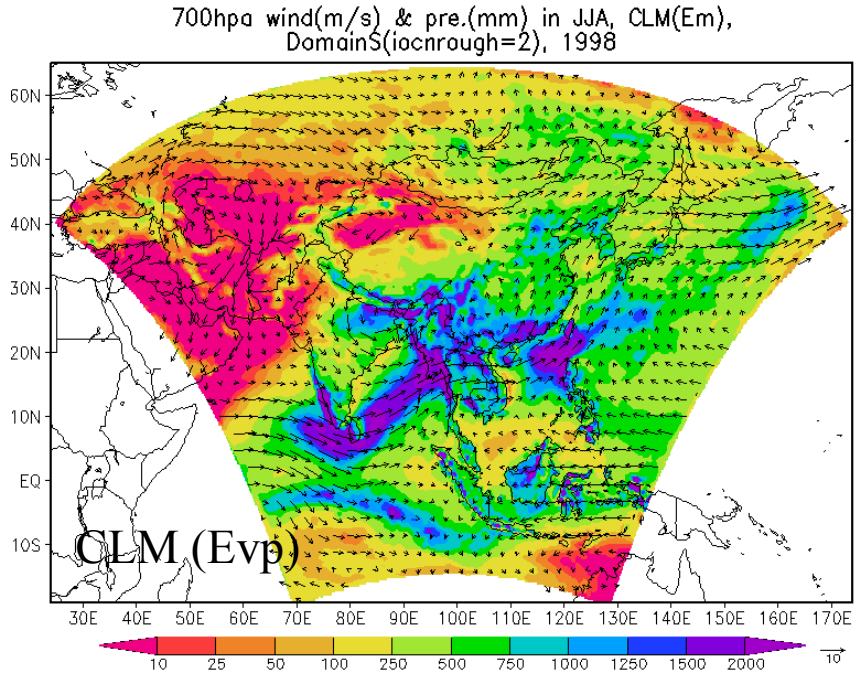
em, TDK are better in the monsoon flow for China

6. Move the domain 20º west helps or not?

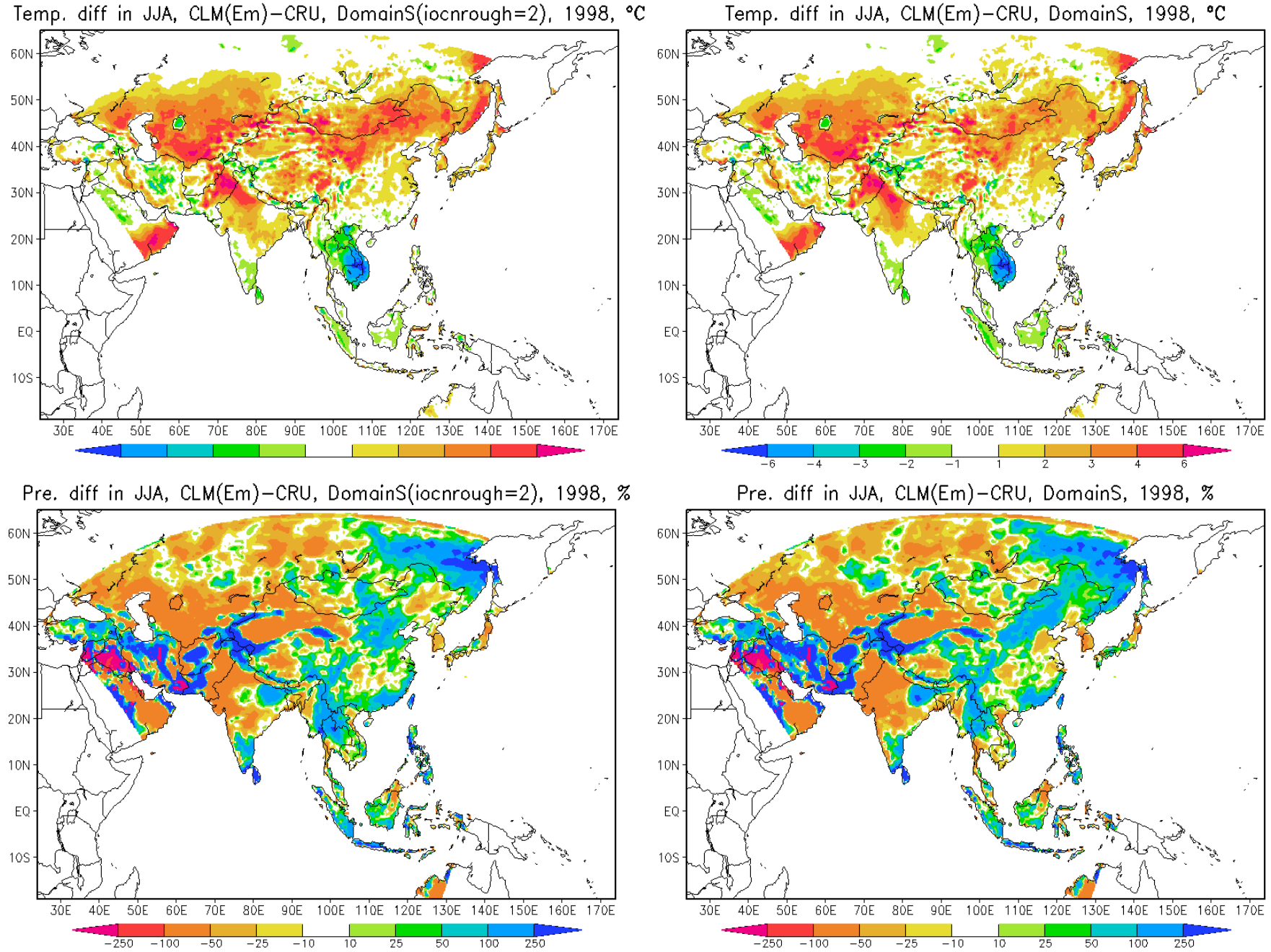
7. Change evaporation over ocean helps or not?


700hpa wind(m/s) & pre.(mm) in JJA, OBS, 1998
60N
50N
40N
30N
20N
10N
EQ
10S
OBS
30E 40E 50E 60E 70E 80E 90E 100E 110E 120E 130E 140E 150E 160E 170E
10 25 50 100 250 500 750 1000 1250 1500 2000
10


700hpa wind(m/s) & pre.(mm) in JJA, CLM(Em),DomainS, 1998
60N
50N
40N
30N
20N
10N
EQ
10S
CLM (Em)
30E 40E 50E 60E 70E 80E 90E 100E 110E 120E 130E 140E 150E 160E 170E
10 25 50 100 250 500 750 1000 1250 1500 2000
10


700hpa wind(m/s) & pre.(mm) in JJA, CLM(Em),
DomainS(iocnrough=2), 1998
60N
50N
40N
30N
20N
10N
EQ
10S
CLM (Evp)
30E 40E 50E 60E 70E 80E 90E 100E 110E 120E 130E 140E 150E 160E 170E
10 25 50 100 250 500 750 1000 1250 1500 2000
10

THANK YOU!!


Temp. diff in JJA, CLM(Em)−CRU, DomainS(iocnrough=2), 1998, ℃
Temp. diff in JJA, CLM(Em)−CRU, DomainS, 1998, ℃
Pre. diff in JJA, CLM(Em)−CRU, DomainS(iocnrough=2), 1998, %
Pre. diff in JJA, CLM(Em)−CRU, DomainS, 1998, %
60N
50N
40N
30N
20N
10N
EQ
10S
30E 40E 50E 60E 70E 80E 90E 100E 110E 120E 130E 140E 150E 160E 170E
−6 −4 −3 −2 −1 1 2 3 4 6
−250 −100 −50 −25 −10 10 25 50 100 250