

The Inter-Continental Transferability Study

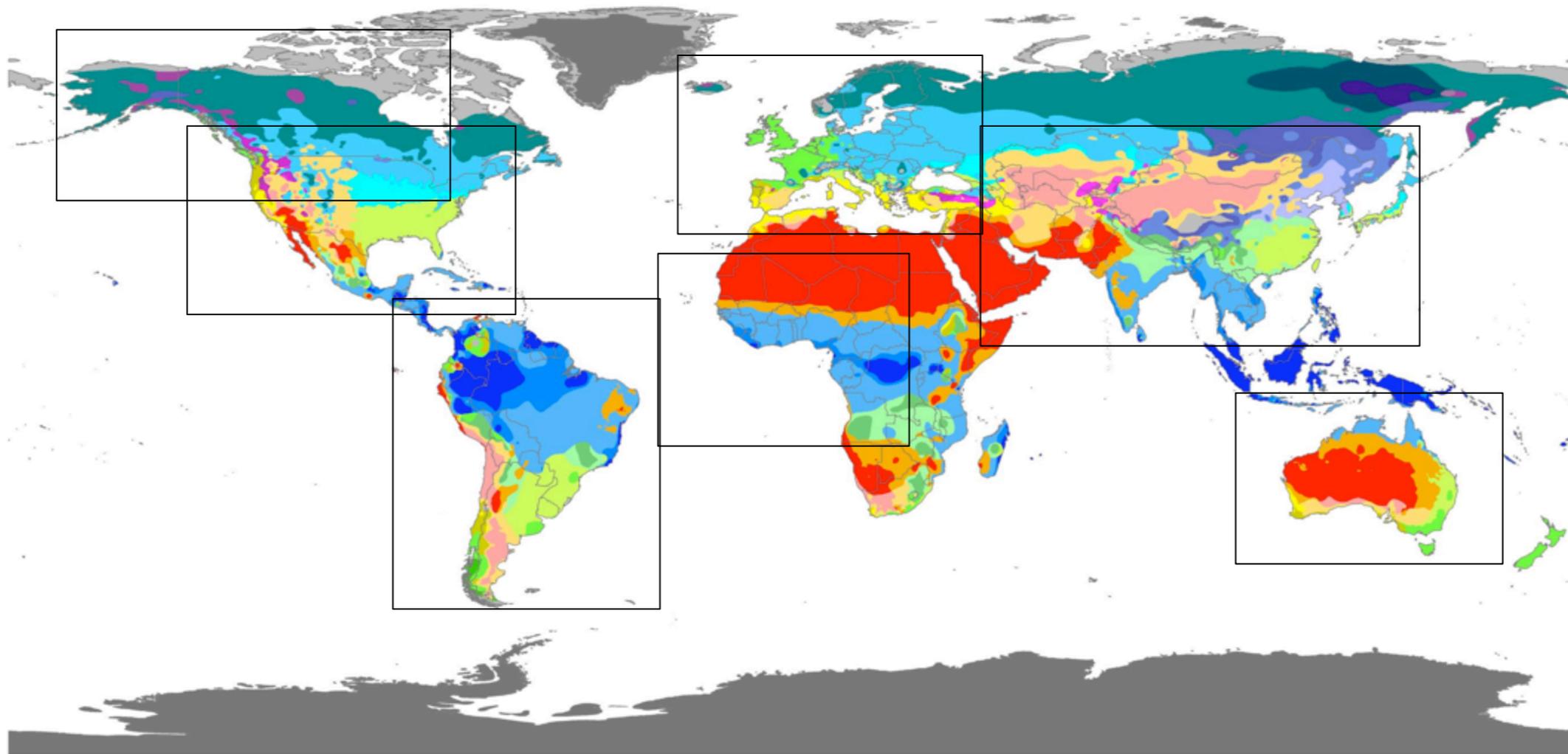
as part of CEOP/GEWEX

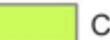
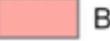
Study the transferability of regional climate models to areas of different climate regimes (RHP domains)

Apply CEOP data (satellite, reference sites, global analysis) to evaluate the regional climate models

ICTS Domains

World map of Köppen-Geiger climate classification



 Af	 BWh	 Csa	 Cwa	 Cfa	 Dsa	 Dwa	 Dfa	 ET
 Am	 BWk	 Csb	 Cwb	 Cfb	 Dsb	 Dwb	 Dfb	 EF
 Aw	 BSh	 Cwc	 Cfc	 Dsc	 Dwc	 Dfc		
	 BSk			 Dsd	 Dwd	 Dfd		

Contact : Murray C. Peel (mpeel@unimelb.edu.au) for further information

DATA SOURCE : GHCN v2.0 station data
Temperature (N = 4,844) and
Precipitation (N = 12,396)

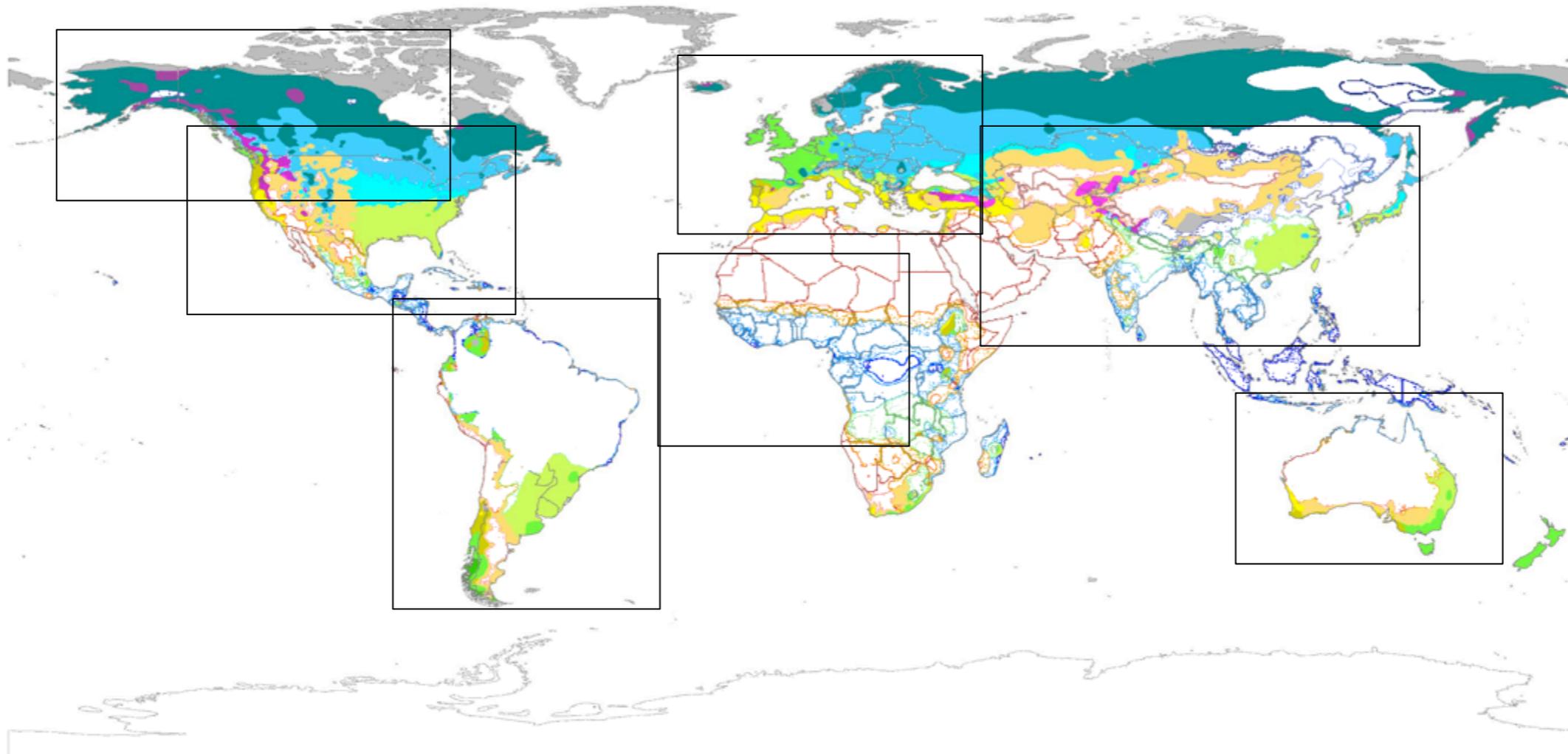
PERIOD OF RECORD : All available

MIN LENGTH : ≥ 30 for each month.

RESOLUTION : 0.1 degree lat/long

ICTS Domains

World map of Köppen-Geiger climate classification



Af	BWh	Csa	Cwa	Cfa	Dsa	Dwa	Dfa	ET
Am	BWk	Csb	Cwb	Cfb	Dsb	Dwb	Dfb	EF
Aw	BSh	Cwc	Cfc	Dsc	Dwc	Dfc		
	BSk			Dsd	Dwd	Dfd		

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CEOP 1 Time schedule

Year of Activity: '00 '01 '02 '03 '04 '05 '06 '07

Planning



Data Collection



EOPs :

EOP-1 (Seasonal OP)



EOP-2 (Build-up OP)



EOP-3 (Annual Cycle OP)



EOP-4 (Water & Energy OP)



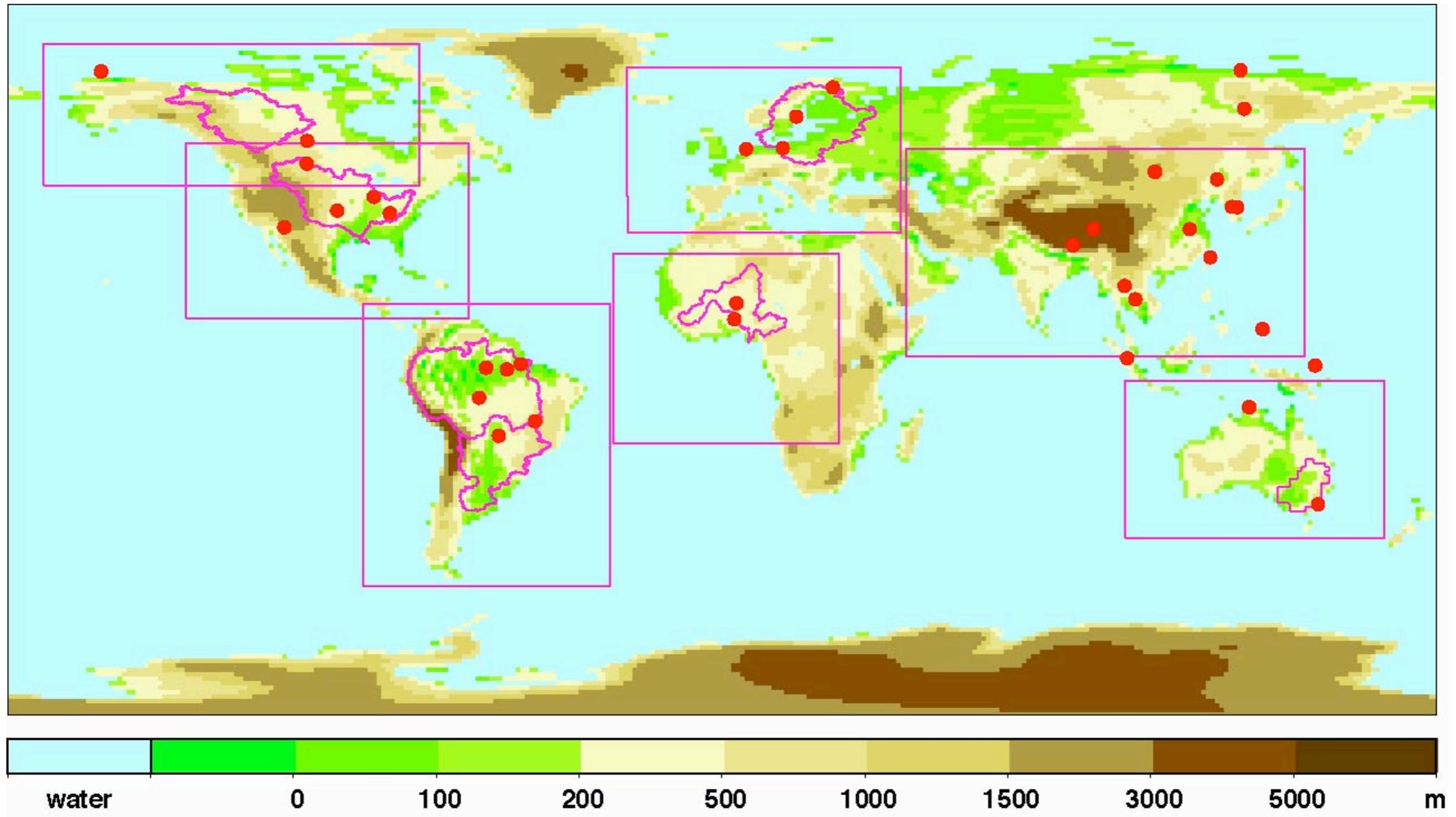
Primary Focus 2 Annual Cycle Data Set (2003 – 2004)

Reanalysis/Research



- CLM (Climate version of the COSMO model) / GKSS, EU
- CRCM (Canadian Regional Climate Model) / Ouranos, NA
- GEM-LAM (Global Environmental Multiscale Limited Area Model) / RPN/MSC and UQ, NA
- RSM (Regional Spectral Model) / ECPC, NA
- RCA3 (Rossby Centre Atmosphere Model) / SMHI, EU

- RegCM3 (Regional Climate Model) / ISU, NA
- MM5 (Mesoscale-Model) / ISU, NA



Reference Sites ●

Data in CEOP Model Data Archive at WDCC / Hamburg

Data from 4 Regional Climate Models:

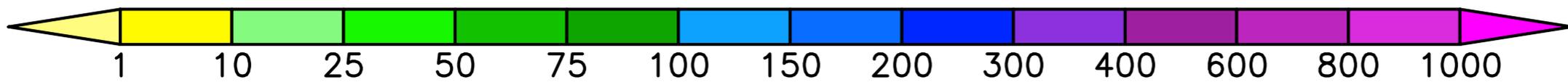
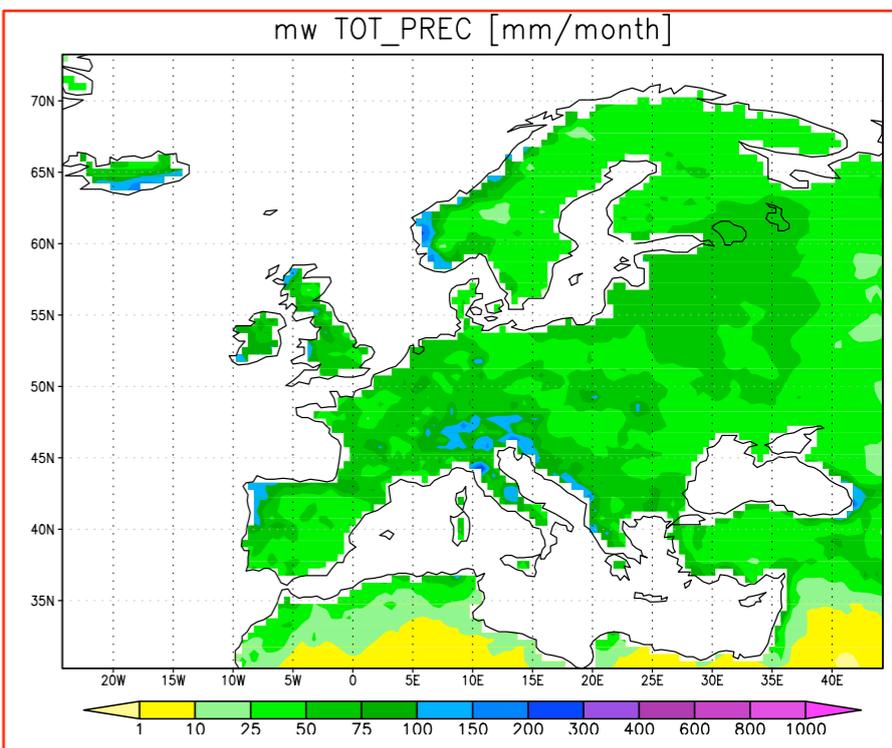
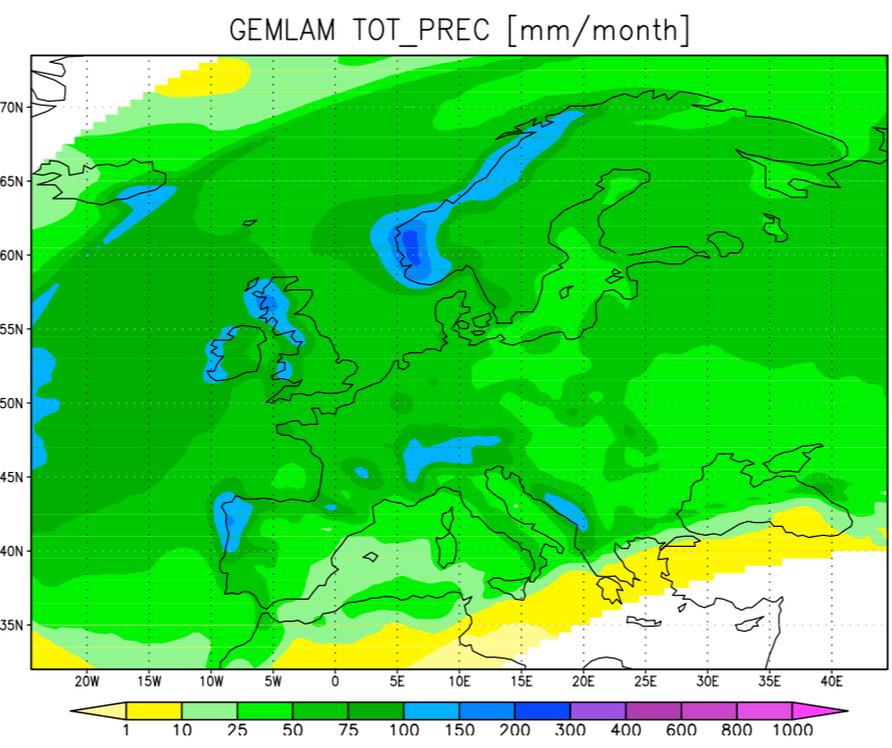
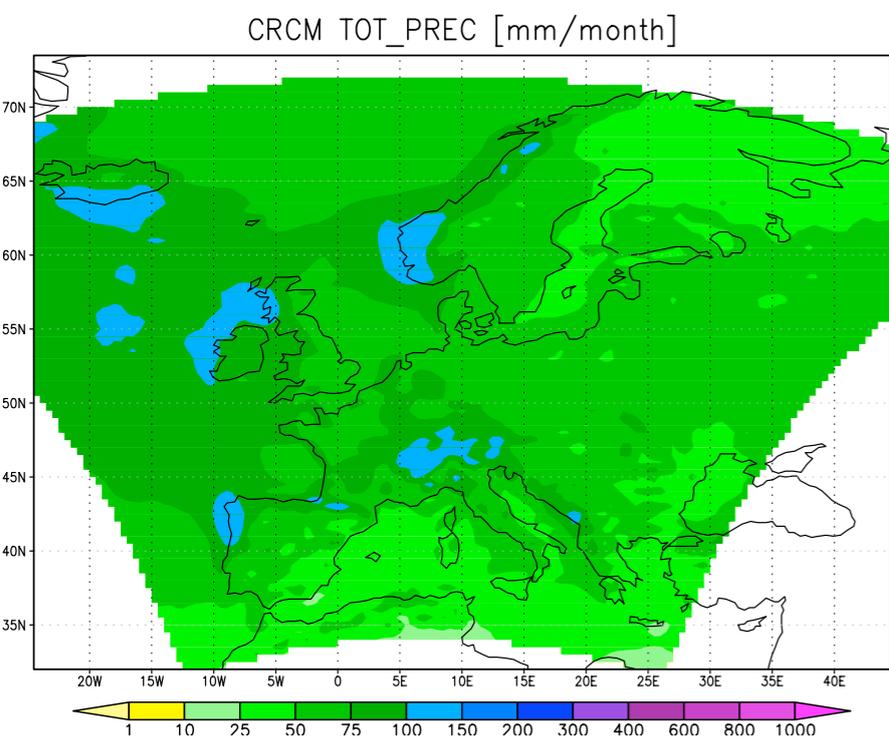
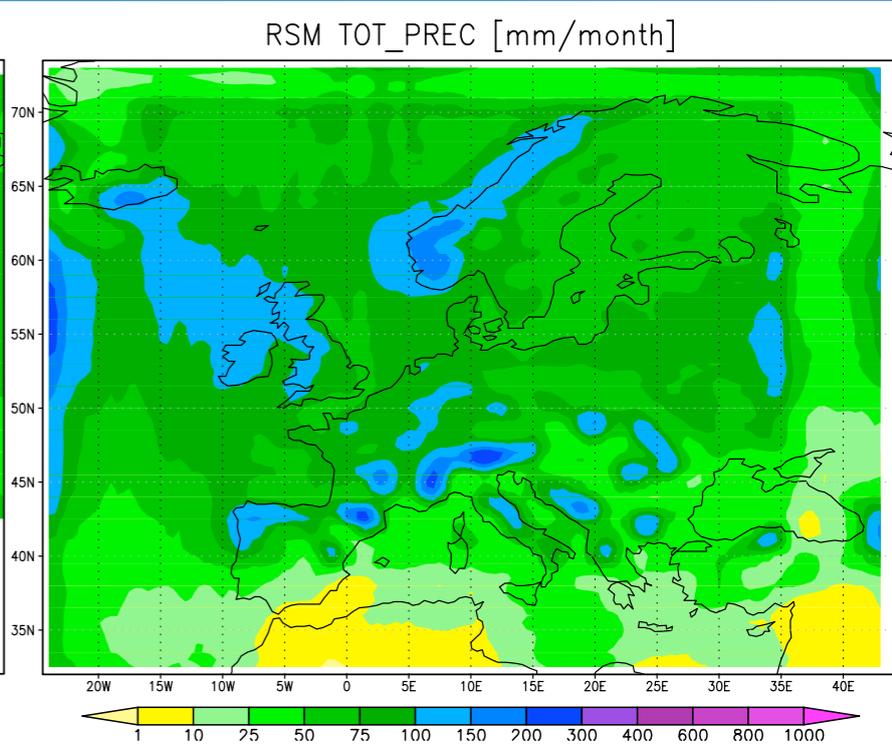
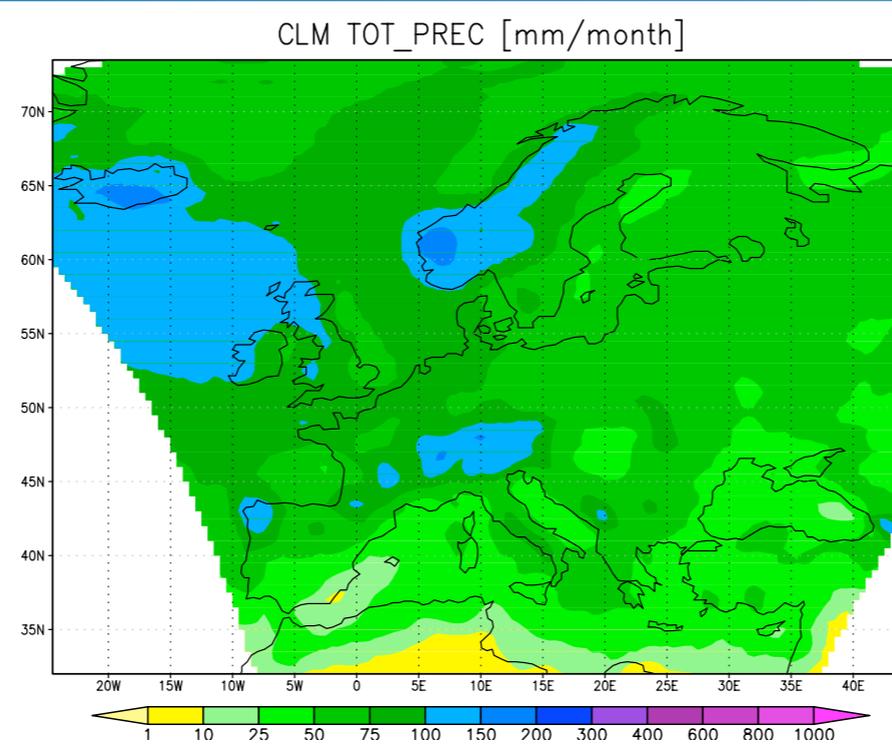
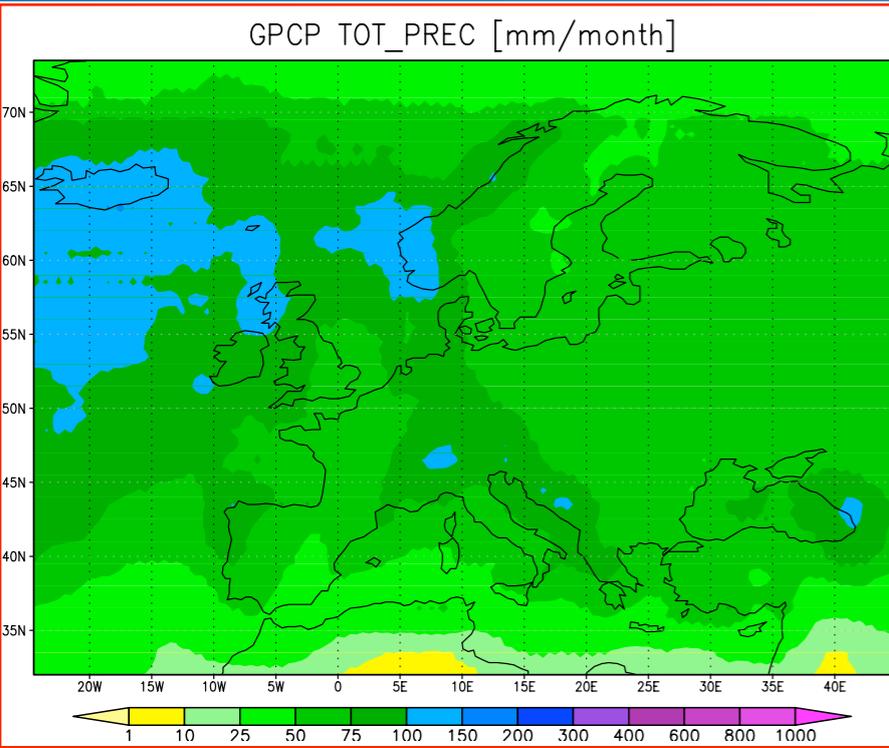
MOLTS at 34 reference site locations

- one grid box plus 8 adjacent
- up to 44 parameters
- 1 - 3 h temporal resolution

Gridded 2D fields for 7 Domains

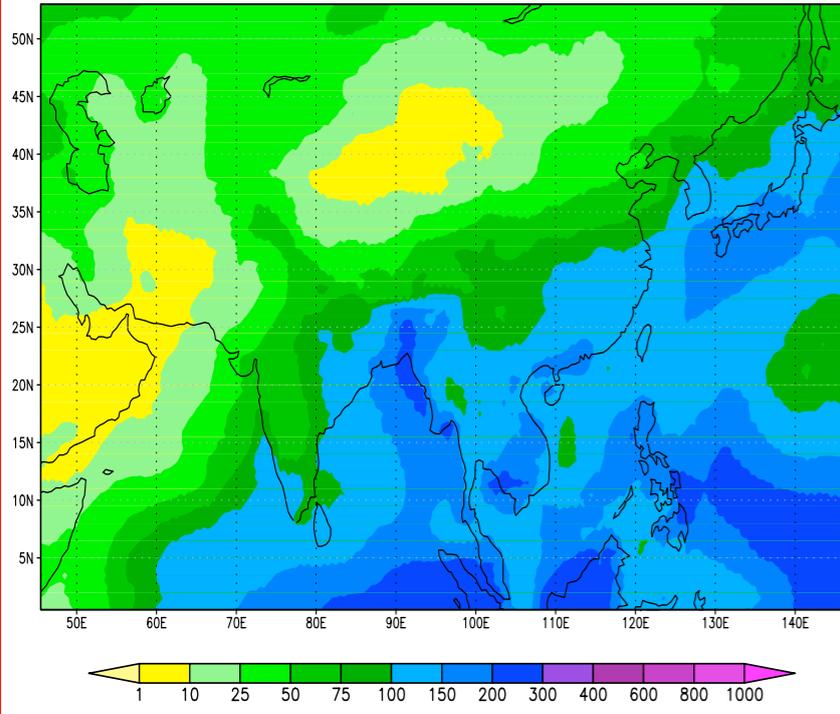
- 0.5 common grid
- up to 36 parameters
- 1 d temporal resolution

Monthly Mean Precipitation

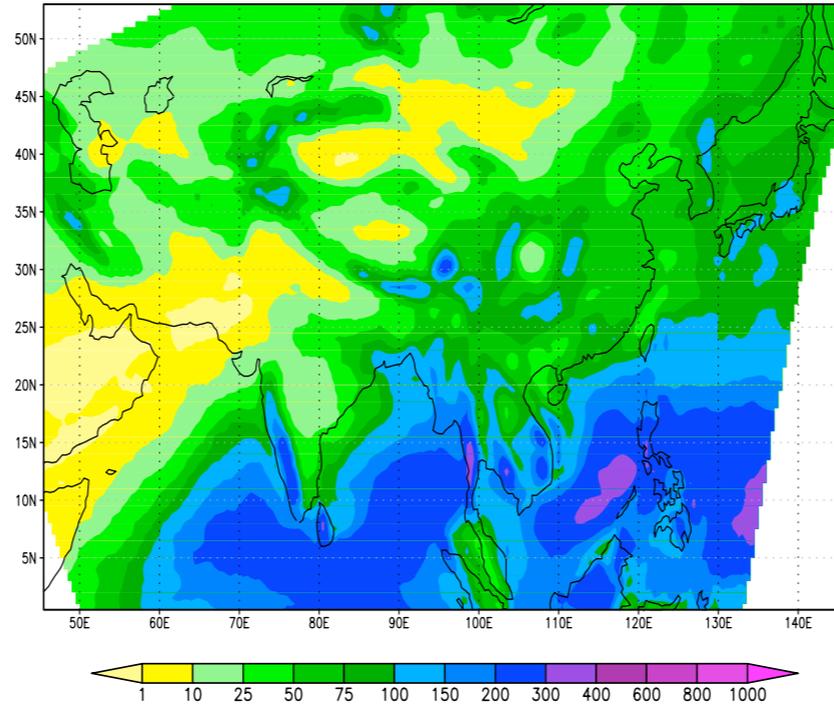


Monthly Mean Precipitation

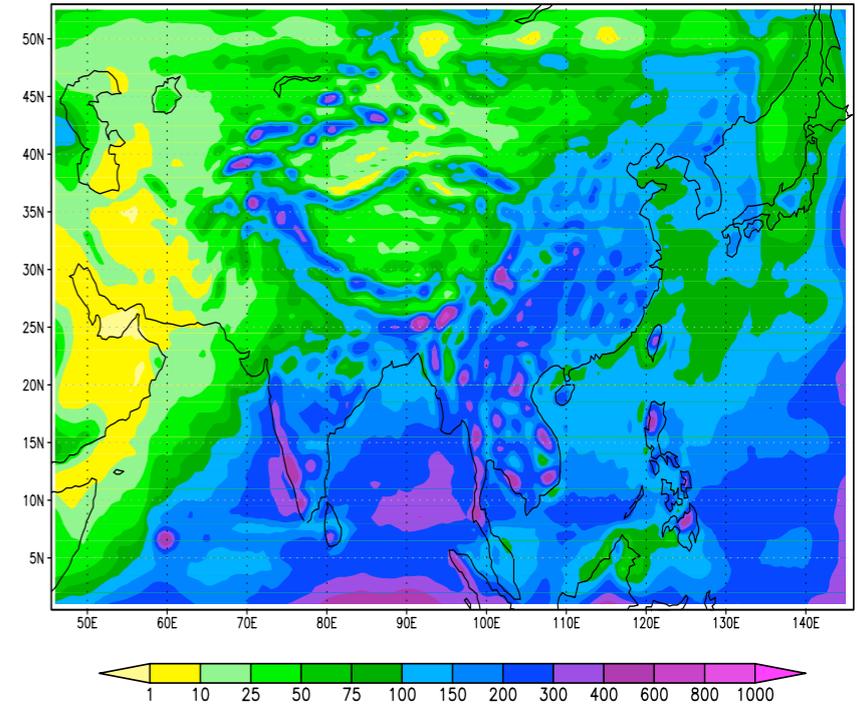
GPCP TOT_PREC [mm/month]



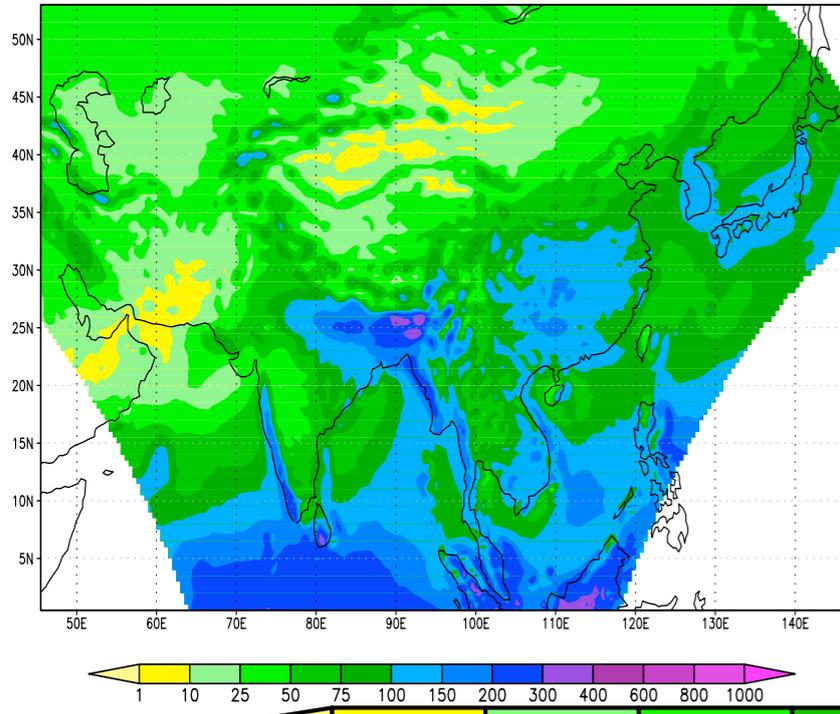
CLM TOT_PREC [mm/month]



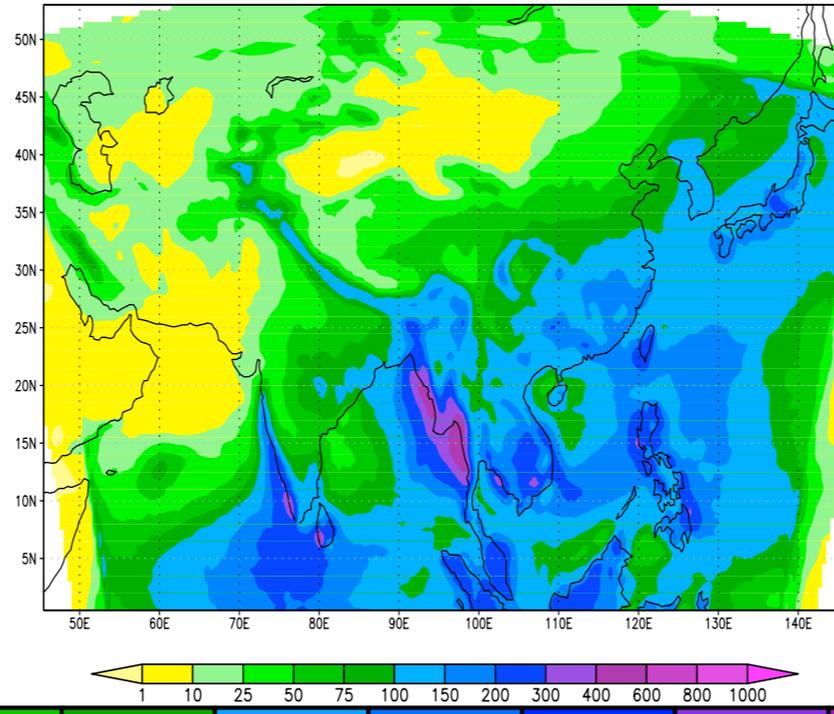
RSM TOT_PREC [mm/month]



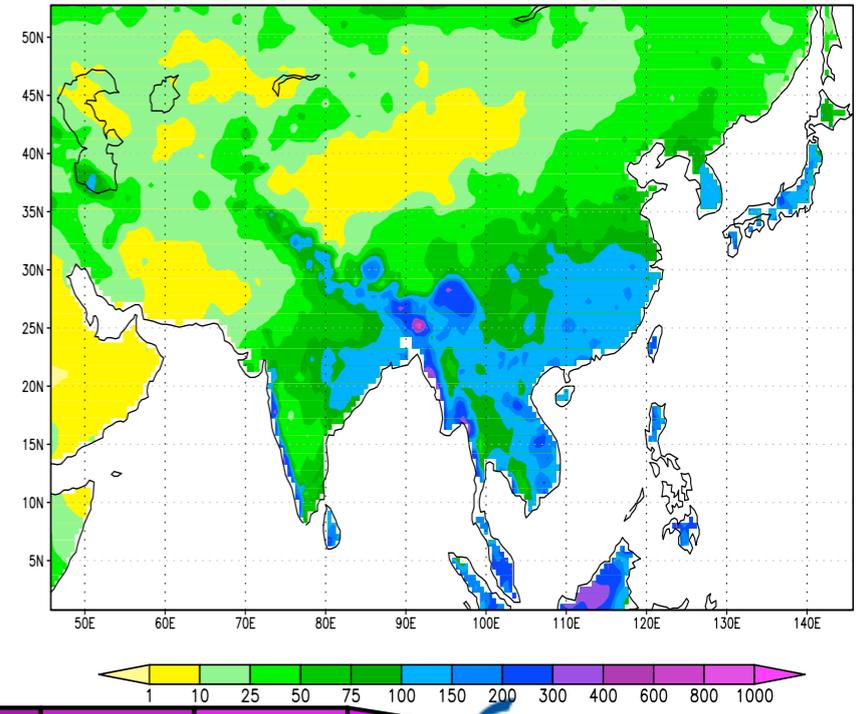
CRCM TOT_PREC [mm/month]



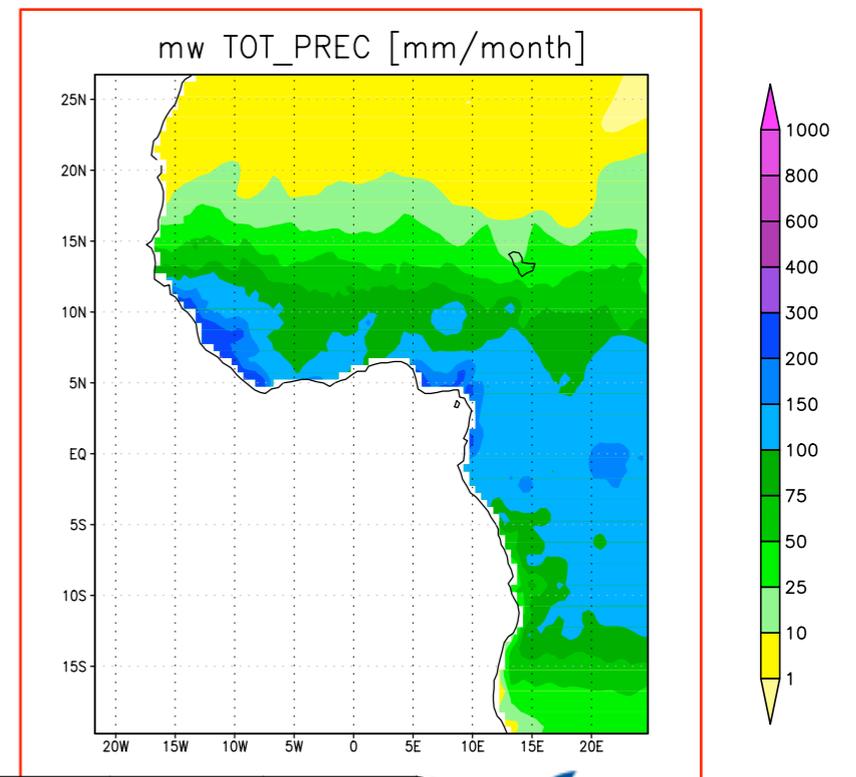
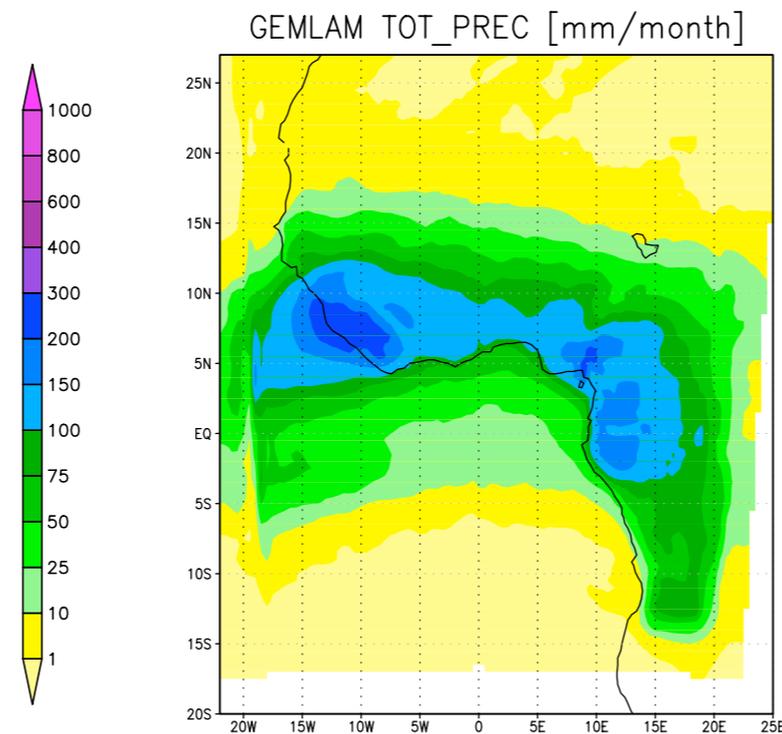
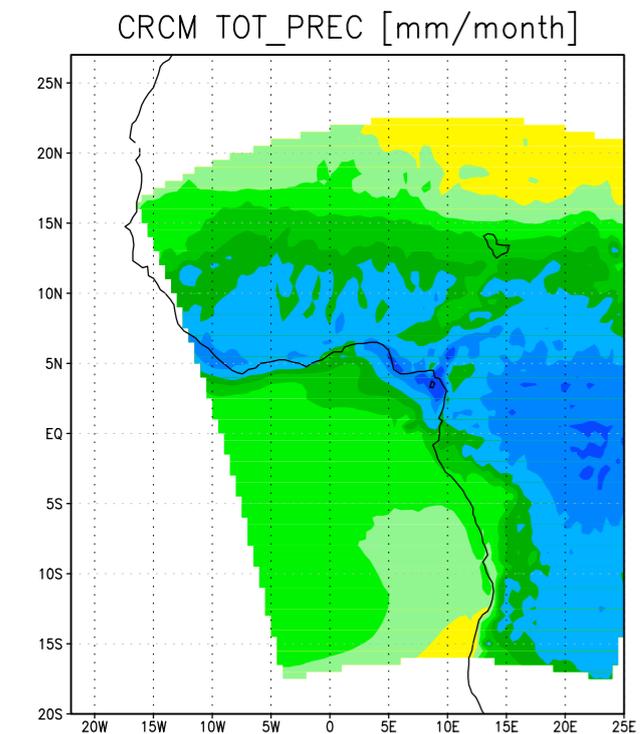
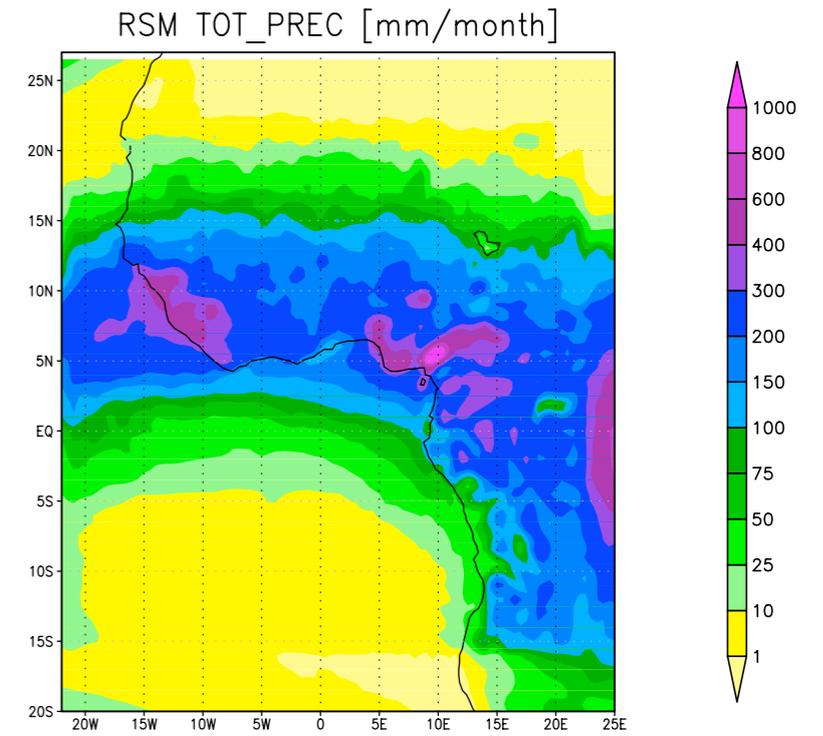
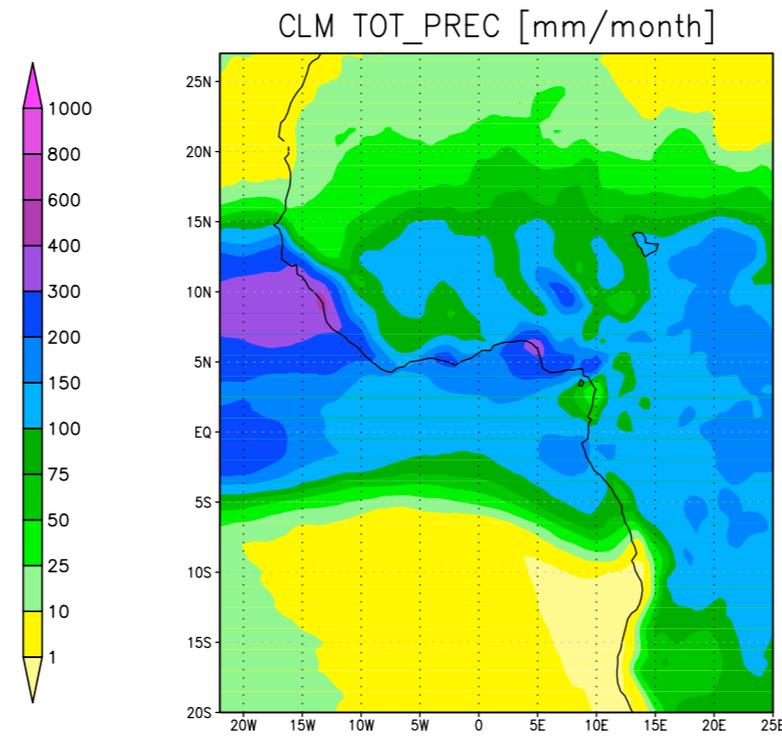
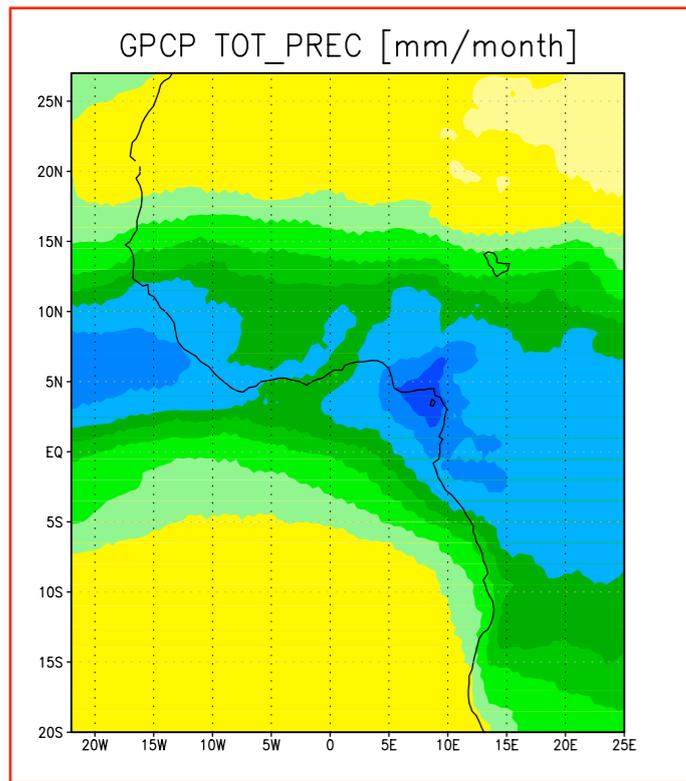
GEMLAM TOT_PREC [mm/month]



mw TOT_PREC [mm/month]

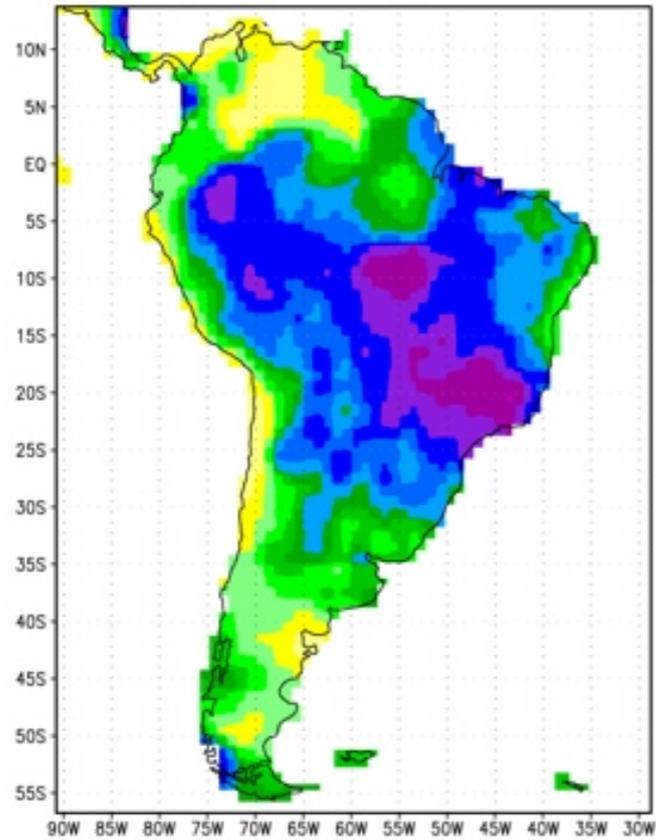


Monthly Mean Precipitation

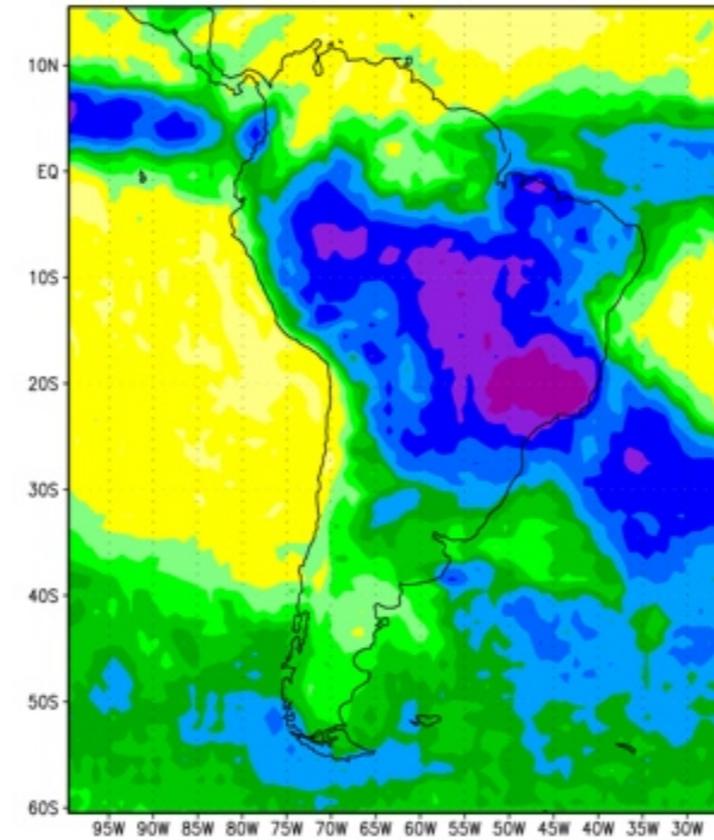


Monthly Mean Precipitation

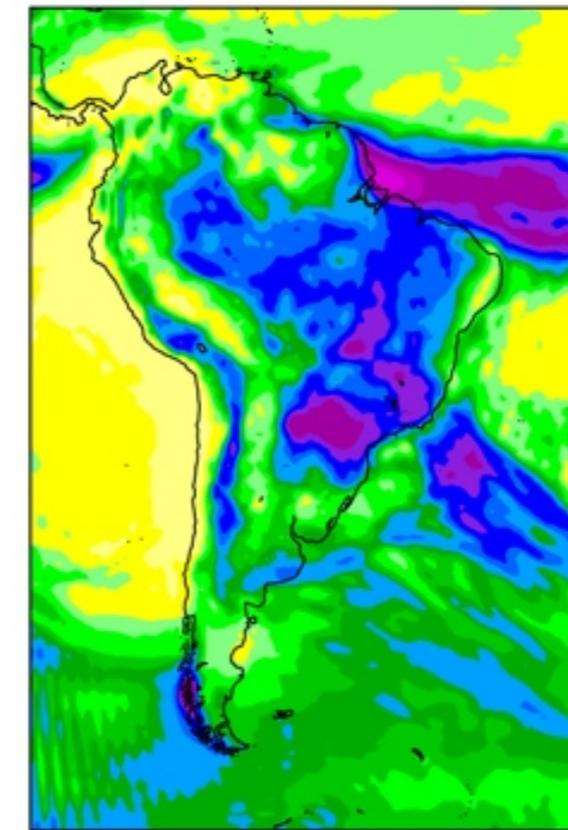
TOT_PREC [mm/month] Jan 2003 GPCP



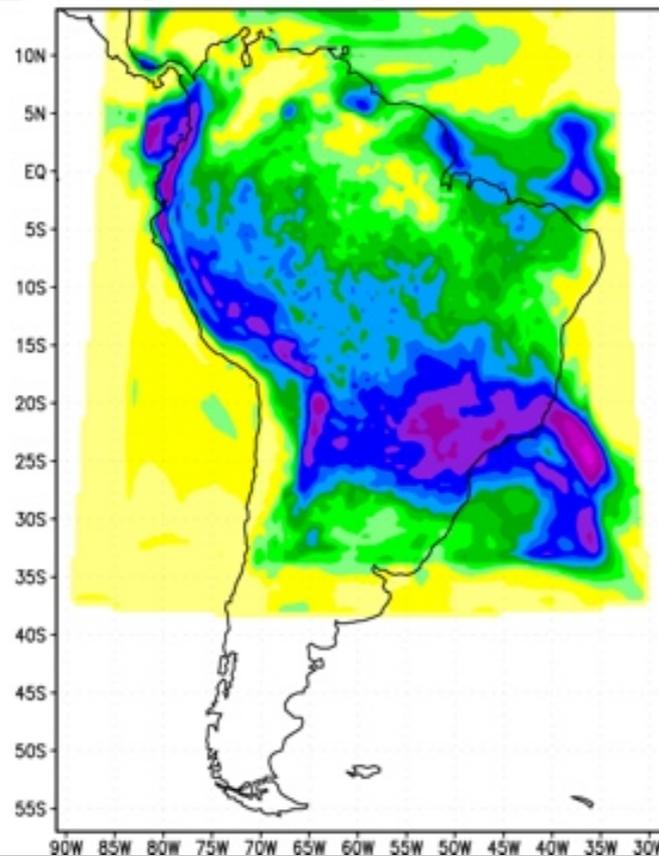
TOT_PREC [mm/month] Jan 2003 GPCP



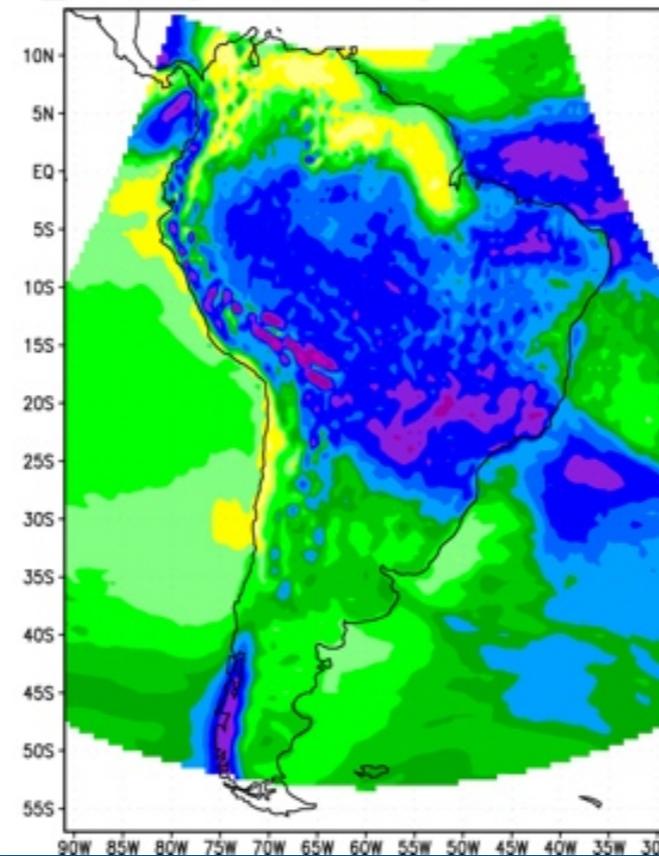
TOT_PREC [mm/month] Jan 2003 CLM



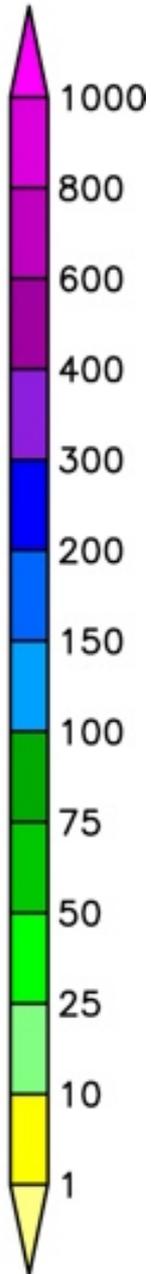
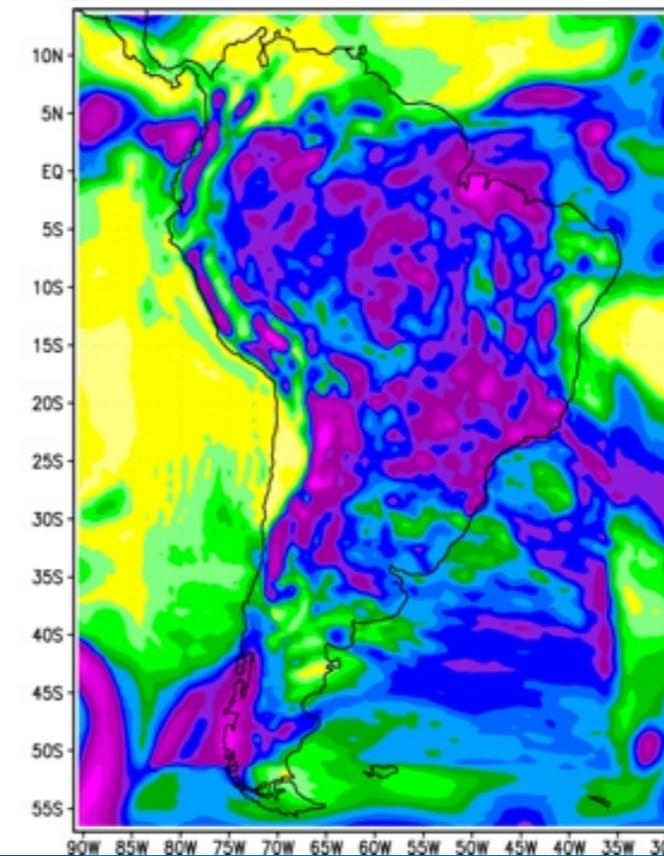
TOT_PREC [mm/month] Jan 2003 GEM-LAM



TOT_PREC [mm/month] Jan 2003 MRCC

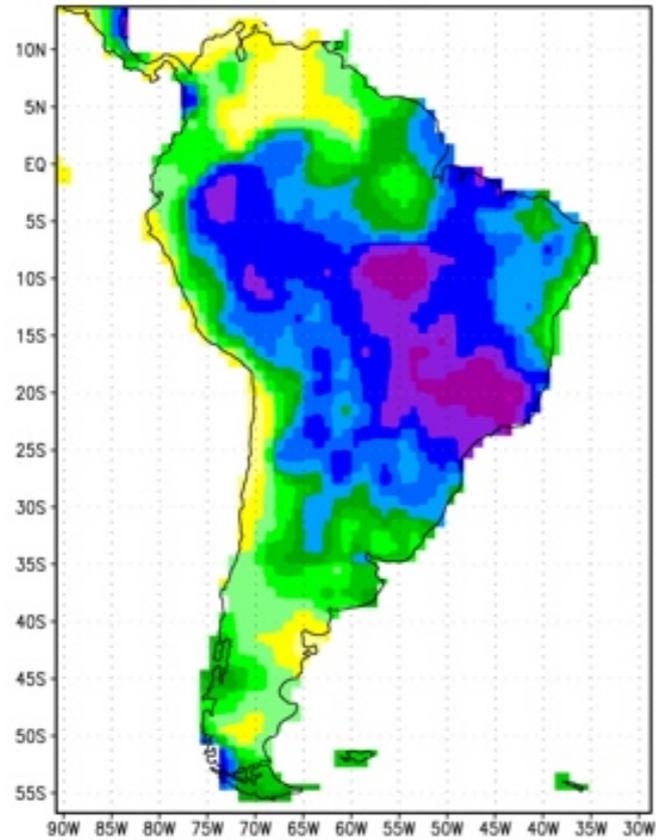


TOT_PREC [mm/month] Jan 2003 RSM

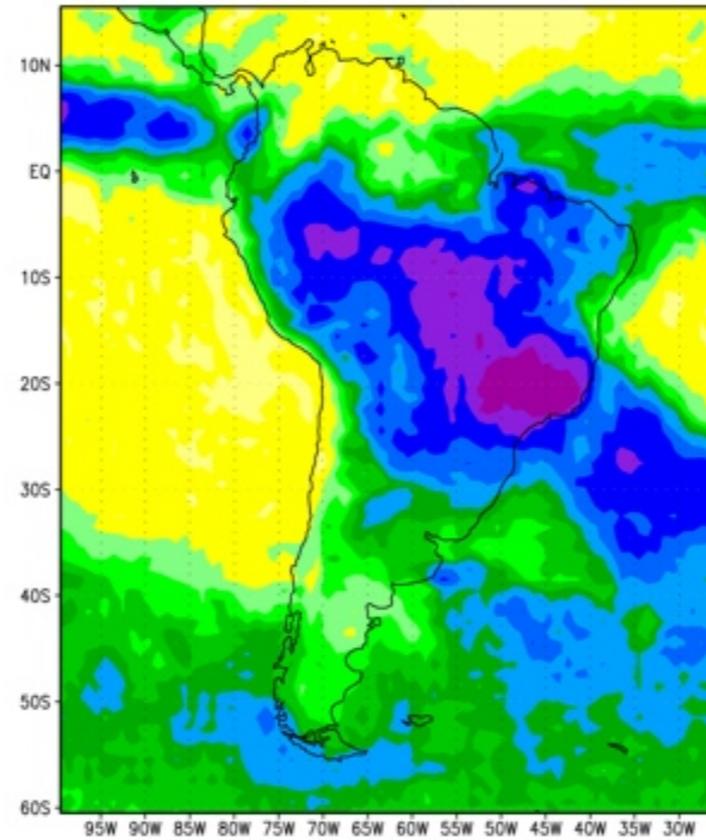


Monthly Mean Precipitation

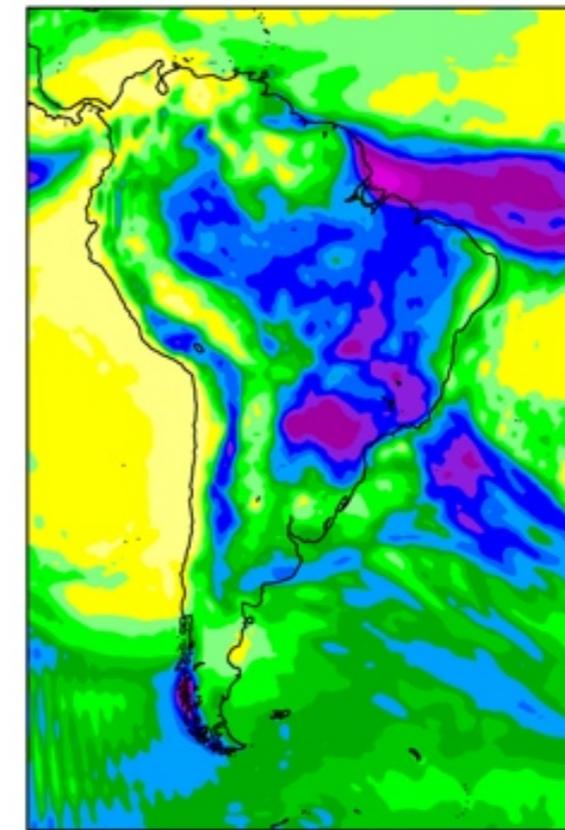
TOT_PREC [mm/month] Jan 2003 GPCP



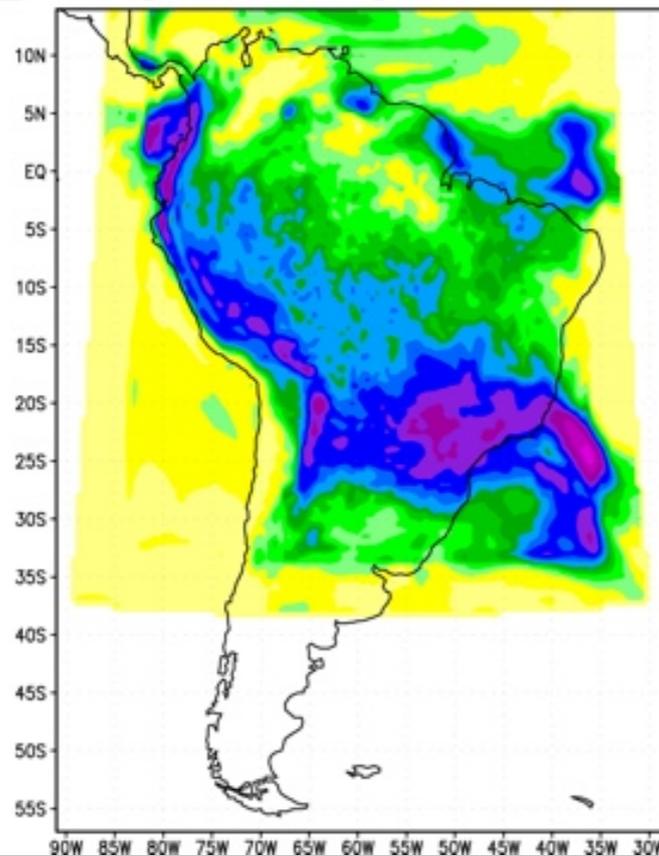
TOT_PREC [mm/month] Jan 2003 GPCP



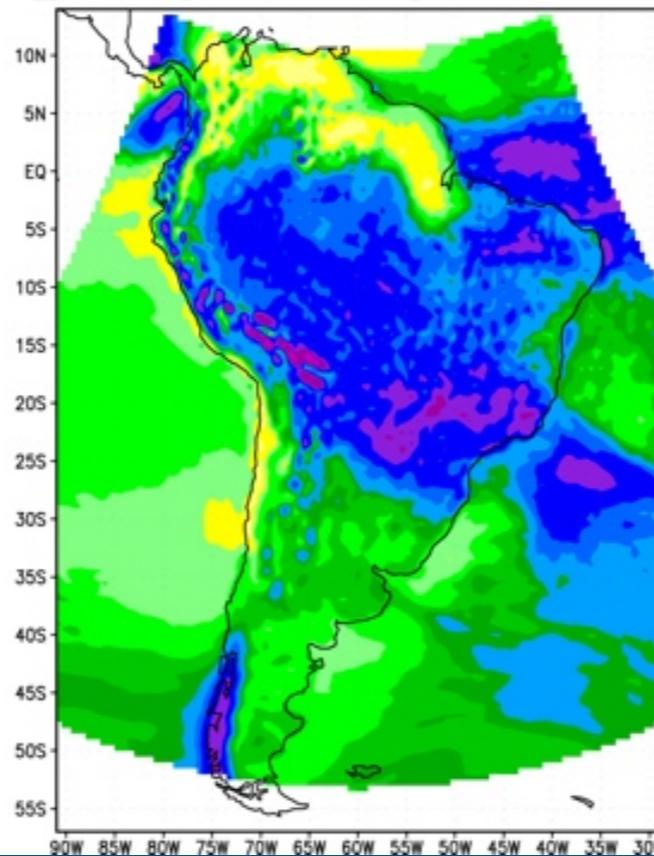
TOT_PREC [mm/month] Jan 2003 CLM



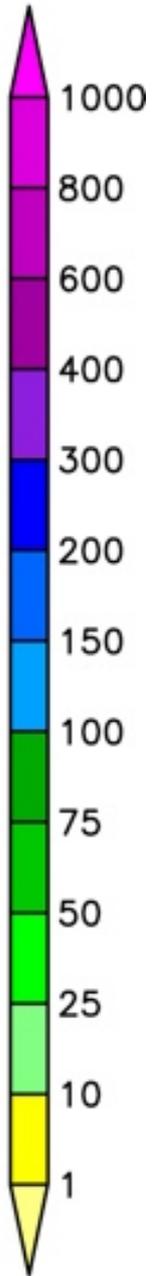
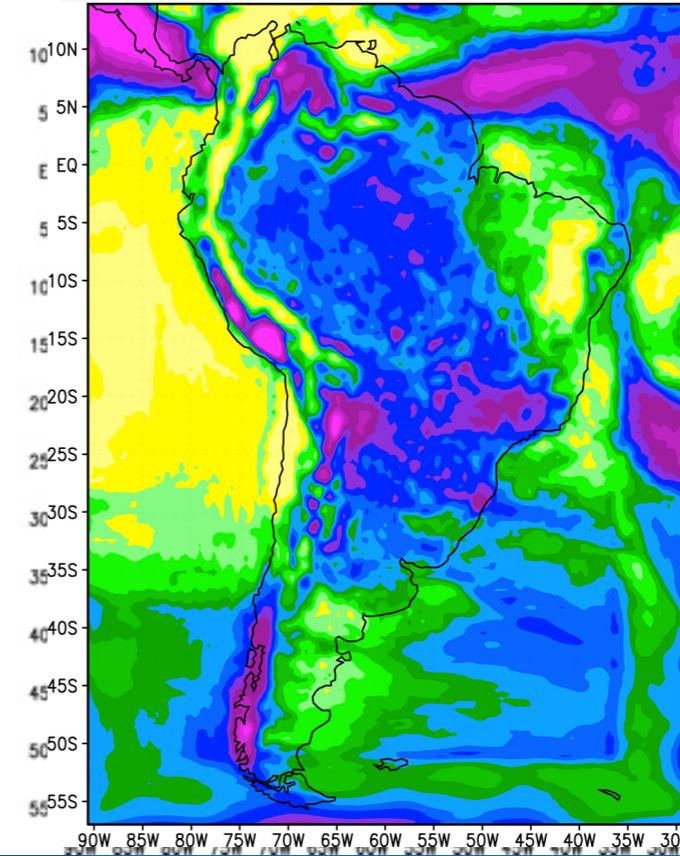
TOT_PREC [mm/month] Jan 2003 GEM-LAM

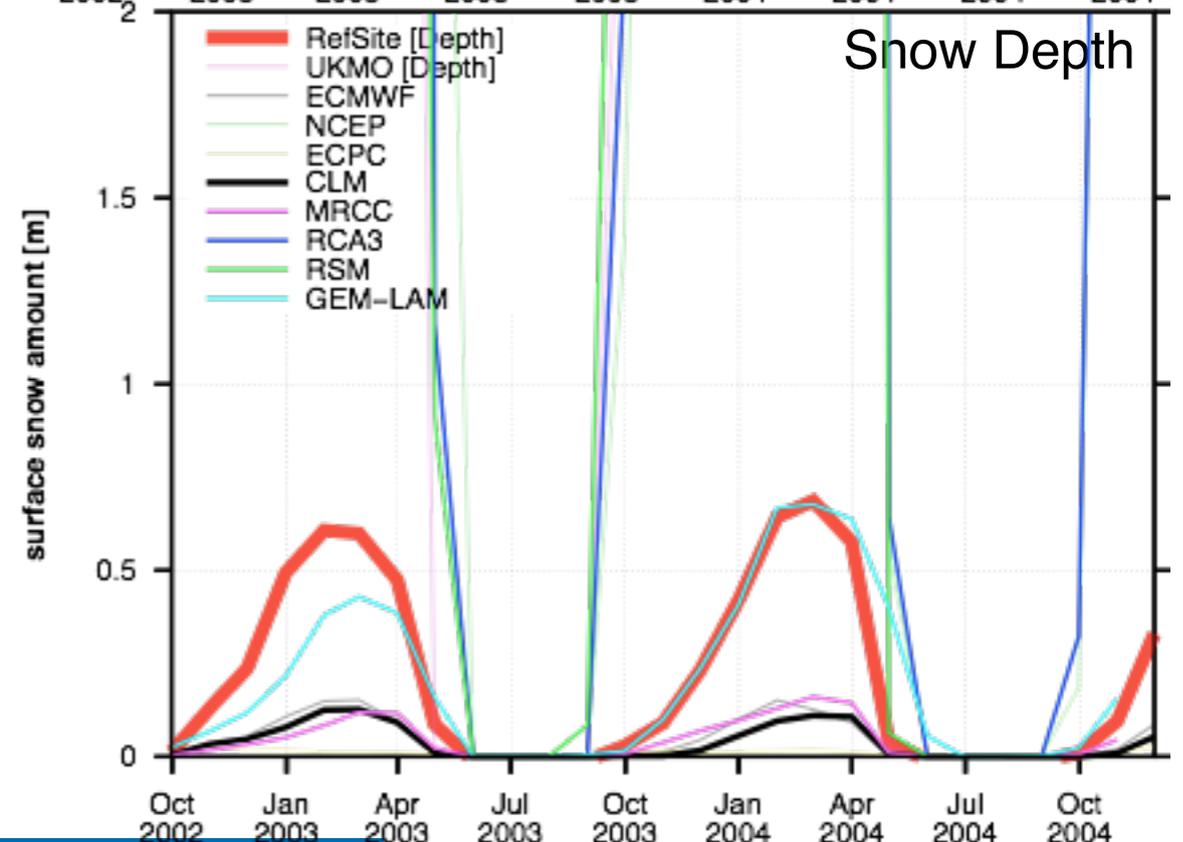
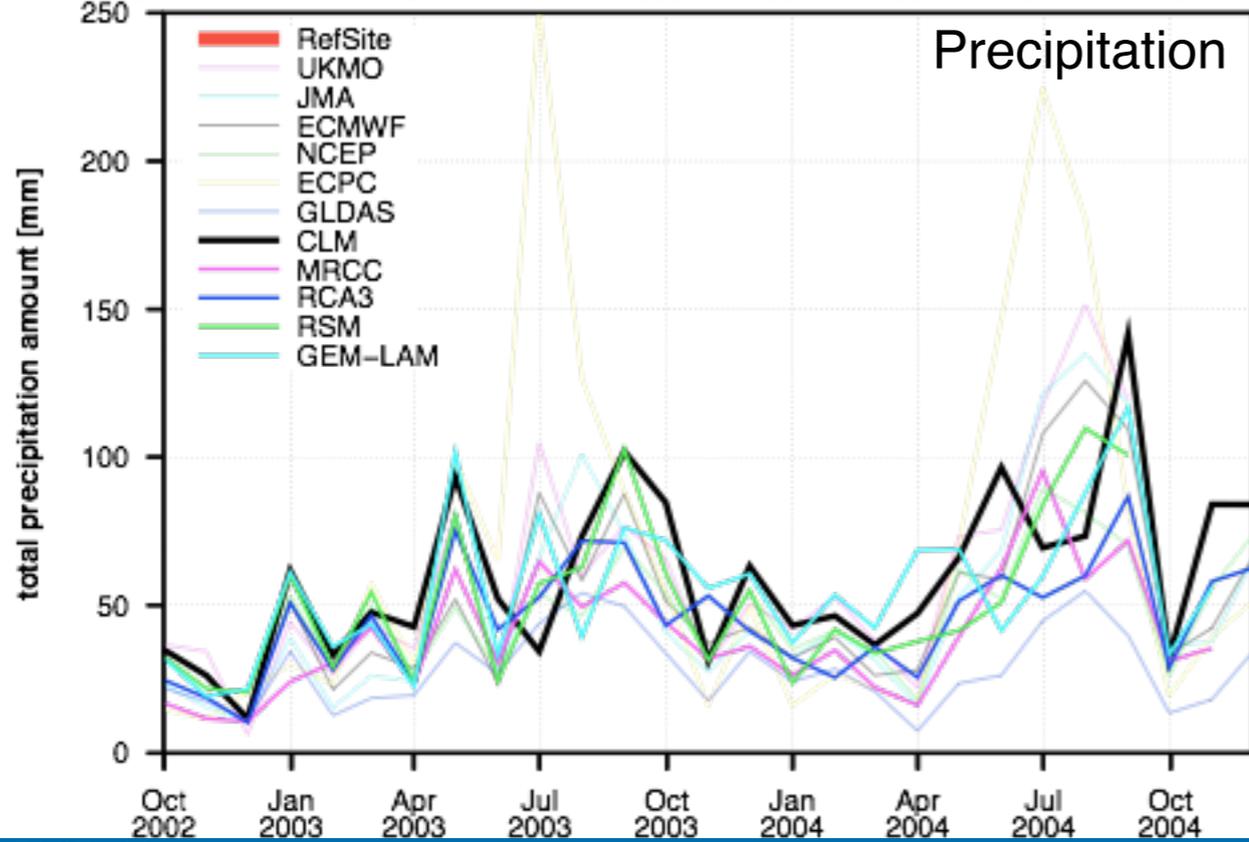
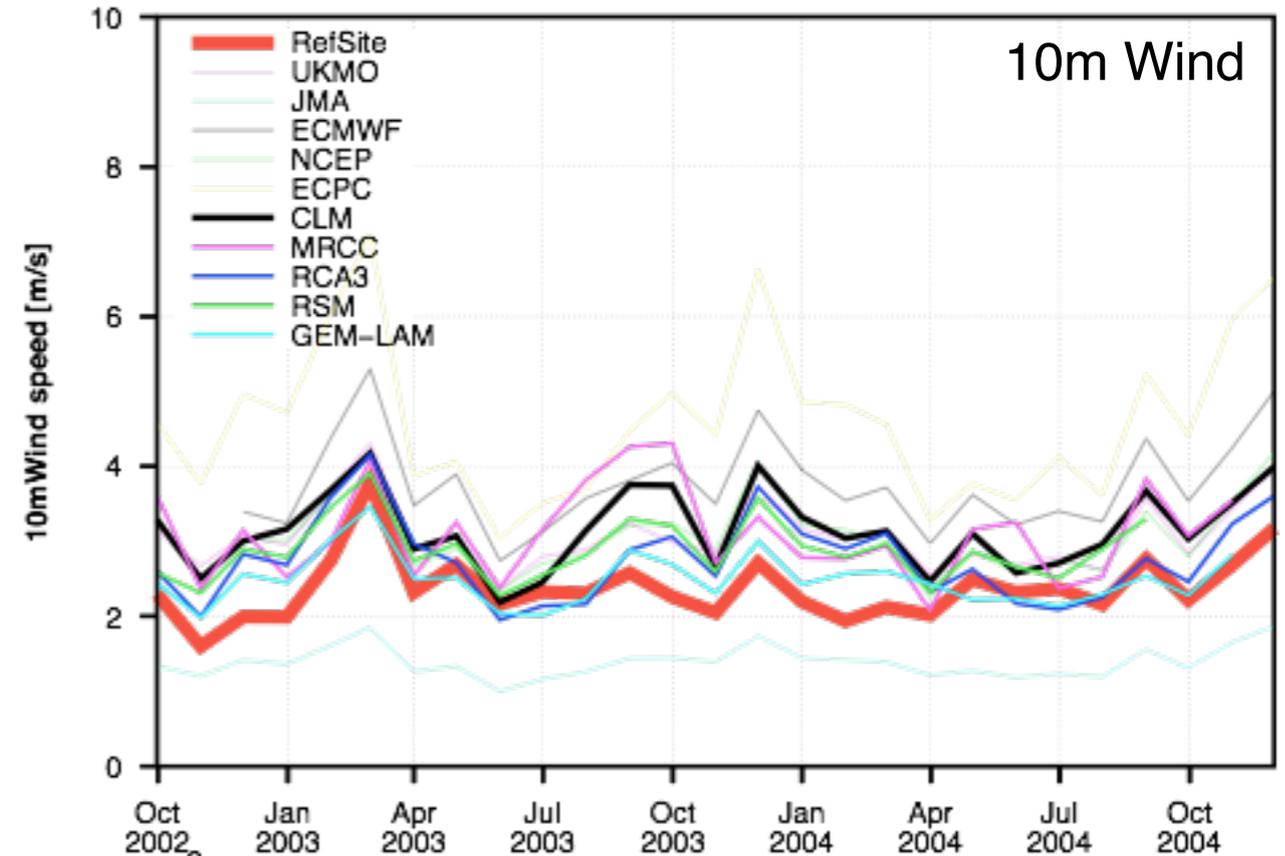
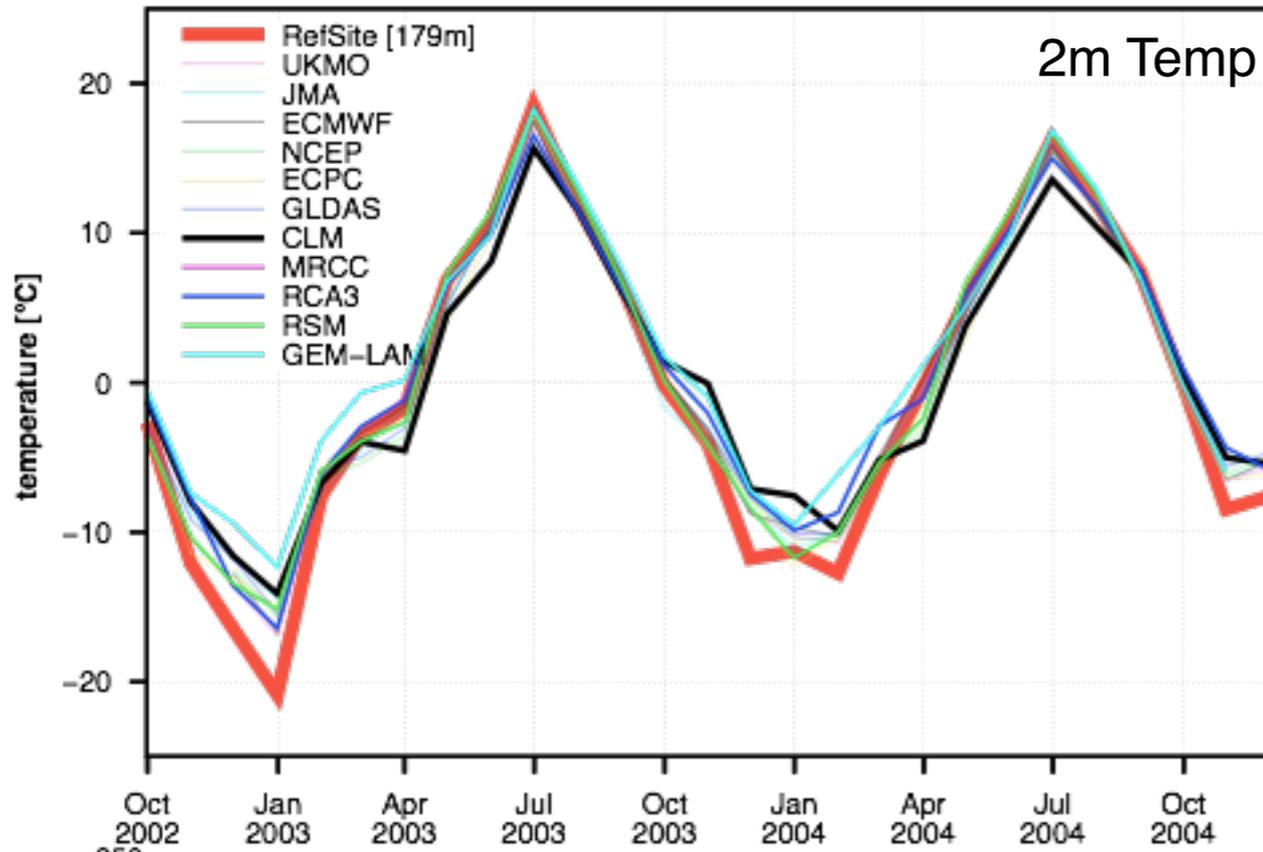


TOT_PREC [mm/month] Jan 2003 MRCC

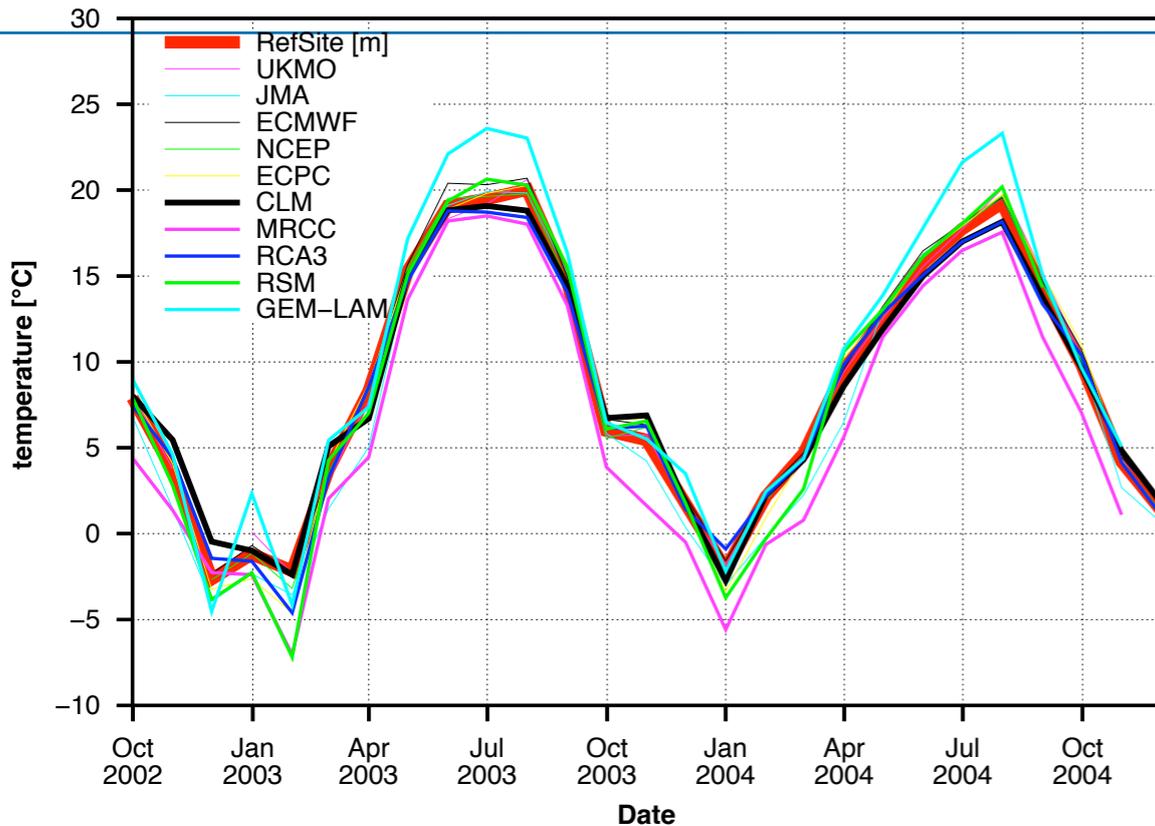


TOT_PREC [mm/month] Jan 2003 RSM

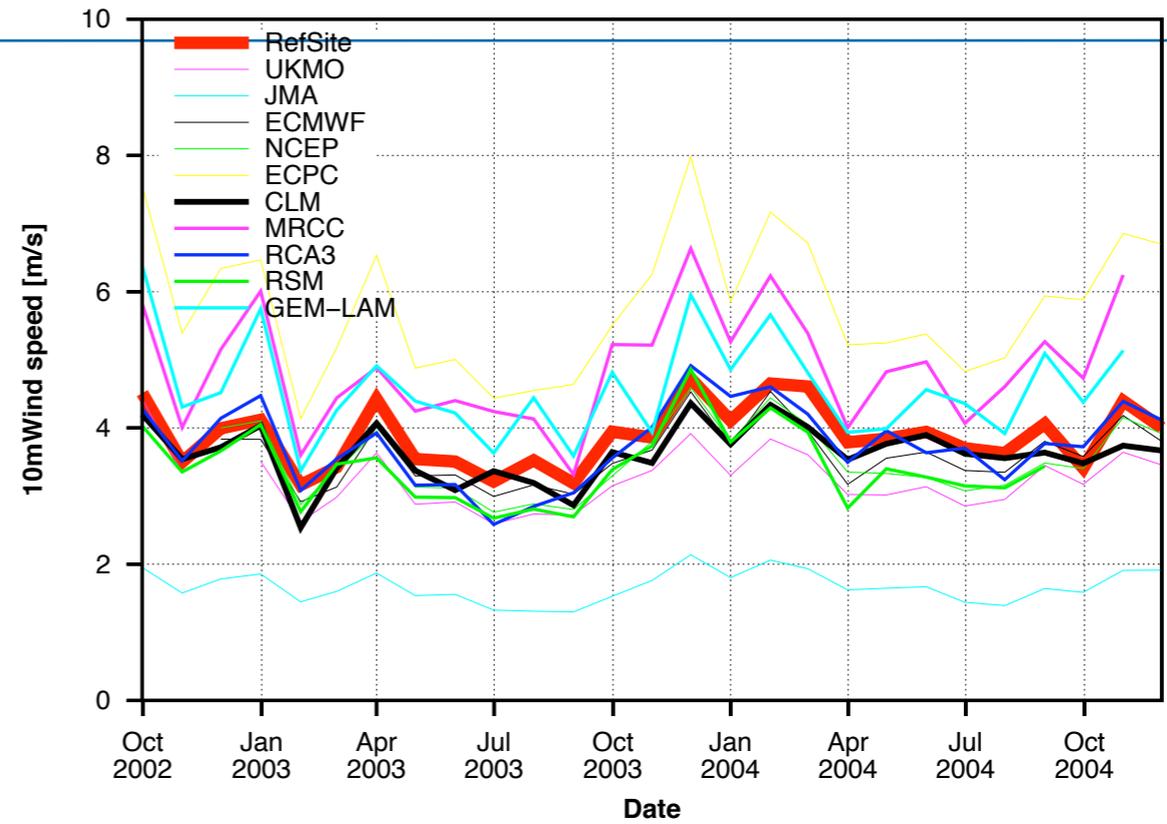




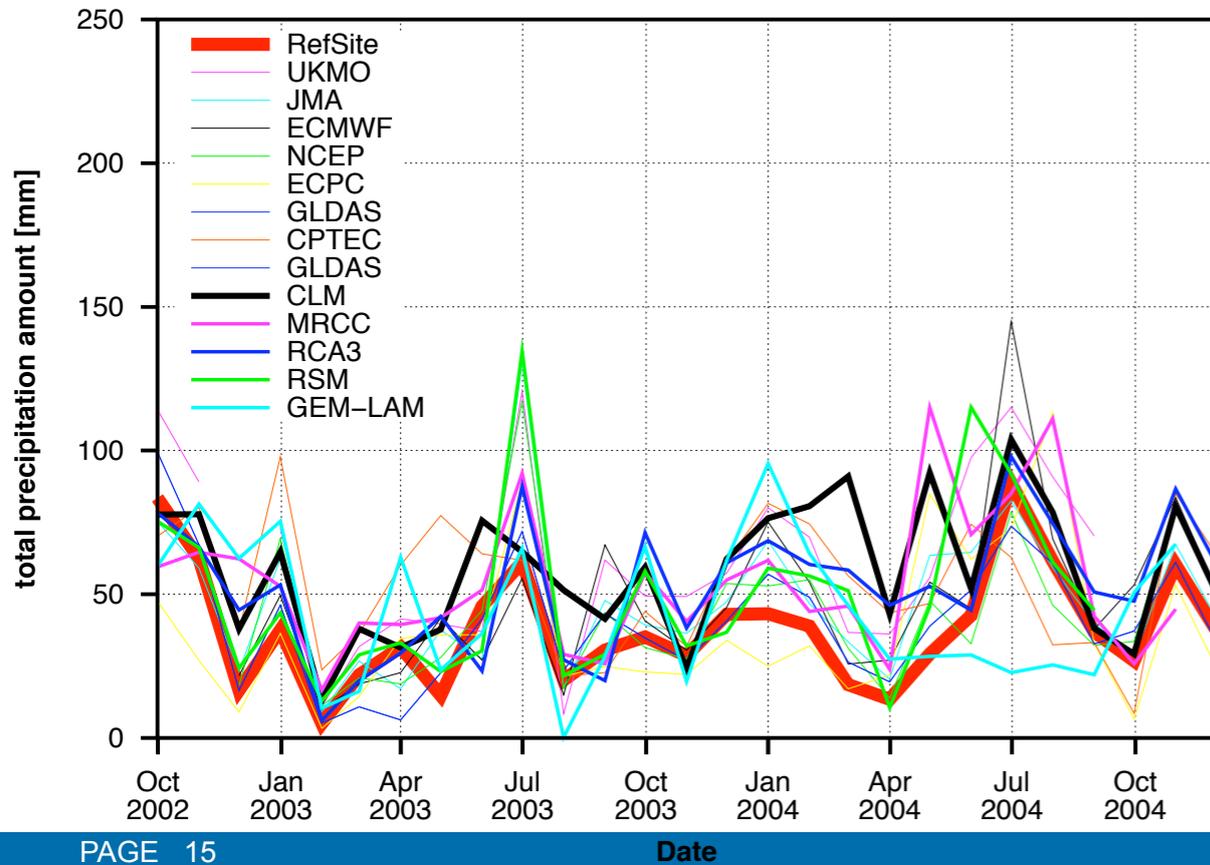
T₂M corrected to Height of RefSite



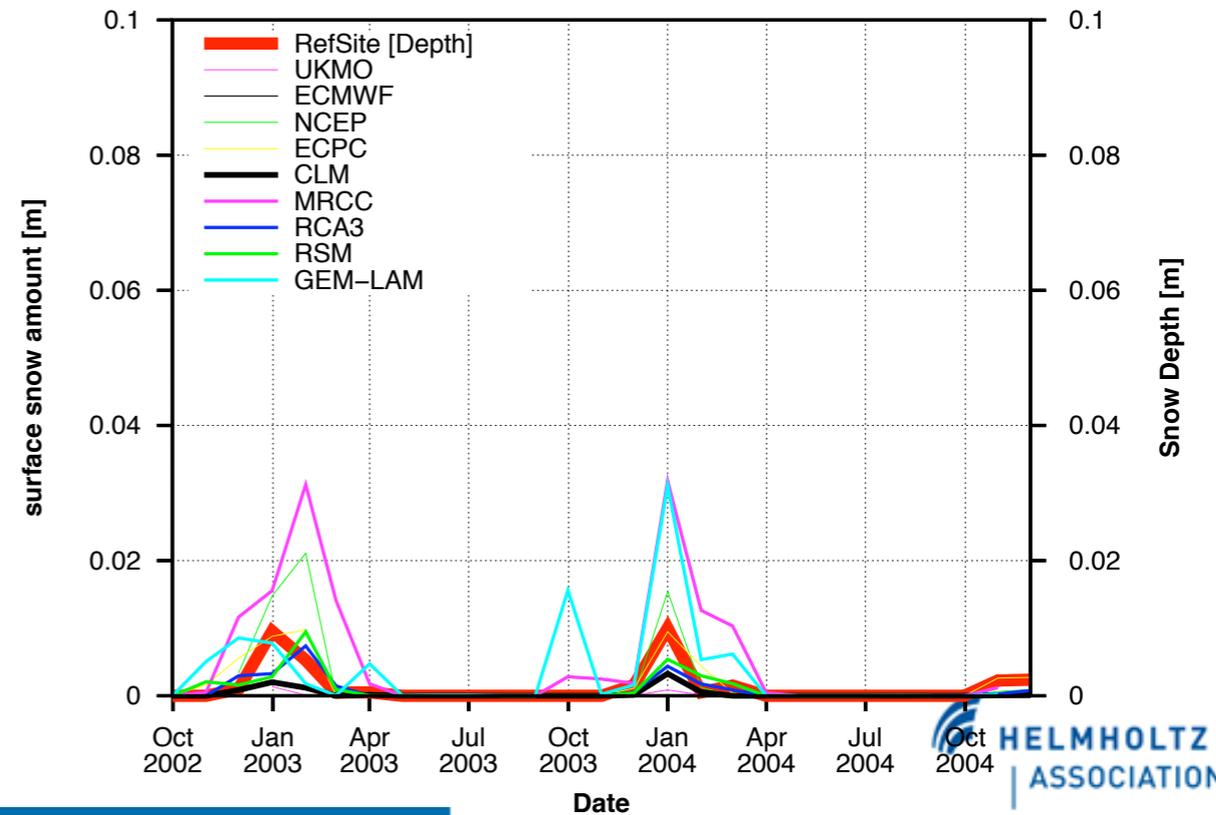
Wind Speed 10m



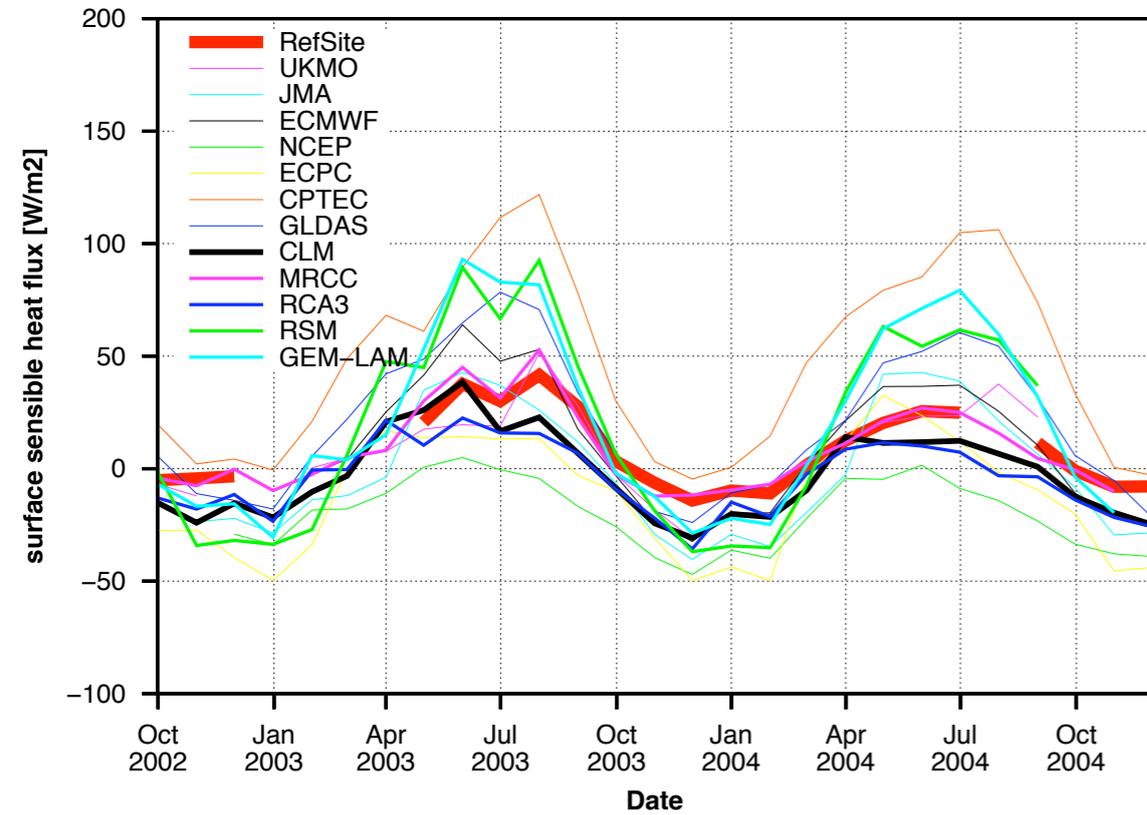
Precipitation



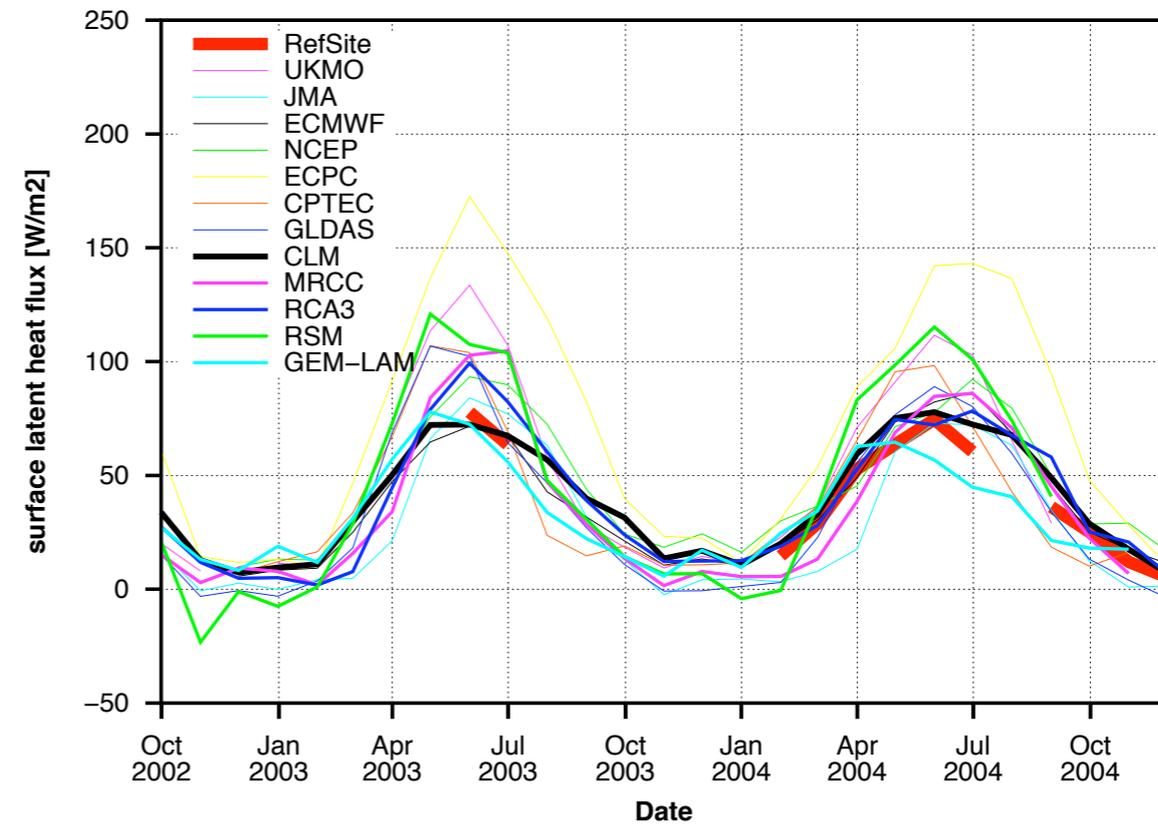
Snow Depth



Sensible Heat



Latent Heat



- Further analysis of Simulations performed in CEOP1
- Simulations with higher resolution
- forcing by different global analyses for areas where differences between global analyses are significant
- enhanced simulation period (beyond 2004 i.e. for CEOP2, 10 years)
- additional MOLTS
- additional domain (NEESPI)
- revision of output parameter list
- update with new model versions