

Figure captions

Fig. S1. As Figure 2, with more lines from UEA, GISS and CICS/ESSIC data sets.

Fig. S2. Spatial structure of precipitation anomaly trend (using fixed P_1) from (a) GPCP, (b) AMIP5, (c) CMIP historical and (d) RCP 4.5 data sets. The data periods are from 1988-2008 for GPCP and AMIP5 data sets, 1979-2005 for CMIP5 historical data and 2006-2055 for RCP 4.5 data set. Please note the non-linear colour bars.

Fig. S3. Similar to the left column of Figure 4, but for the wettest and driest months in each year at each grid point.

TABLE S1. Correlation coefficients between different data sets over period 1979-2008.
Statistically significant coefficients are in bold. Top triangle is for wet tropical land
and lower triangle is for dry tropical land.

	GPCP	GPCC	UEA	CICS/ESSIC	GISS	MEI	AMIP ensemble mean
AMIP ensemble mean	0.30	0.37	0.34	0.36	0.30	-0.29	
MEI	-0.57	-0.63	-0.57	-0.49	-0.30		-0.18
GISS	0.22	0.26	0.23	0.27		-0.03	0.17
CICS/ESSIC	0.76	0.77	0.75		0.04	-0.17	0.12
UEA	0.82	0.85		0.73	0.07	-0.36	0.17
GPCC	0.93		0.90	0.74	0.13	-0.39	0.30
GPCP		0.93	0.84	0.78	0.12	-0.16	0.25

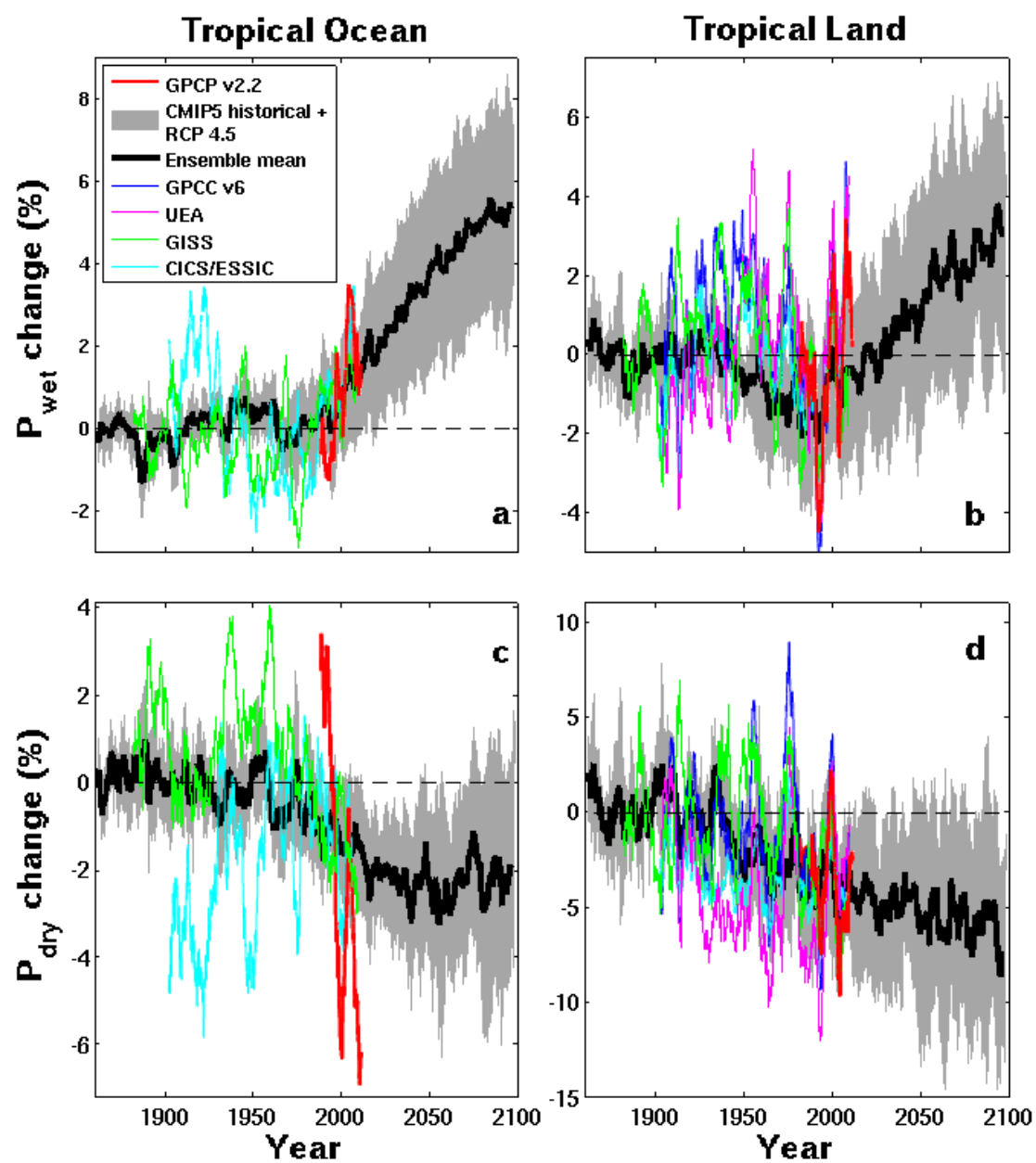


Fig. S1

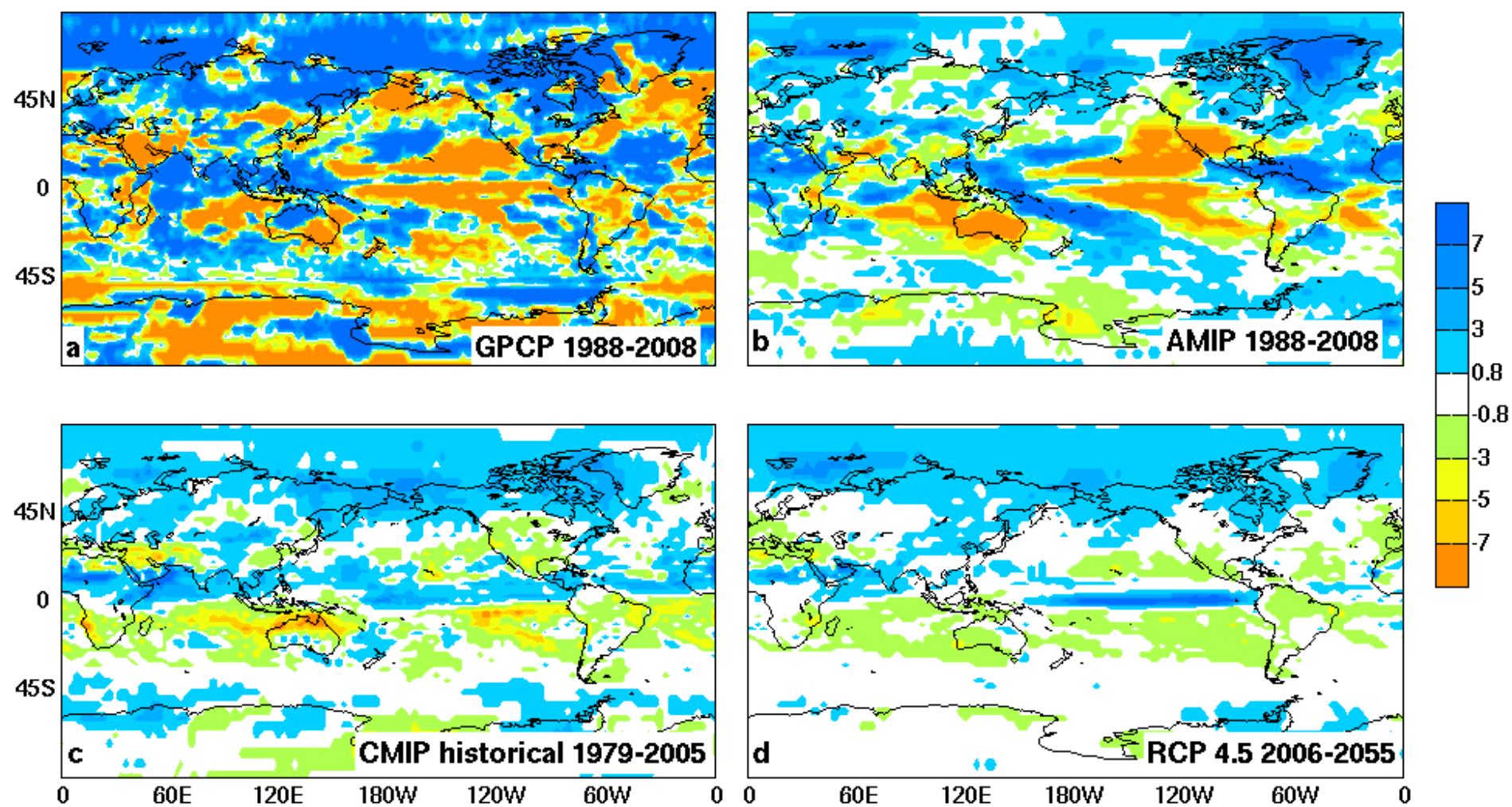


Fig. S2

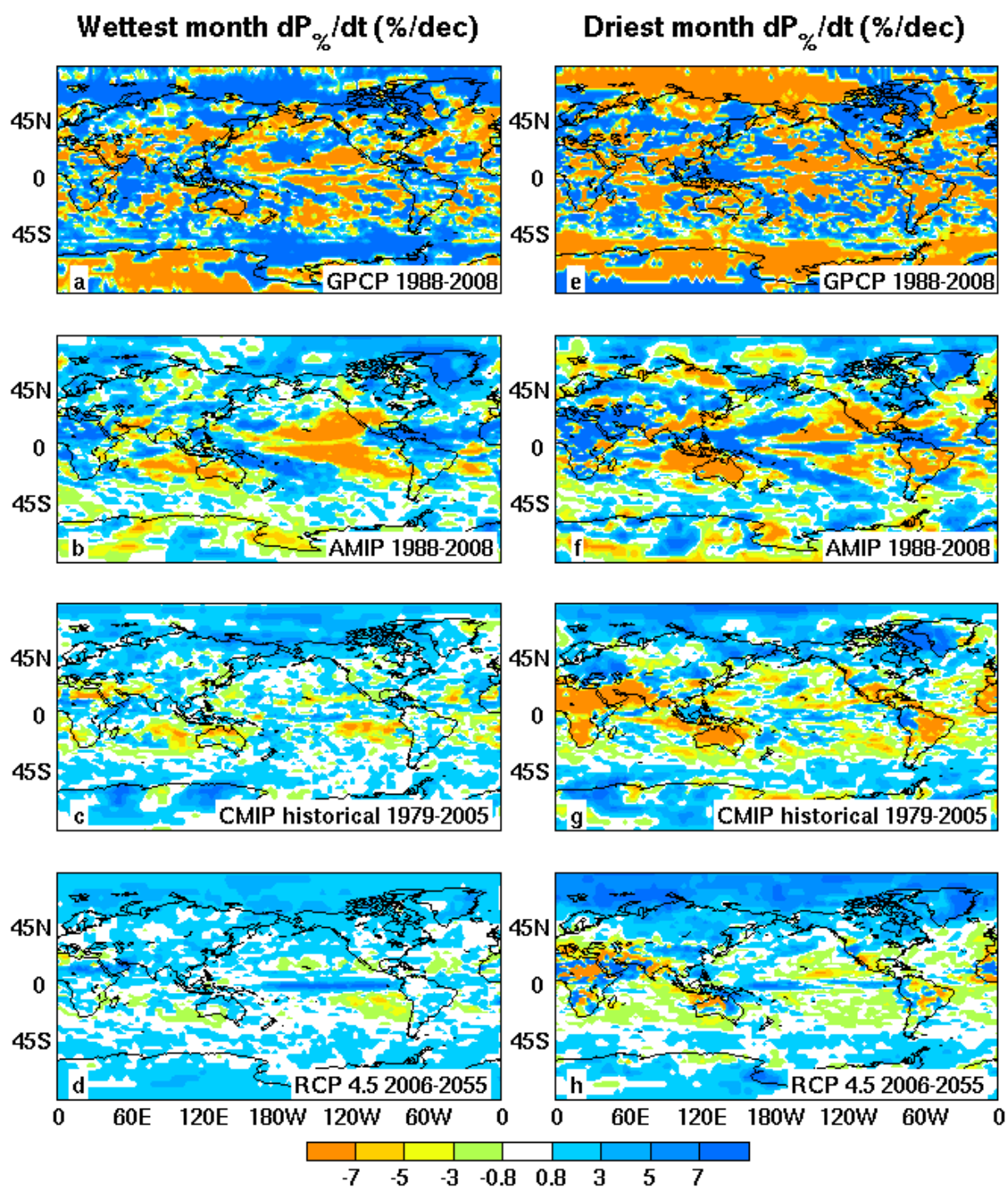


Fig. S3