

# 1 Supplementary Figures

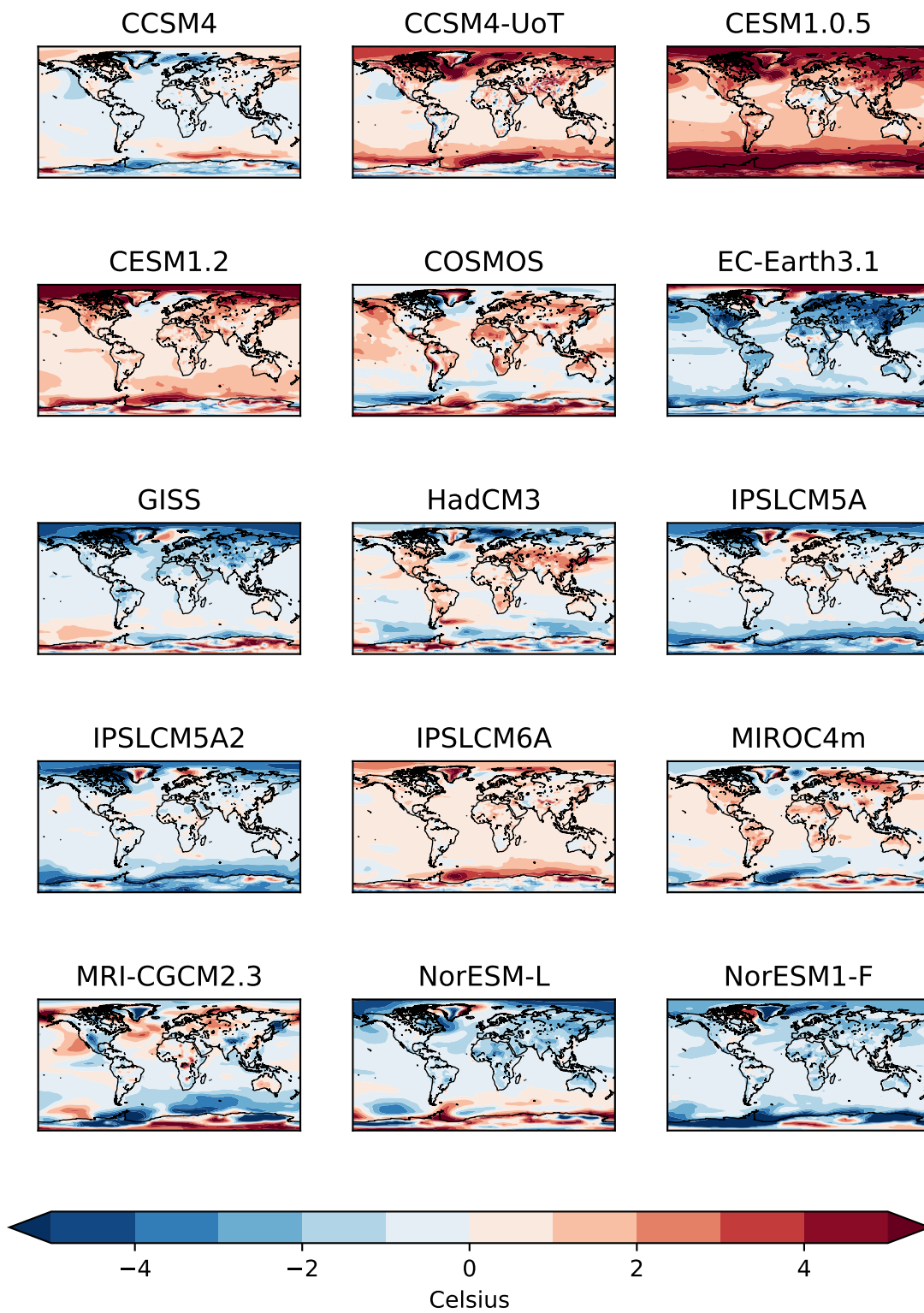


Figure 1: Near Surface Air Temperature anomaly (Plio\_Core - PI\_Ctl) from each model minus the multi-model mean Near Surface Air Temperature anomaly

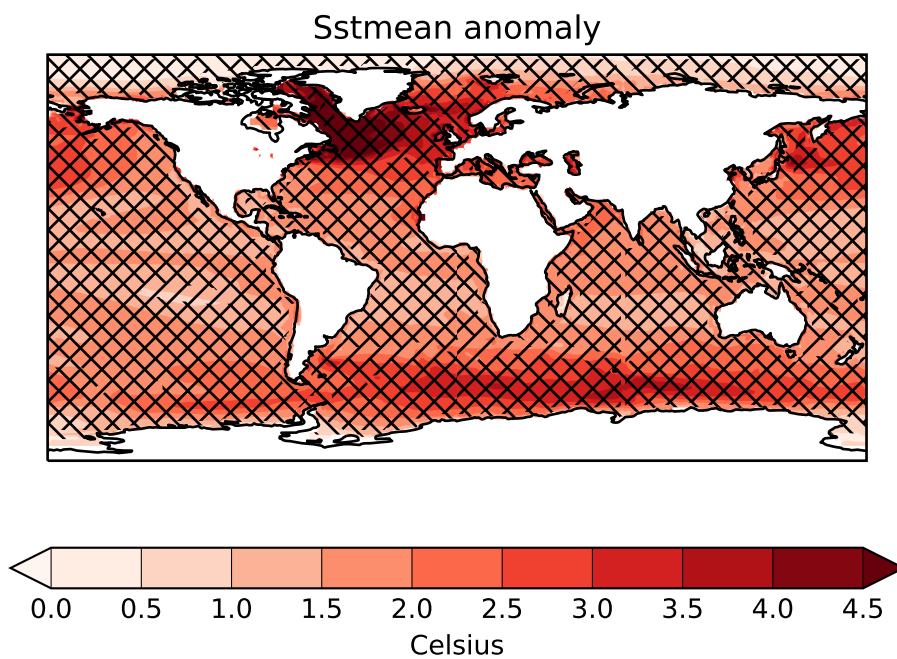


Figure 2: Multimodel mean Plio\_core - PL\_Ctrl SST anomalies (colors). Regions which have at least 12 of the 15 models agreeing on the sign of the change are marked '\'. Regions which have the ratio of the multimodel mean SST change to the PL\_Ctrl intermodel standard deviation greater than 1 are marked '/'. Regions which fulfil both these conditions are said to be robust across the ensemble.

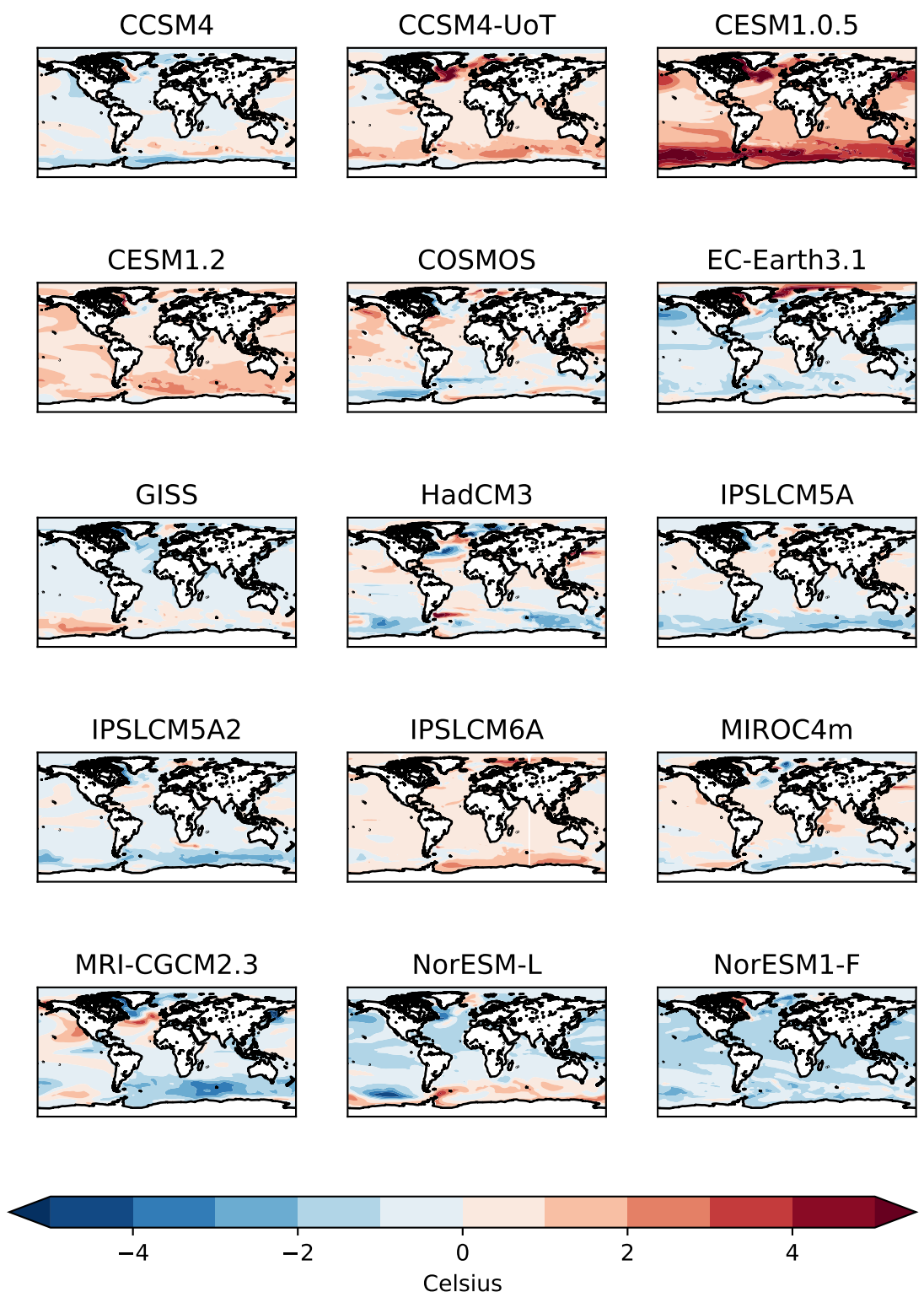


Figure 3: SST anomaly (Plio\_Core - PL\_Ctl) from each model minus the multimodel mean SST anomaly

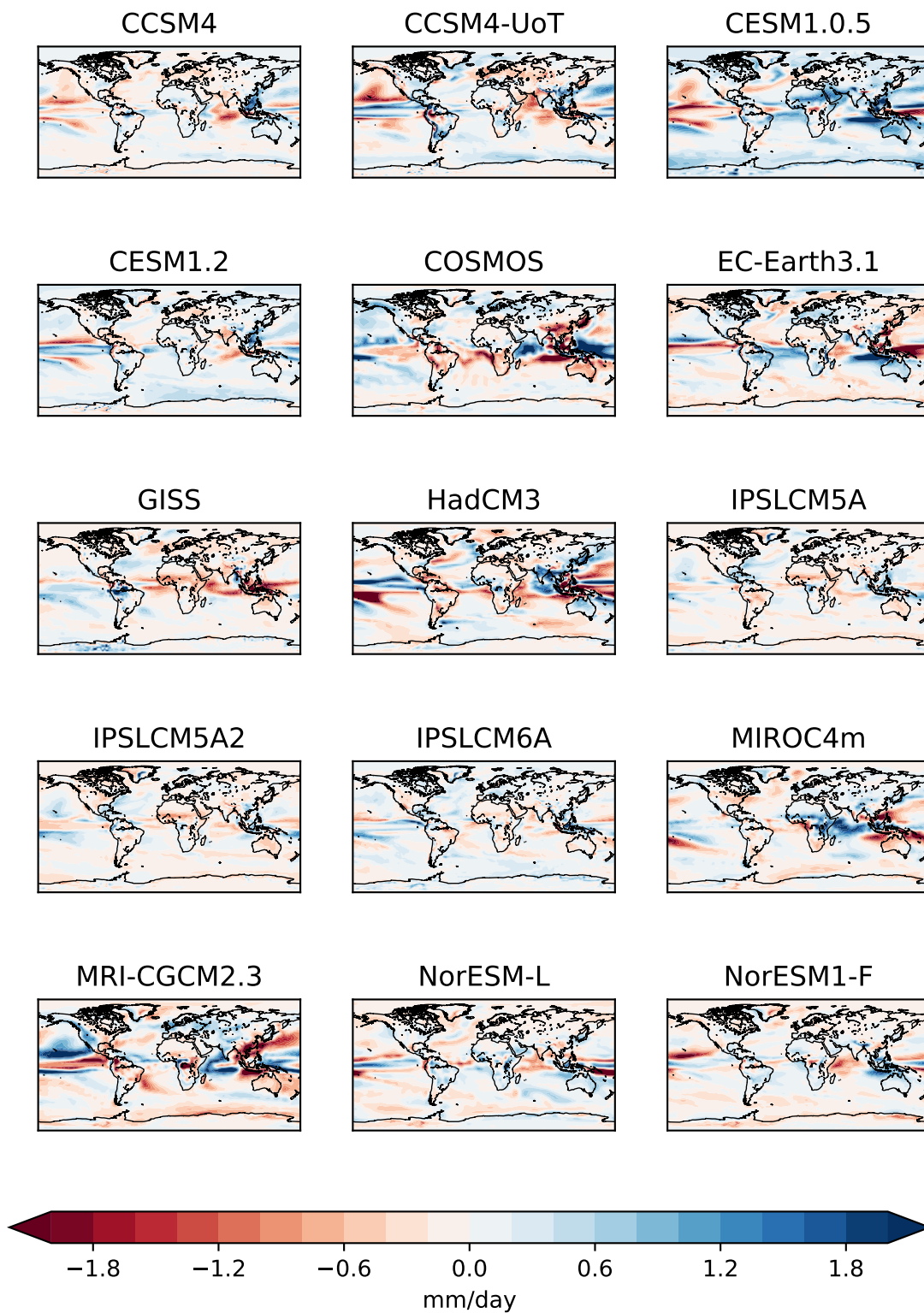


Figure 4: Precipitation anomaly (Plio\_Core - PI\_Ctl) from each model minus the multimodel mean Precipitation anomaly

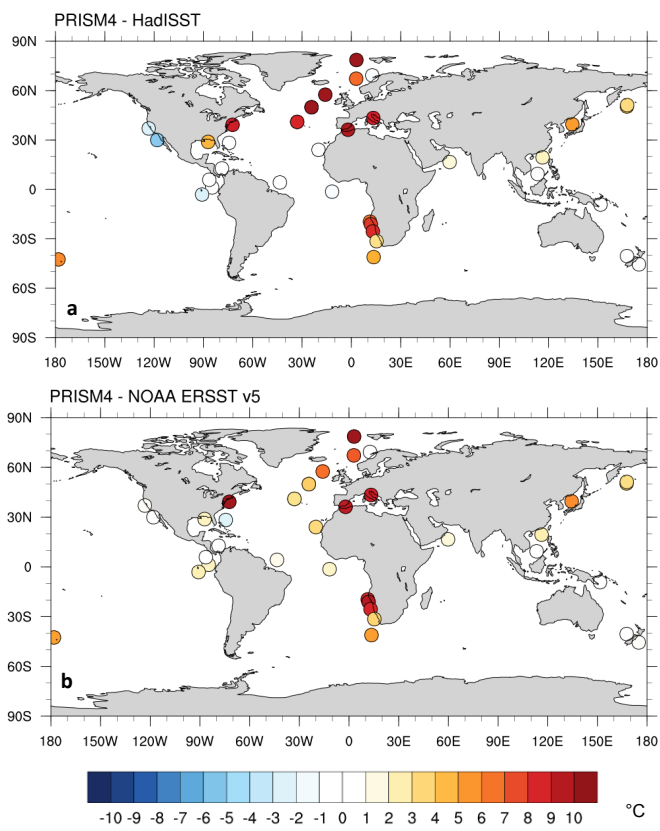


Figure 5: SST anomaly from the data using preindustrial SST from different sources. a) PRISM4 SST - HadISST, b) PRISM4 SST - NOAA ERSSTv5

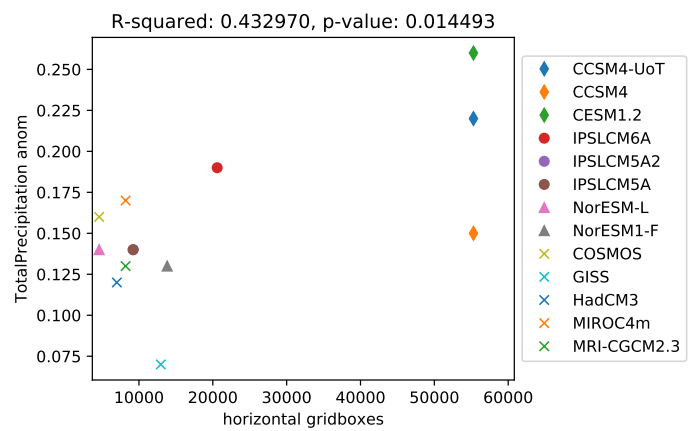
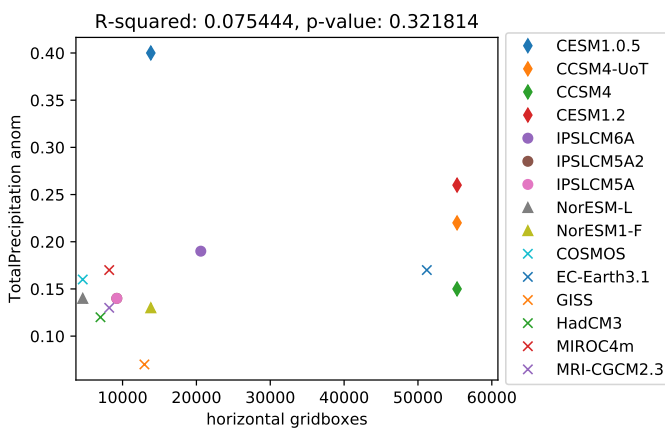
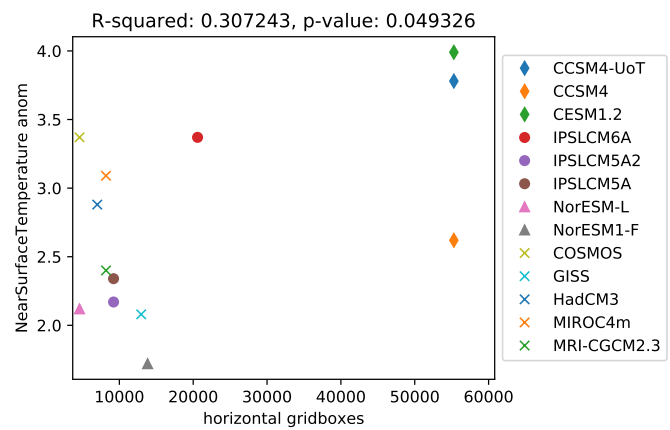
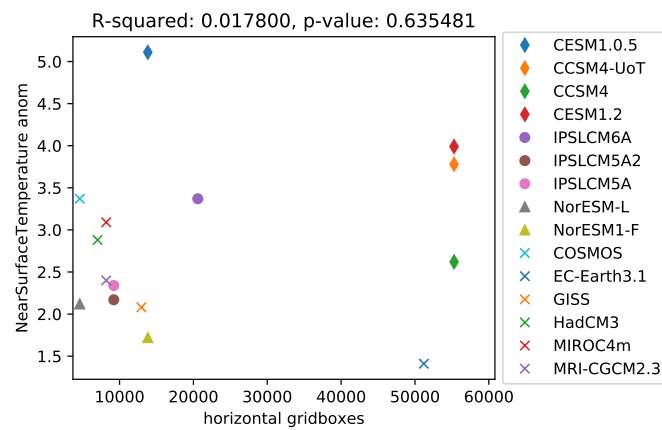


Figure 6: the correlation between the Plio\_Core - PI\_Ctl Near surface Air temperautre anomaly and the number of atmopsheric gridboxes, for all the models (left) and excluding the model with the largest and with the smallest temperature anomalies [right]. (c) and (d) are as (a) and (b) but for precipitation