
Supplementary information

Eastern equatorial Pacific warming delayed by aerosols and thermostat response to CO₂ increase

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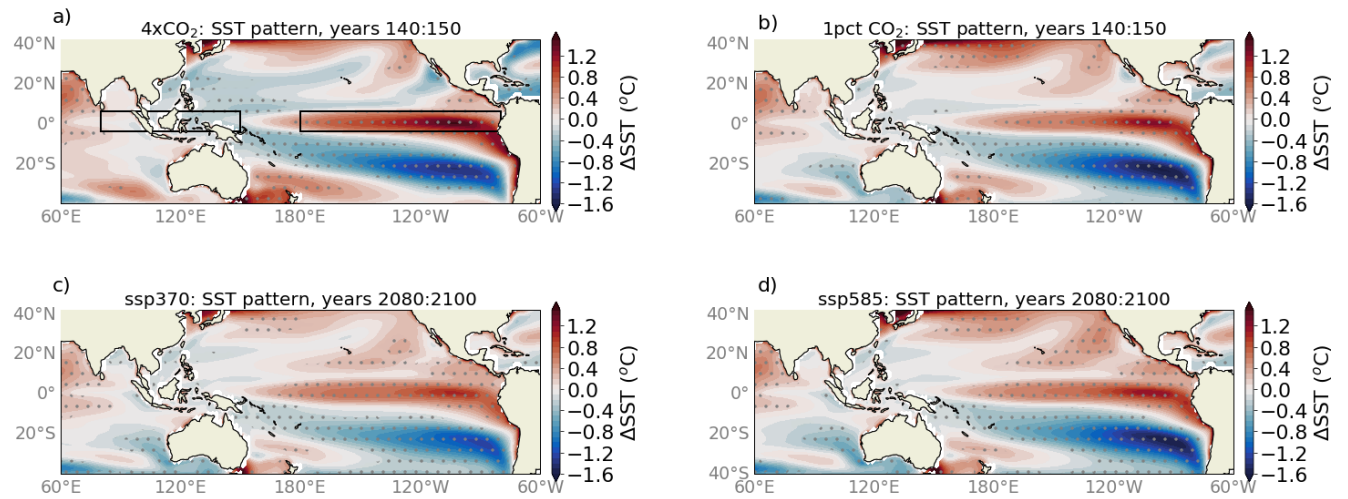
Supplementary Information

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Supplementary Figure 1. Long-term SST anomaly patterns at low latitudes in a range of experiments. The panels show multi-model-mean anomalies relative to the area mean warming for (a) abrupt $4\times\text{CO}_2$, (b) 1pct CO_2 , (c) SSP3-7.0, and (d) SSP5-8.5. As in Figure 2, to highlight the patterns of change, anomalies are computed with respect to the piControl simulation with the SST mean warming (within $60^\circ\text{E} - 60^\circ\text{W}$, $40^\circ\text{S} - 40^\circ\text{N}$) subtracted. Hatching indicates that 80% of the models agree on the sign of the anomaly. Note the strong similarity between the patterns. Panel (a) further shows the two equatorial boxes used for computing the Pacific zonal SST and SLP gradients (see Methods).

Model name	Marker	Ensemble size in different experiments				
		<i>hist</i>	<i>SSP8-5.8</i>	<i>SSP3-7.0</i>	<i>hist-GHG</i>	<i>hist-aer</i>
ACCESS-CM2 ^{OT}		3	3	3		
ACCESS-ESM1-5*		4	3	3	1	3
BCC-CSM2-MR		3	3	1		
BCC-ESM1*		3	4	3	3	3
CAMS-CMS1-0		3	2	2		
CanESM5* ^{EP}		9	10	18	8	6
CAS-ESM2-0		3				
CESM2* ^{EP}		9	3	1	3	2
CESM2-FV2		3				
CESM2-WACCM ^{EP}		3	1	3		
CESM2-WACCM-FV2		3				
CIESM		3	1			
CMCC-CM2-SR5 ^{EP}		1	1	1		
CNRM-CM6* ^{OT}		27	4	6	9	10
CNRM-CM6-HR ^{OT}		1	3	1		
CNRM-ESM2-1 ^{OT}		9		5		
E3SM ^{EP}		5	1			
FGOALS-f3-L		3	1			
FGOALS-g3* ^{EP}		3	1	5	3	1
GFDL-CM4		1	2			
GFDL-ESM4* ^{EP}		2	1	1	1	1
GISS-E2-1-G* ^{EP}		6	1	10	4	4
GISS-E2-1-H		3				
HadGEM3-GC31-LL*		3	5		5	4
HadGEM3-GC31-MM		4	3			
INM-CM4-8		1	1	1		
INM-CM5-0		10	1	5	4	
IPSL-CM6A*		31	5	11	10	10
KACE-1-0-G		3	1	3		
MCM-UA-1-0 ^{EP}		2	3	1		
MIROC-ES2L ^{EP}		3	1	1		
MIROC6* ^{EP}		13	3	1	3	3
MPI-ESM-1-2-HAM ^{OT}		2		2		
MPI-ESM1-2-LR ^{OT}		10	2		2	
MRI-ESM2*		1	1	5	5	3
NESM3		3	1			
NorCPM1 ^{OT}		26				
SAM0-UNICON ^{EP}		1				
TaiESM1		1	1			
UKESM-0-II		3	3	6	3	

Supplementary Table 1. Details of model experiments. Overview of all models and realistic forcing experiments used, with the number of ensemble members for each historical and SSP simulations shown. OT denotes the ocean thermostat category and EP denotes the eastern equatorial Pacific warming category (see main text). The asterisk indicates the subset of models that have experiments with partial historical forcings (*hist-GHG* and *hist-aer*).