

Collapsed upwelling projected to weaken ENSO under sustained warming beyond the twenty-first century

In the format provided by the authors and unedited

Supplementary Information

Supplementary Table 1. The list of the 16 climate models extended to 2300 (or 2299) from CMIP6 (models 1 to 8) and CMIP5 (models 9 to 16) used in this study. The symbols "√" and "×" represent "Yes" and "No," respectively, for the data extension. Additionally, the table includes Niño 3 skewness values during 1941-1990, which is obtained from monthly SSTA. Models highlighted in red (blue) indicate the subset of ten (four) models with positive (negative) skewness employed for the diagnostic analysis of ENSO feedbacks. Note that only the first six models in the table provide direct outputs of vertical velocity. For the diagnostic analysis of SSP126/RCP2.6 outputs, we restricted our analysis to seven models (highlighted in red, excluding ACCESS-CM2, CNRM-CM5, and GISS-E2-R) as only these models provide complete outputs.

Model name	Niño 3 skewness	Data extended to 2300 (or 2299)		
		RCP2.6 (SSP126)	RCP4.5 (SSP245)	RCP8.5 (SSP585)
CanESM5	0.02	√	×	√
CESM2-WACCM	0.05	√	×	√
GISS-E2-1-G	0.06	√	×	√
IPSL-CM6A-LR	0.15	√	×	√
MIROC-ES2L	0.61	√	×	√
MRI-ESM2-0	0.04	√	×	√
ACCESS-CM2	0.16	√	×	√
ACCESS-ESM1-5	-0.16	√	×	√
CCSM4	0.43	√	√	√
CNRM-CM5	0.19	×	√	√
GISS-E2-H	0.31	√	√	√
GISS-E2-R	0.01	√	√	√
HadGEM2-ES	-0.22	√	√	√
IPSL-CM5A-LR	-0.09	√	√	√
BCC-CSM1-1	-0.06	√	√	√
MPI-ESM-LR	0.43	√	√	√