Supplement of

Storylines of extreme summer temperatures in southern South America

Solange Suli et al.

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#	Model name	Modelling centre	Member	Resolution (lon x lat)
1	ACCESS-CM2	Australian Community Climate and Earth System Simulator (ACCESS), Australia	r1i1p1f1	1.9º x 1.3º
2	ACCESS-ESM1-5	Australian Community Climate and Earth System Simulator (ACCESS), Australia	r1i1p1f1	1.9º x 1.3º
3	BCC-CSM2-MR	Beijing Climate Center, Beijing, China	r1i1p1f1	1.1º x 1.1º
4	CAMS-CSM1-0	Chinese Academy of Meteorological Sciences, Beijing, China	r2i1p1f1	1.1º x 1.1º
5	CMCC-ESM2	Fondazione Centro Euro-Mediterraneo sui Cambiamenti Climatici, Italy	r1i1p1f1	1.3º x 0.9º
6	CNRM-CM6-1	Centre National de Recherches Météorologiques, France	r1i1p1f2	1.4º x 1.4º
7	CNRM-CM6-1-HR	Centre National de Recherches Météorologiques, France	r1i1p1f2	0.5º x 0.5º
8	CNRM-ESM2-1	Centre National de Recherches Météorologiques, France	r1i1p1f2	1.4º x 1.4º
9	EC-Earth3	Consortium of various institutions from Spain, Italy, Denmark, Finland, Germany, Ireland, Portugal, Netherlands, Norway, the United Kingdom, Belgium, and Sweden	r1i1p1f1	0.7º x 0.7º
10	EC-Earth3-CC	Consortium of various institutions from Spain, Italy, Denmark, Finland, Germany, Ireland, Portugal, Netherlands, Norway, the United Kingdom, Belgium, and Sweden	r1i1p1f1	0.7º x 0.7º
11	EC-Earth3-Veg	Consortium of various institutions from Spain, Italy, Denmark, Finland, Germany, Ireland, Portugal, Netherlands, Norway, the United Kingdom, Belgium, and Sweden	r1i1p1f1	0.7º x 0.7º
12	EC-Earth3-Veg-LR	Consortium of various institutions from Spain, Italy, Denmark, Finland, Germany, Ireland, Portugal, Netherlands, Norway, the United Kingdom, Belgium, and Sweden	r1i1p1f1	1.1º x 1.1º
13	GFDL-CM4	National Oceanic and Atmospheric Administration, GFDL, Princeton, USA	r1i1p1f1	1.3º x 1º
14	GFDL-ESM4	National Oceanic and Atmospheric Administration, GFDL, Princeton, USA	r1i1p1f1	1.3º x 1º

15	GISS-E2-1-G	Goddard Institute for Space Studies, United States	r1i1p1f2	2.5º x 2º
16	HADGEM3-GC31-LL	Met Office Hadley Centre (UKMO), United Kingdom	r1i1p1f3	1.9º x 1.3º
17	HADGEM3-GC31-MM	Met Office Hadley Centre (UKMO), United Kingdom	r1i1p1f3	0.8 x 0.6
18	INM-CM4-8	Institute for Numerical Mathematics, Russian Academy of Science, Moscow, Russia	r1i1p1f1	2º x 1.5º
19	INM-CM5-0	Institute for Numerical Mathematics, Russian Academy of Science, Moscow, Russia	r1i1p1f1	2º x 1.5º
20	IPSL-CM6A-LR	Institut Pierre Simon Laplace, Paris, France	r1i1p1f1	2.5º x 1.3º
21	KACE-1-0-G	National Institute of Meteorological Sciences/Korea Meteorological Administration (NIMS-KMA), South Korea	r1i1p1f1	1.9º x 1.3º
22	MPI-ESM1-2-HR	Max Planck Institute for Meteorology, Germany	r1i1p1f1	0.9º x 0.9º
23	MPI-ESM1-2-LR	Max Planck Institute for Meteorology, Germany	r1i1p1f1	1.9º x 1.9º
24	MRI-ESM2-0	Meteorological Research Institute, Tsukuba, Japan	r1i1p1f1	1.1º x 1.1º
25	TAIESM1	Research Center for Environmental Changes, Academia Sinica, Taiwan	r1i1p1f1	1.3º x 0.9º
26	UKESM1-0-LL	Met Office Hadley Centre (UKMO), Devon, United Kingdom	r1i1p1f2	1.9º x 1.3º

Table S1. List of CMIP6 models used in the study.

Region	ΔTXx	ΔTX90	ΔHWD	ΔHWE	ΔHWI
NS	ΔN3.4, ΔSACZ	-	-	-	-
CES	ΔSACZ	-	-	ΔSACZ	-
CA	ΔSM_{CA}, ΔSACZ	ΔSM_{CA}	ΔSM_{CA}	ΔSM_{CA}, ΔSACZ	-
SS	ΔSM_{SS}, ΔZ500	ΔZ500	ΔZ500	ΔSACZ	ΔSM_{SS}

Table S2. Statistically significant drivers (p-value < 0.1) for each HW index (columns: ΔTXx, ΔTX90, ΔHW duration, ΔHW extension and ΔHW intensity) and SSA region (rows: NS, CES, CA and SS). HW attributes were extracted from the algorithm developed by Sánchez-Benítez et al. (2020). The dash ('- ') indicates that none of the drivers showed a statistically significant relationship with the corresponding index.