

Table S2 Statistical metrics achieved by the CMIP6 models with significant spatial correlation. The 40-models ensemble *ENS* is in last line. The models with TSS < 0.9 are highlighted in gray.

Models	uRMSD ($W.m^{-2}$)	Time Correlation	Std Deviation ($W.m^{-2}$)	TSS
M25	6.55	0.98	32.02	0.98
M40	8.20	0.97	34.41	0.96
M19	7.85	0.97	28.92	0.95
M03	8.18	0.96	30.48	0.95
M35	8.65	0.96	32.77	0.95
M28	8.81	0.96	31.71	0.94
M38	9.30	0.95	28.63	0.92
M17	10.19	0.94	29.07	0.91
M08	9.91	0.97	23.35	0.90
M16	10.82	0.94	29.46	0.90
M11	11.07	0.93	26.75	0.88
M23	12.39	0.92	30.22	0.86
M21	13.01	0.91	26.23	0.82
M22	13.73	0.89	26.79	0.81
M13	13.65	0.90	25.06	0.80
M05	13.71	0.90	25.33	0.80
M12	14.82	0.88	24.77	0.76
M18	17.21	0.83	24.42	0.68
M32	17.55	0.83	20.90	0.63
M39	18.02	0.82	20.60	0.61
M10	18.92	0.80	20.89	0.57
M09	21.27	0.72	23.45	0.52
ENS	10.24	0.94	27.62	0.90
SME	7.79	0.97	29.90	0.96