

Supplement of

Climate model ensembles reveal increasing future extreme precipitation in Northern Italy

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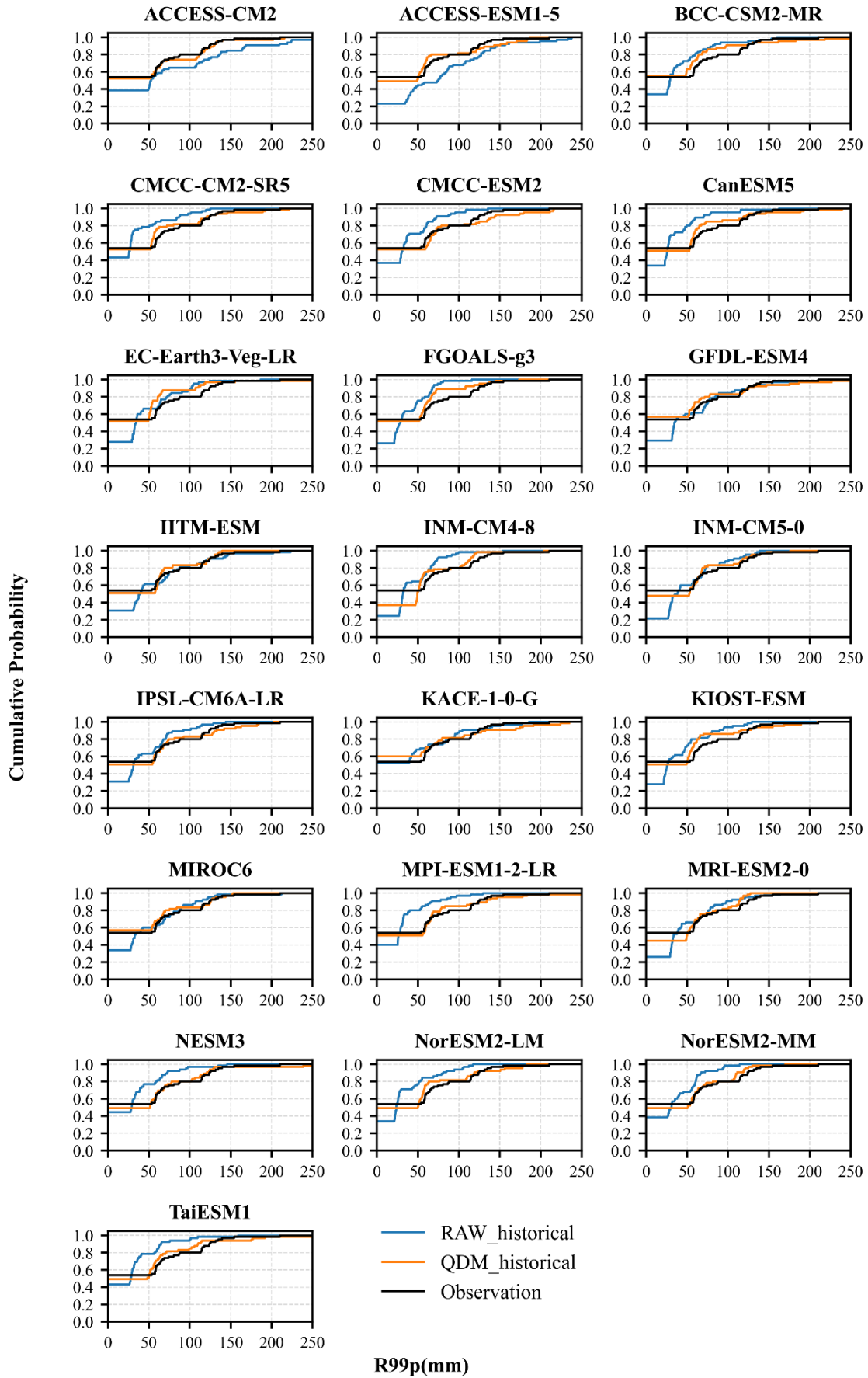


Figure. S1. Empirical cumulative distribution functions of observed Rx1day and raw and QDM-corrected R99p from 22 CMIP6 models during the validation period.

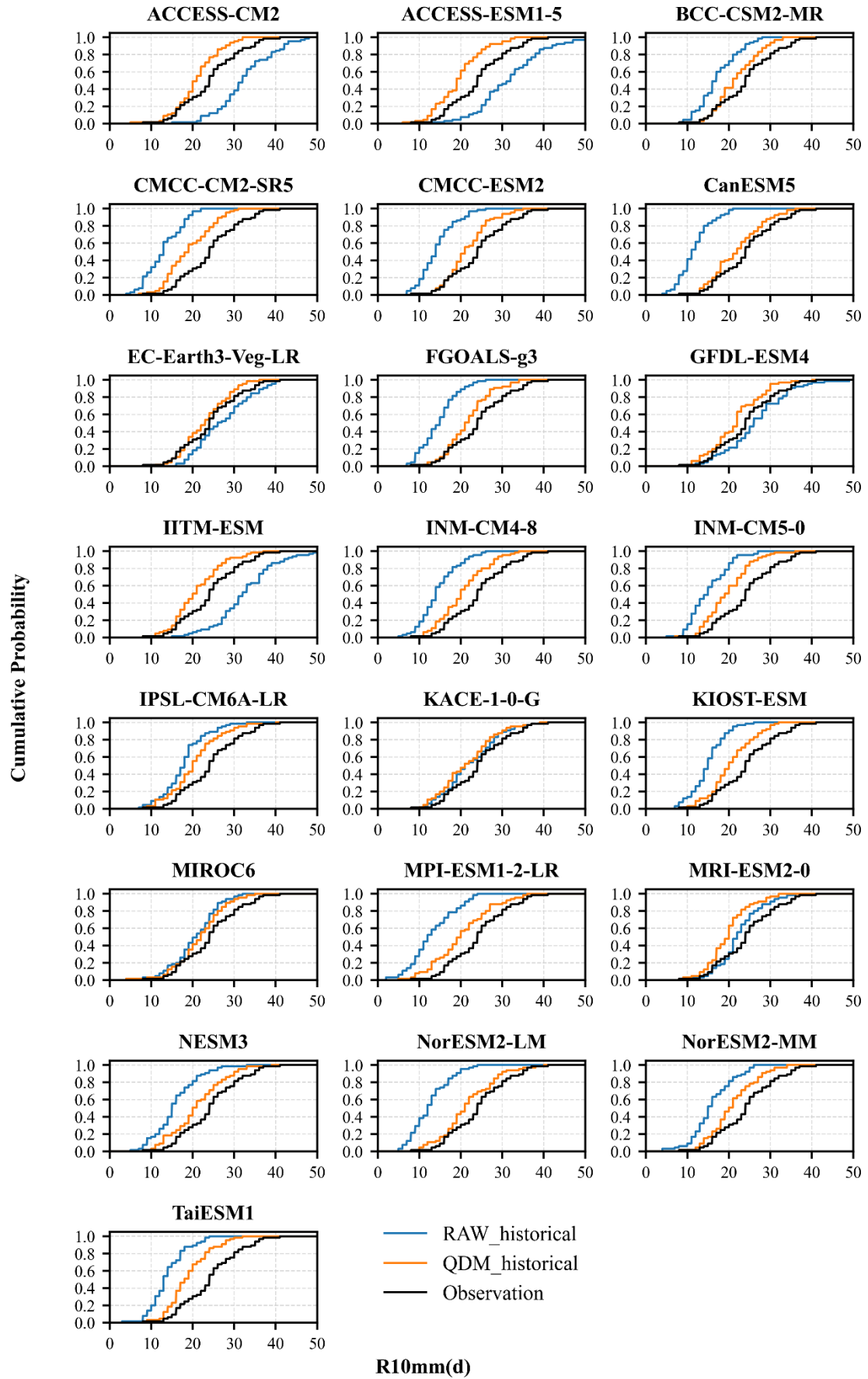


Figure. S2. Empirical cumulative distribution functions of observed Rx1day and raw and QDM-corrected R10mm from 22 CMIP6 models during the validation period.

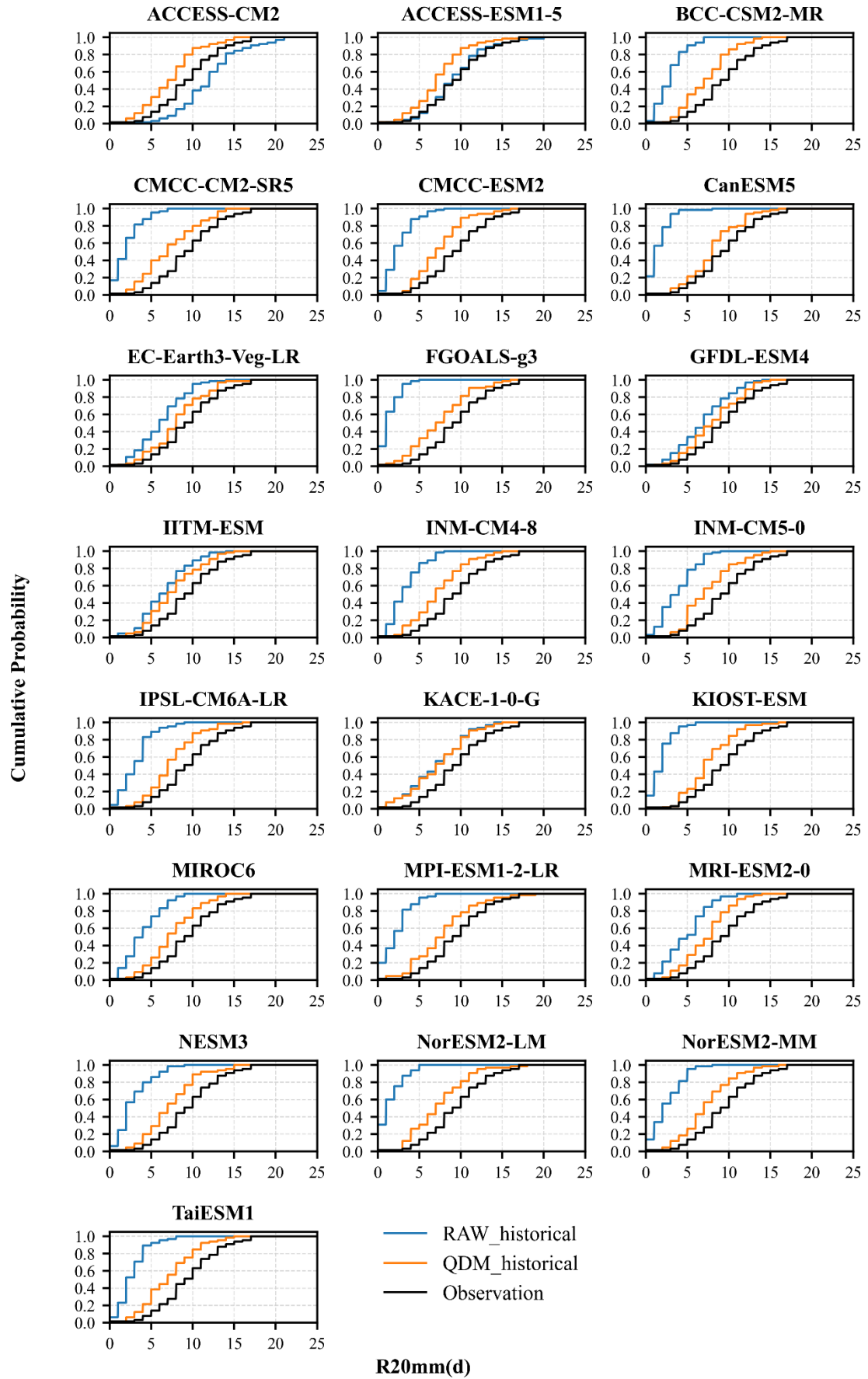


Figure. S3. Empirical cumulative distribution functions of observed Rx1day and raw and QDM-corrected R20mm from 22 CMIP6 models during the validation period.

Table S1. Sensitivity of SMA and BMA performance to different training–validation splits.

Index	Split year	MME	Bias	MAE	RMSE
Rx1day	1939	BMA	6.824	14.939	18.602
		SMA	0.481	13.400	17.112
	1949	BMA	5.707	14.962	18.623
		SMA	1.368	13.688	17.515
	1959	BMA	5.026	15.080	18.388
		SMA	2.839	13.794	17.844
R99p	1939	BMA	4.911	15.567	19.115
		SMA	3.203	14.470	18.687
	1949	BMA	0.104	47.982	57.577
		SMA	0.858	49.314	54.725
	1959	BMA	0.505	47.327	56.263
		SMA	0.593	49.897	55.389
R10mm	1939	BMA	4.653	45.208	55.130
		SMA	3.166	49.111	54.917
	1949	BMA	6.744	50.597	60.178
		SMA	6.292	51.854	57.890
	1959	BMA	3.538	6.497	8.411
		SMA	2.670	5.907	7.392
R20mm	1939	BMA	4.259	6.944	8.840
		SMA	3.293	6.202	7.690
	1949	BMA	4.896	6.969	9.010
		SMA	3.896	6.089	7.650
	1959	BMA	4.326	6.866	8.752
		SMA	3.811	6.286	7.894
R20mm	1939	BMA	1.805	3.375	4.198
		SMA	1.756	3.116	4.005
	1949	BMA	2.095	3.461	4.291
		SMA	2.089	3.303	4.190
	1959	BMA	2.524	3.524	4.367
		SMA	2.406	3.346	4.166
R20mm	1969	BMA	2.445	3.694	4.576
		SMA	2.406	3.531	4.397

Note: Smaller metric values indicate better performance. The split year denotes the final year of the training period; the validation period starts from the following year and ends in 2014. For example, a split year of 1949 indicates a training period of 1850–1949 and a validation period of 1950–2014.