

Supplementary Materials

Long-Term Projection of Water Cycle Changes over China Using RegCM

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Table S1. Spatial correlation between RegCM-generated results and observations, remote sensing data, and reconstructed data.

	ERA-RegCM					GFDL-RegCM				
	Annual	Winter	Spring	Summer	Autumn	Annual	Winter	Spring	Summer	Autumn
Temperature										
CRU	0.97	0.96	0.97	0.97	0.97	0.97	0.96	0.97	0.97	0.97
NIMC	0.97	0.97	0.95	0.94	0.94	0.98	0.97	0.95	0.97	0.95
Precipitation										
CRU	0.60	0.29	0.60	0.69	0.49	0.61	0.32	0.65	0.70	0.34
NIMC	0.65	0.29	0.68	0.68	0.43	0.47	0.29	0.65	0.51	0.28
Evapotranspiration										
MODIS	0.61	0.6	0.6	0.51	0.34	0.61	0.46	0.6	0.47	0.33
GLEAM	0.82	0.85	0.77	0.82	0.48	0.78	0.72	0.78	0.75	0.52
NIMC	0.50	0.63	0.51	-0.20	0.18	0.42	0.67	0.23	0.01	0.21
Runoff										
GRUN	0.67	0.47	0.37	0.66	0.69	0.66	0.53	0.40	0.65	0.66

Notes: Figures in bold font indicates the correlation coefficient is statistically significant at a α level of 0.05.

Table S2. Spatial correlation between raw GFDL data and observations.

	Annual	Winter	Spring	Summer	Autumn
Temperature					
CRU	0.90	0.94	0.89	0.86	0.91
NIMC	0.90	0.88	0.91	0.92	0.84
Precipitation					
CRU	0.60	0.40	0.59	0.73	0.35
NIMC	0.57	0.51	0.33	0.56	0.39

* Notes: All figures are statistically significant at a α level of 0.05.

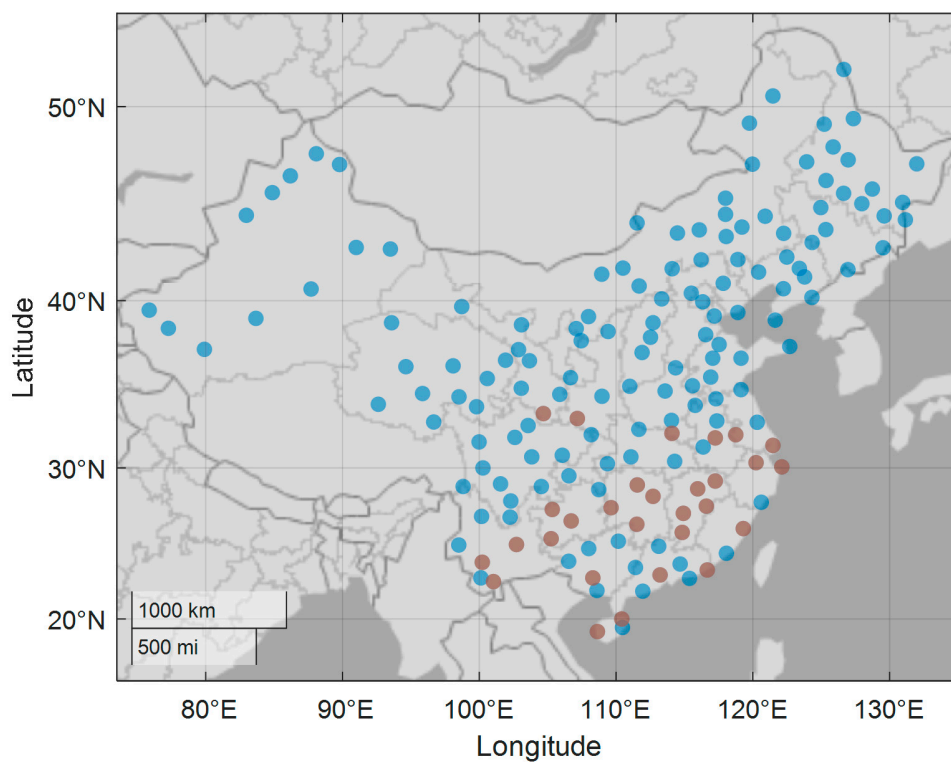


Figure S1. Location of NIMC weather stations. Note: Red dots indicate selected stations for evapotranspiration data. The NIMC tank evaporation data contains a large number of missing data; the stations are selected if the percentage of missing data is less than 50% for each season.

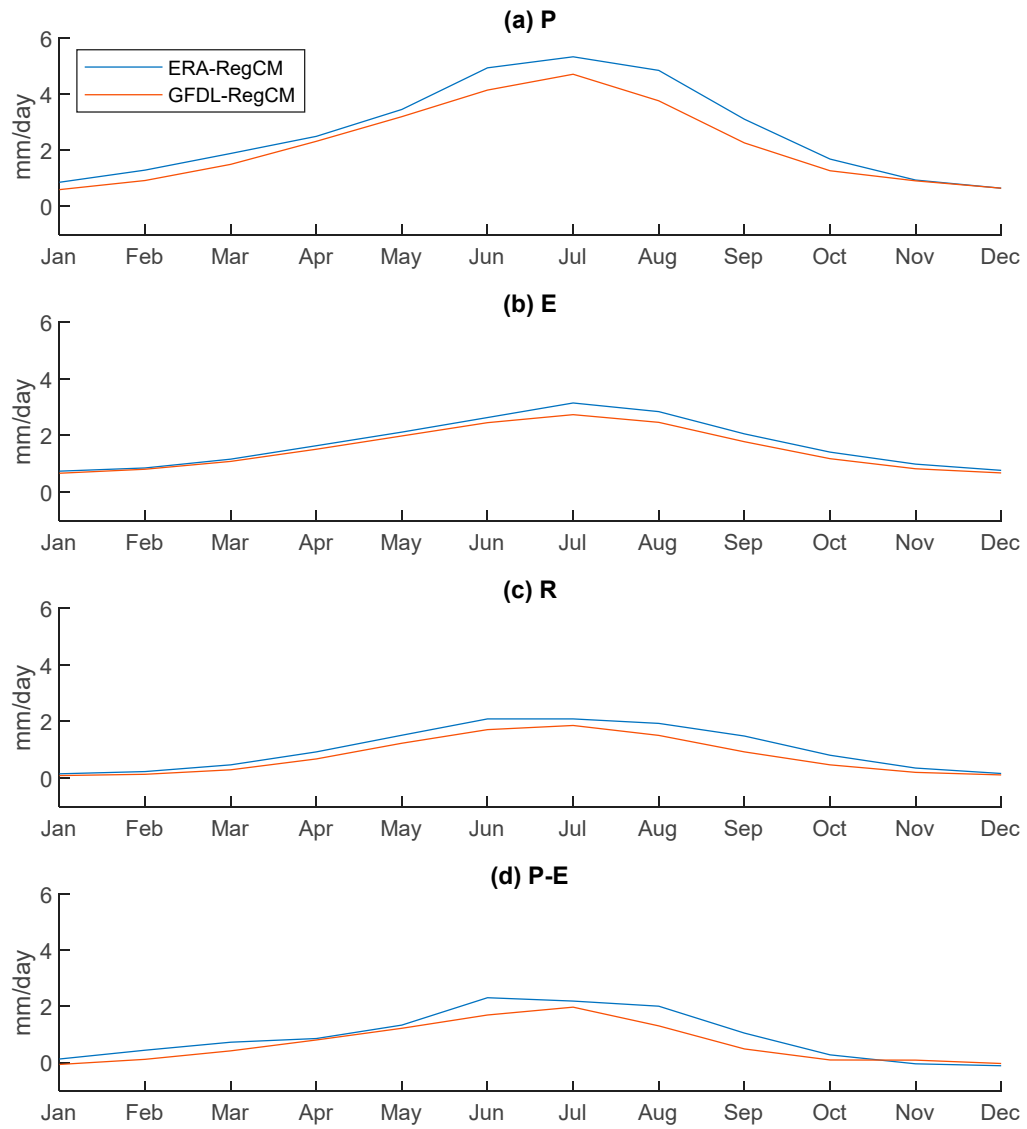


Figure S2. Simulated annual cycles for precipitation, evapotranspiration, runoff, and the difference between precipitation and evapotranspiration in the baseline period. The R^2 's for the two sets of RegCM results are 0.88, 0.92, 0.83, and 0.82, respectively for precipitation, evapotranspiration, runoff, and the difference between precipitation and evapotranspiration.