Supporting Information for "Evaluation of atmospheric models using parsimonious flow network routing model and streamflow observations over mountainous regions: A case study of the Yarlung Zangbo River on the Tibetan Plateau"

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Table S1. Spearman's correlation coefficient between the rank of the median correlation coefficient measured by streamflow and the rank measured by other observations or skill measures across the WRF experiments.

Gauge	Calibration	Runoff	Precipitation (Temporal)	Precipitation (Spatial)
Lazi	0.99	0.88	-0.76	-0.70
Nugesha	0.97	0.28	0.37	0.21
Lhasa	0.97	0.24	0.57	0.32
Yangcun	0.95	0.22	0.31	0.15
Gengzhang	0.99	-0.79	0.52	0.82
Nuxia	0.90	0.31	0.34	0.02

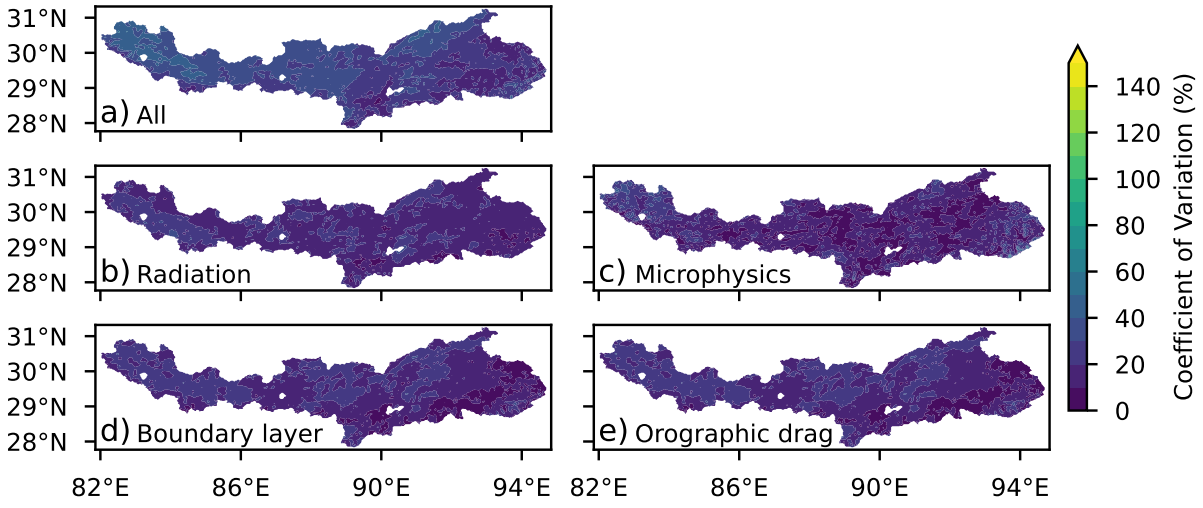

Figure S1. Same as Figure 3, but for precipitation.

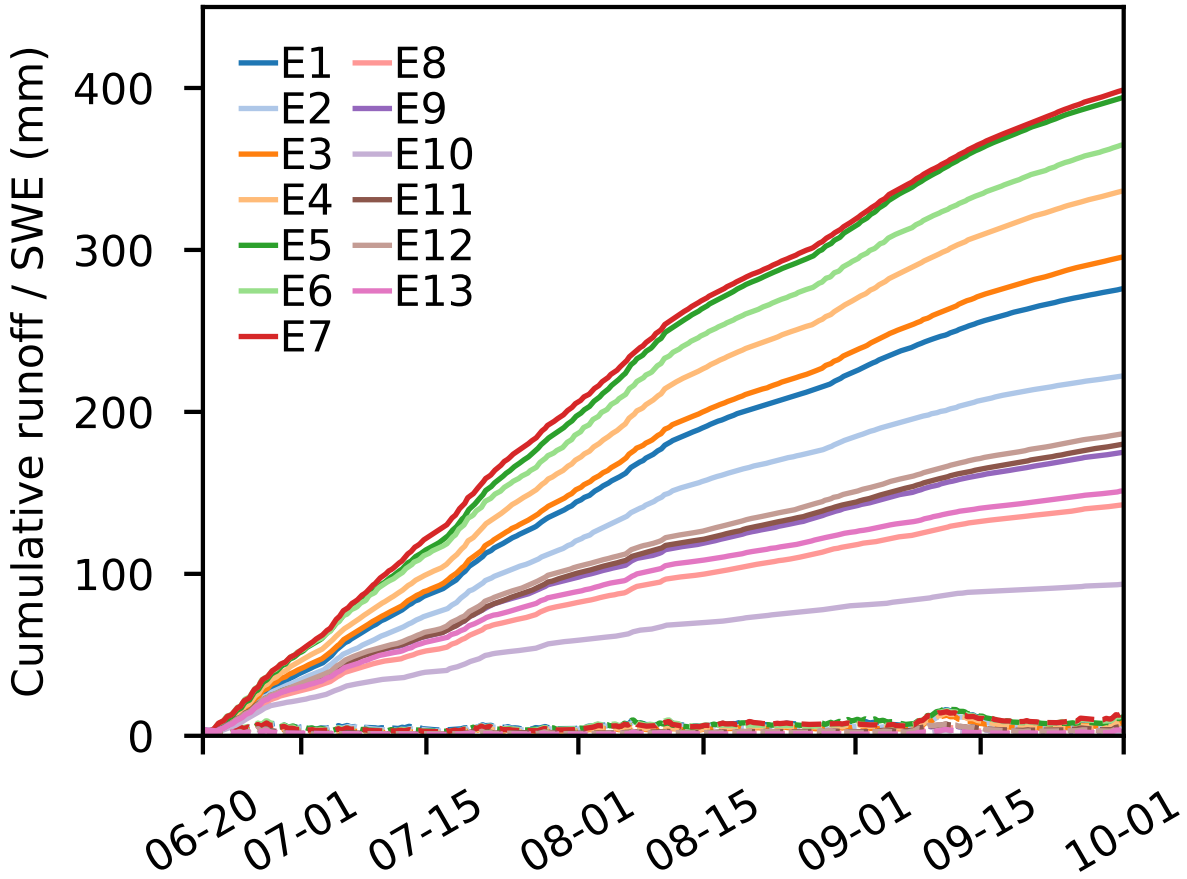

Figure S2. Time series of the averaged accumulated runoff and snow water equivalent (SWE) over the Yarlung Zangbo River basin for each WRF experiment. The solid lines represent the accumulated runoff, and the dashed lines represent the SWE.

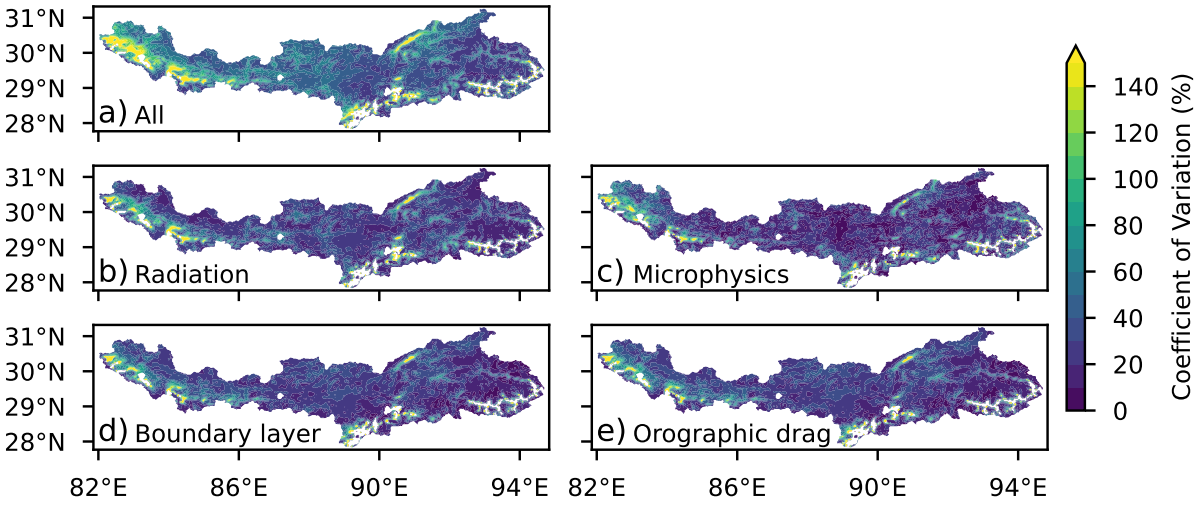

Figure S3. Same as Figure 3, but for the precipitation minus evapotranspiration.

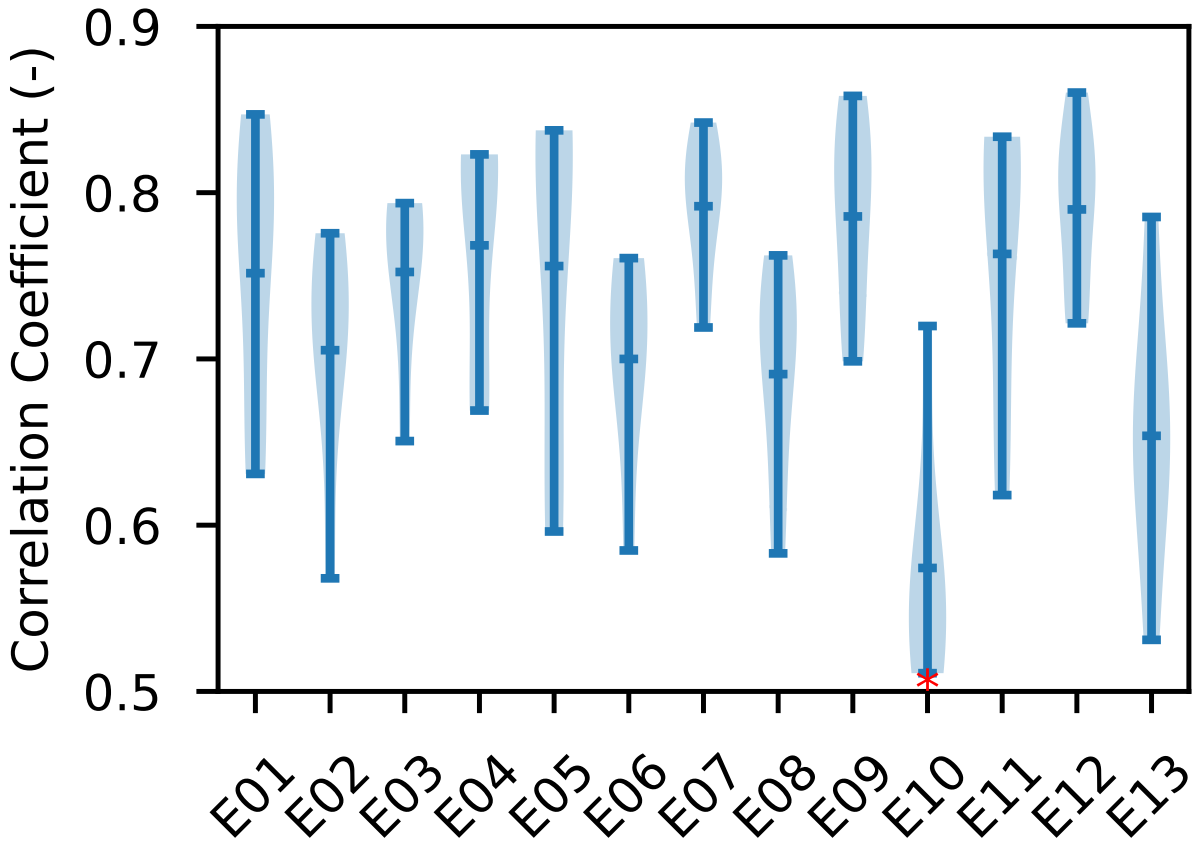

Figure S4. Violinplots of optimal correlation coefficient across the six river gauges for each WRF experiment. The distribution of the optimal correlation coefficient for each WRF experiment is tested for its difference from the rest of the experiments using a student t-test. The experiments that are significantly lower than the rest in the correlation coefficient at the 0.05 significance level are marked with red asterisks.

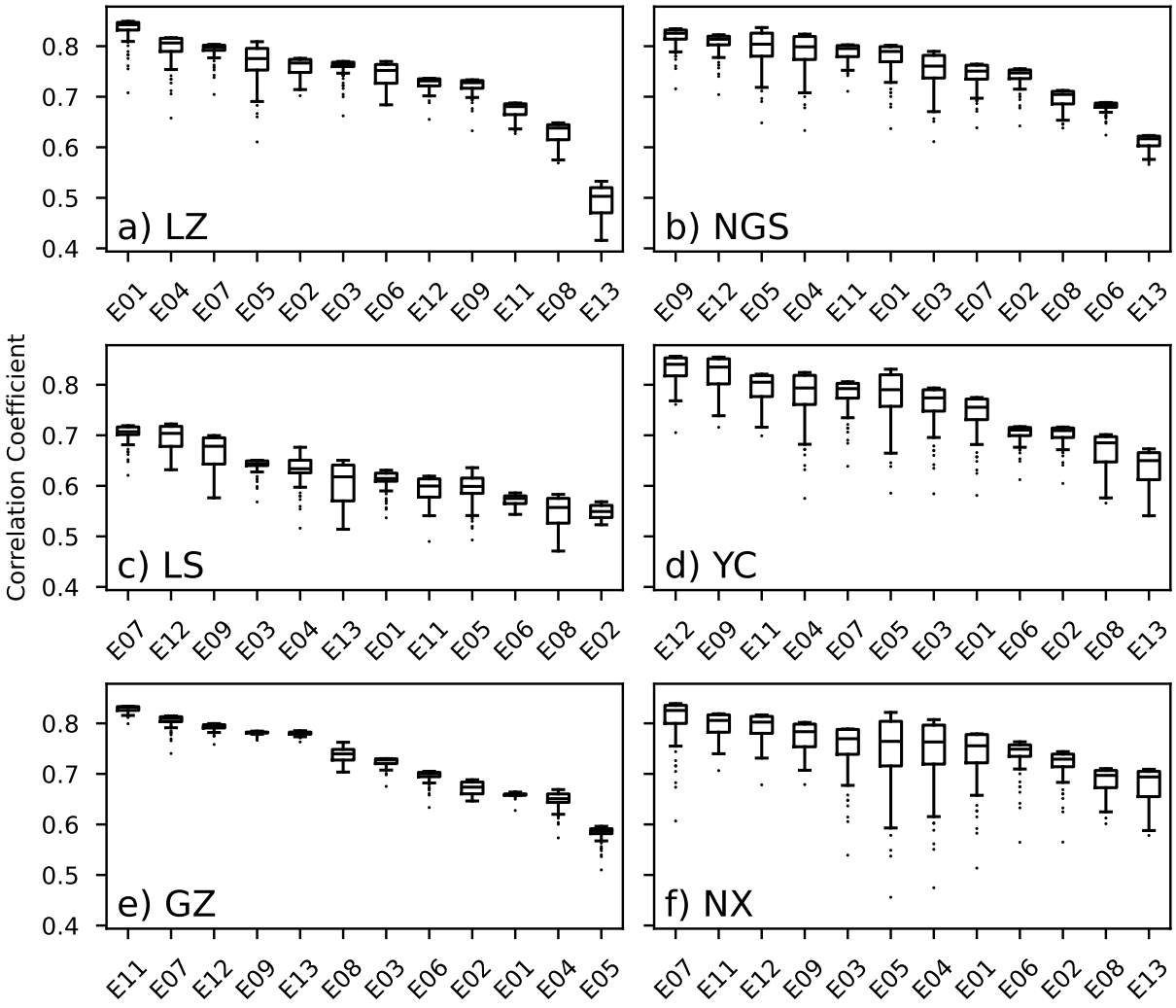

Figure S5. Same as Figure 6, but for correlation coefficient.

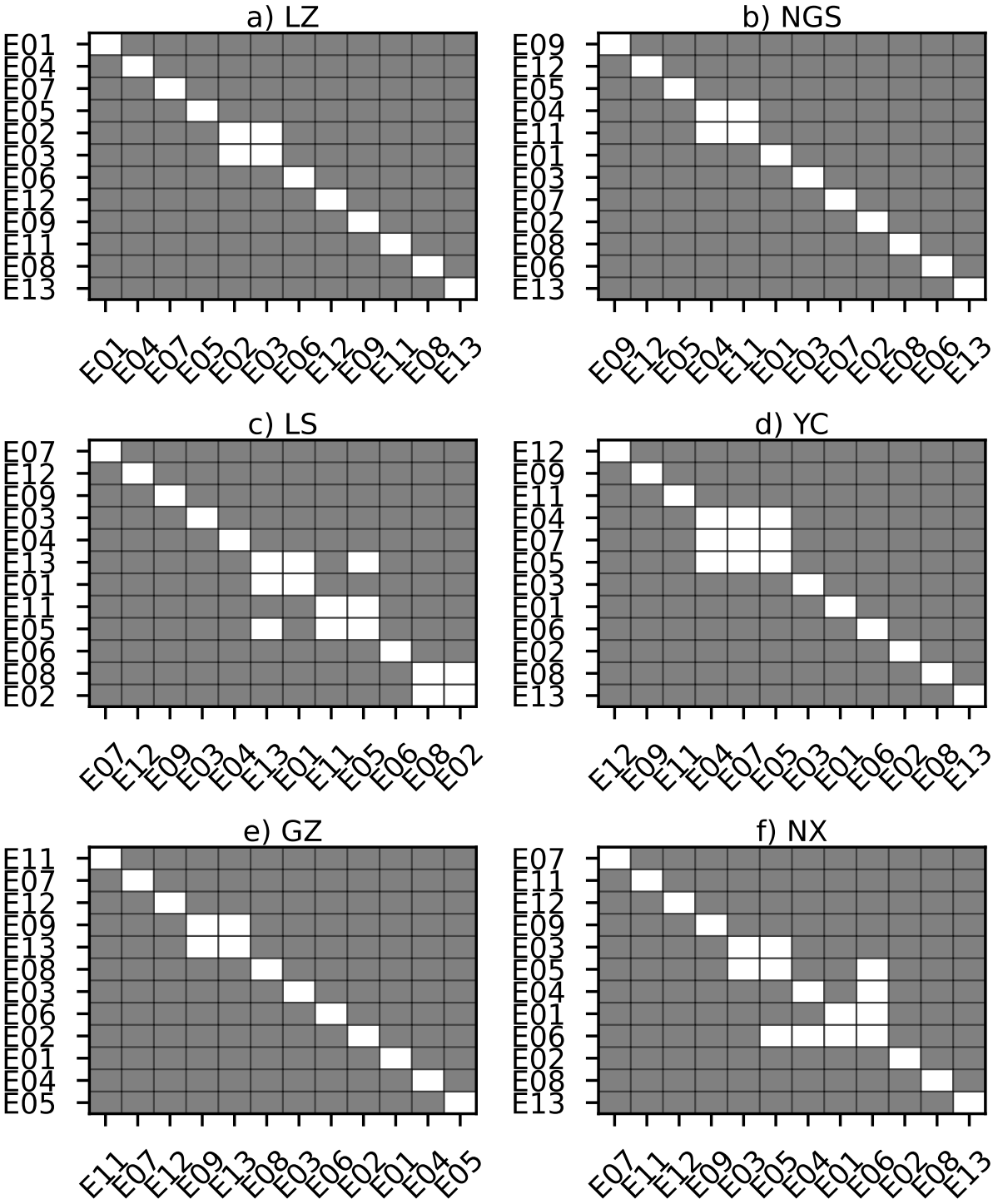

Figure S6. Same as Figure 7, but for correlation coefficient.

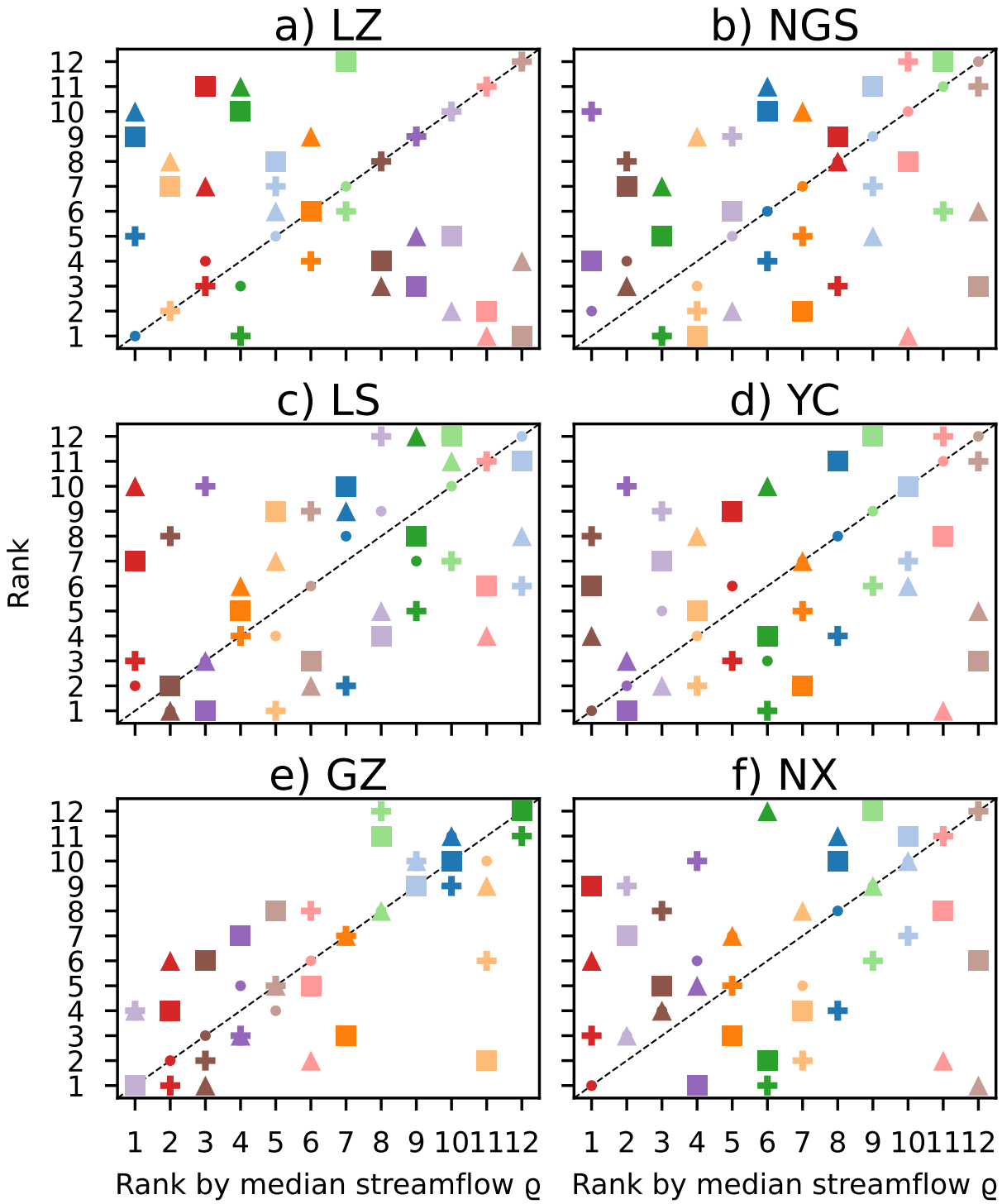

Figure S7. Same as Figure 8, but for correlation coefficient. Dots represent the rank of the optimal correlation coefficient. Plus signs for the runoff correlation coefficient. Squares for the temporal correlation coefficient of basin-averaged precipitation. Upper triangles for the spatial correlation coefficient of precipitation climatology.

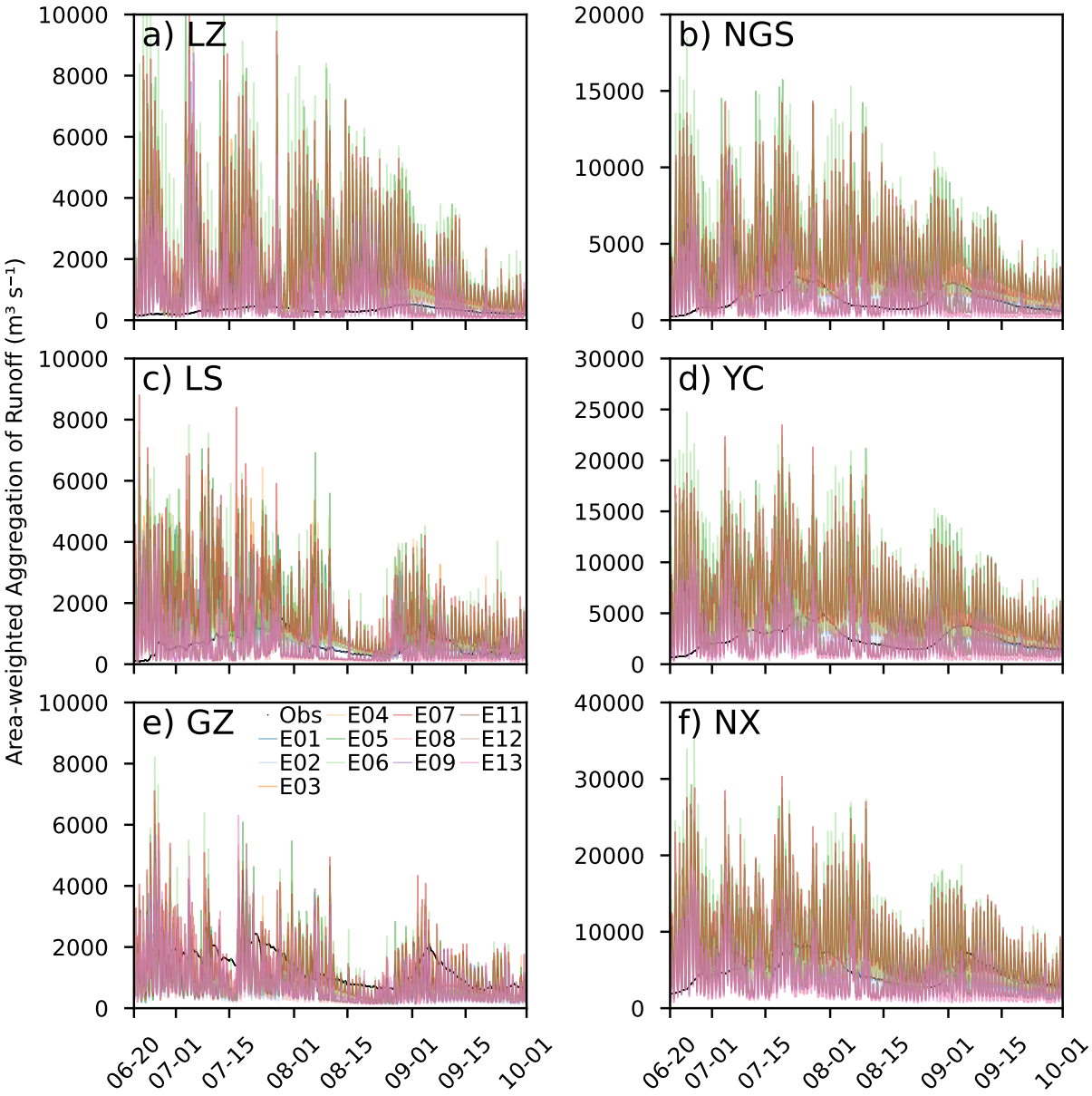

Figure S8. Same as Figure 5, but for area-weighted aggregation of runoff.