



Supplement of

SDMBCv2 (v1.0): correcting systematic biases in RCM inputs for future projection

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S1. Monthly

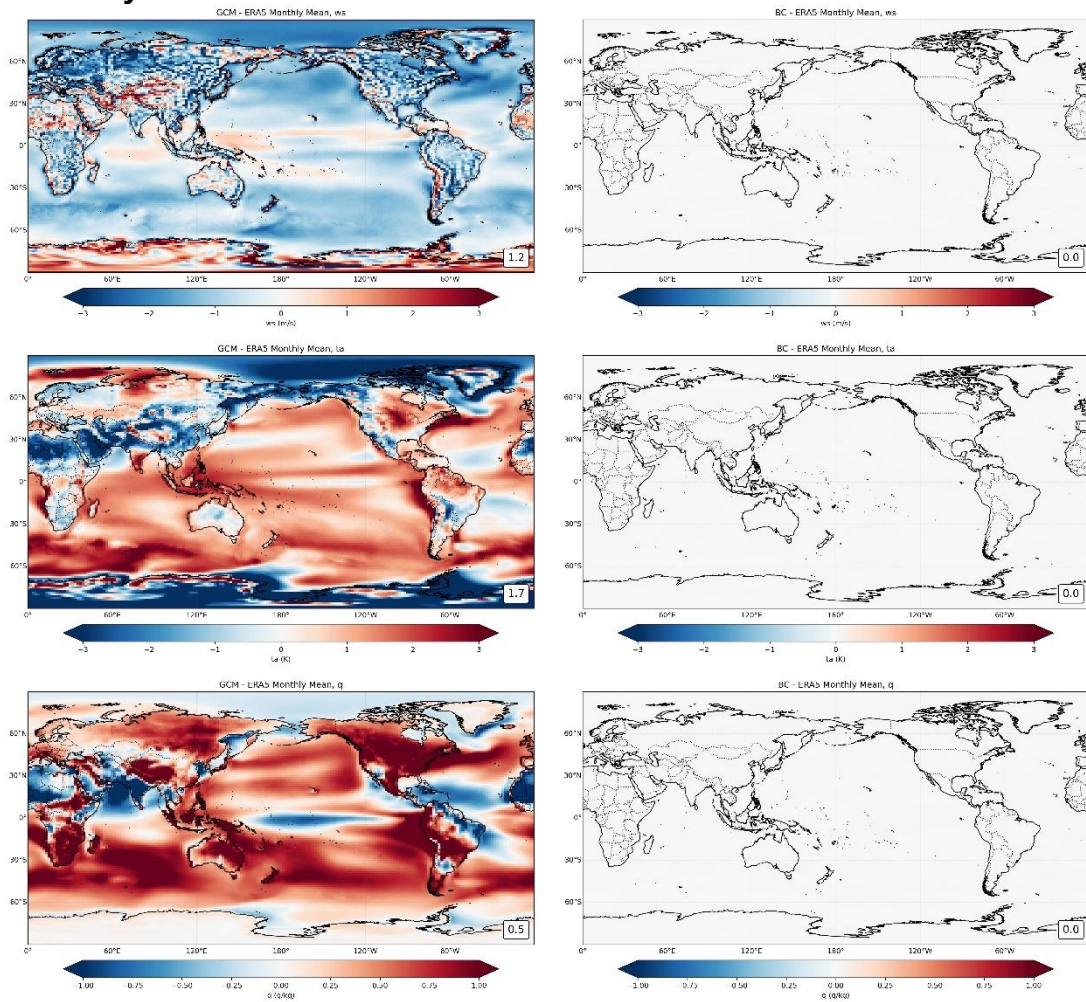


Figure S1 Climatological mean bias maps comparing ERA5 with GCM outputs before (left panels) and after (right panels) bias correction (BC), evaluated at the lowest model level on a monthly time scale for the calibration period (1959–1989). The panels show results for wind speed (ws), air temperature (ta), and specific humidity (q). The number at the bottom right shows the mean absolute error.

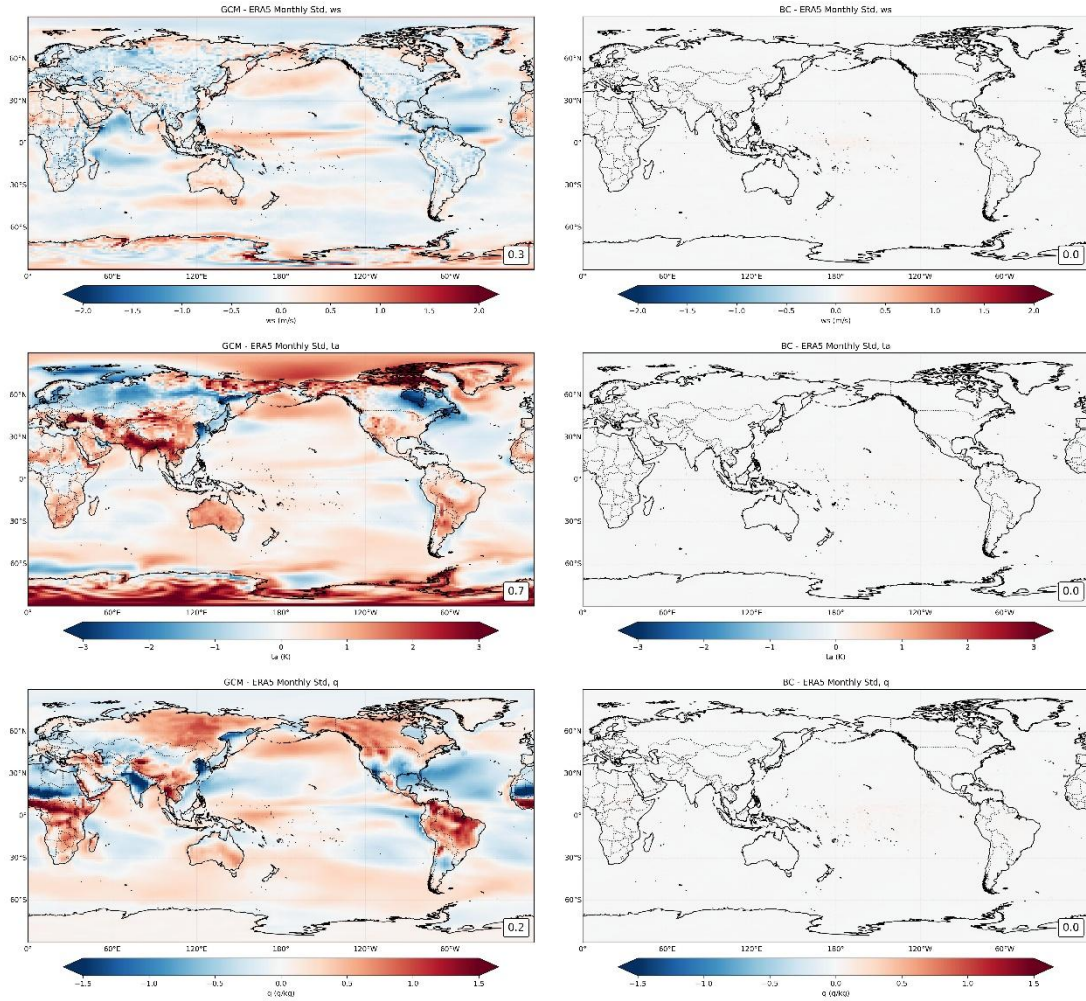


Figure S2 As in Figure 1-1, but for standard deviation

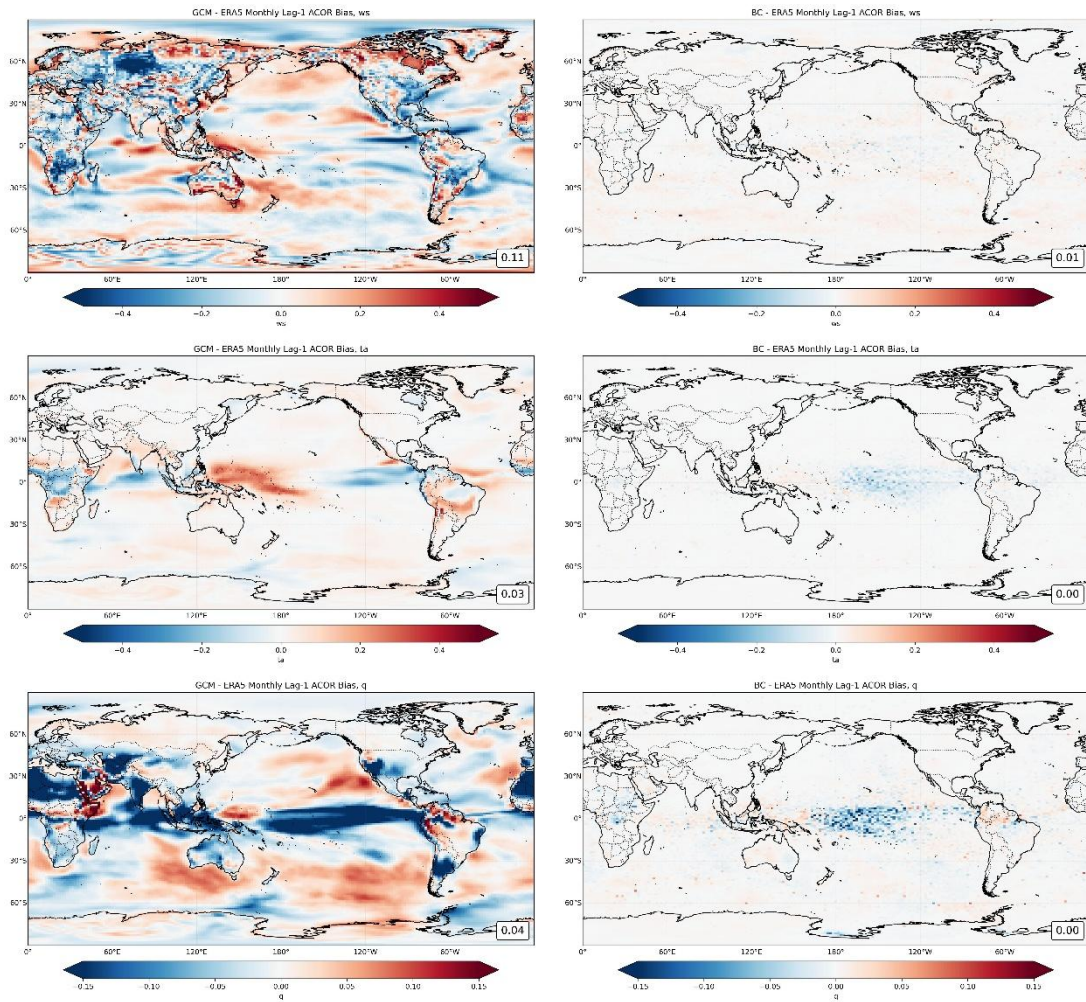


Figure S3 As in Figure 1-1, but for lag1 auto-correlation

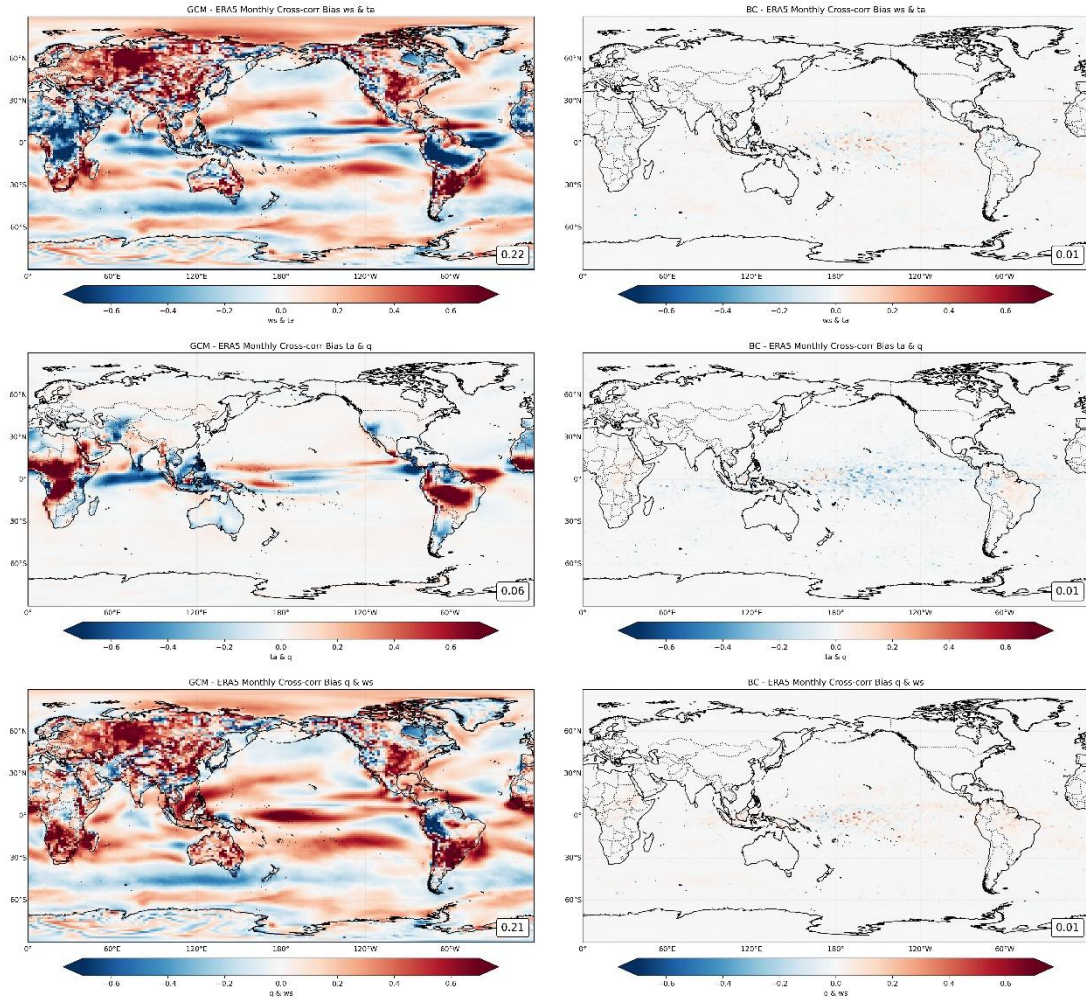


Figure S4 As in Figure 1-1, but for lag0 cross-correlation

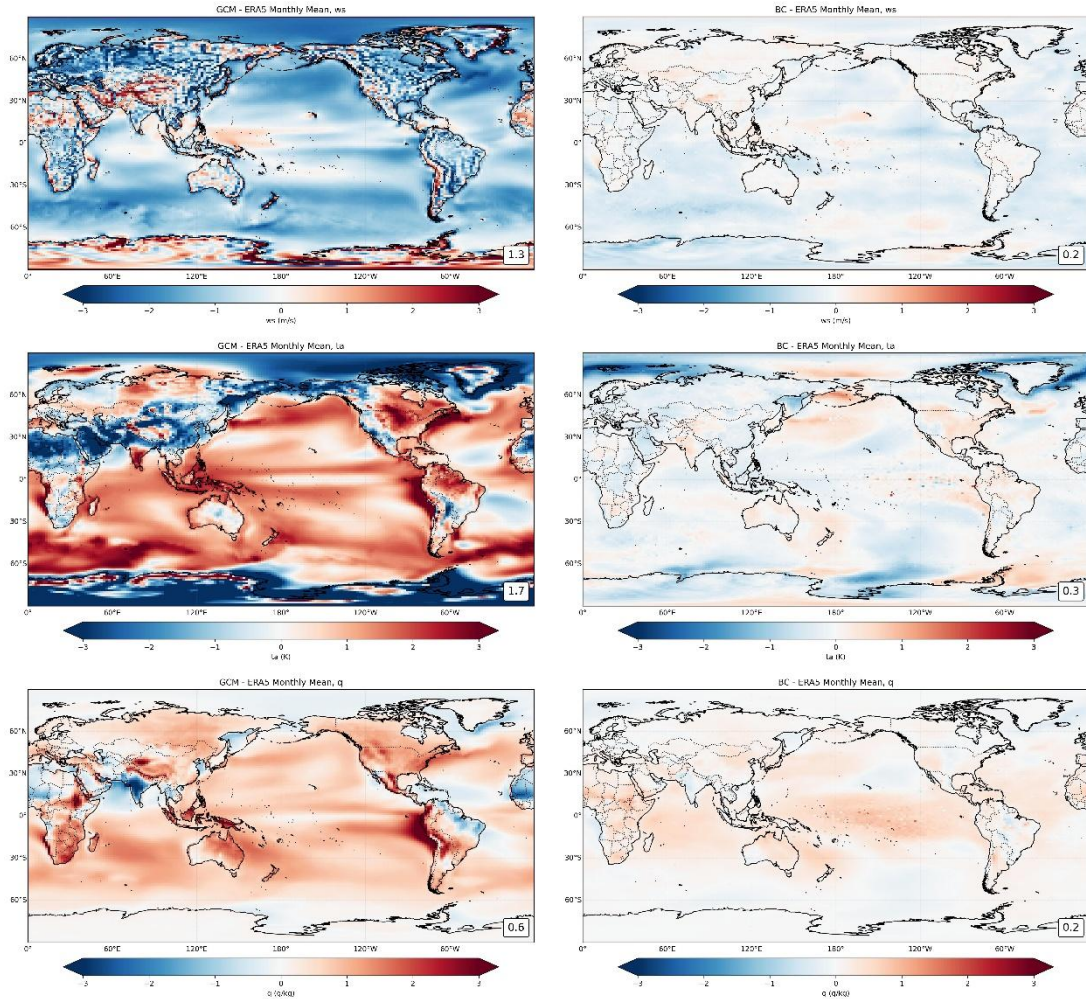


Figure S5 Climatological mean bias maps comparing ERA5 with GCM outputs before (left panels) and after (right panels) bias correction (BC), evaluated at the lowest model level on a monthly time scale for the validation period (1990–2020). The panels show results for wind speed (ws), air temperature (ta), and specific humidity (q). The number at the bottom right shows the mean absolute error.

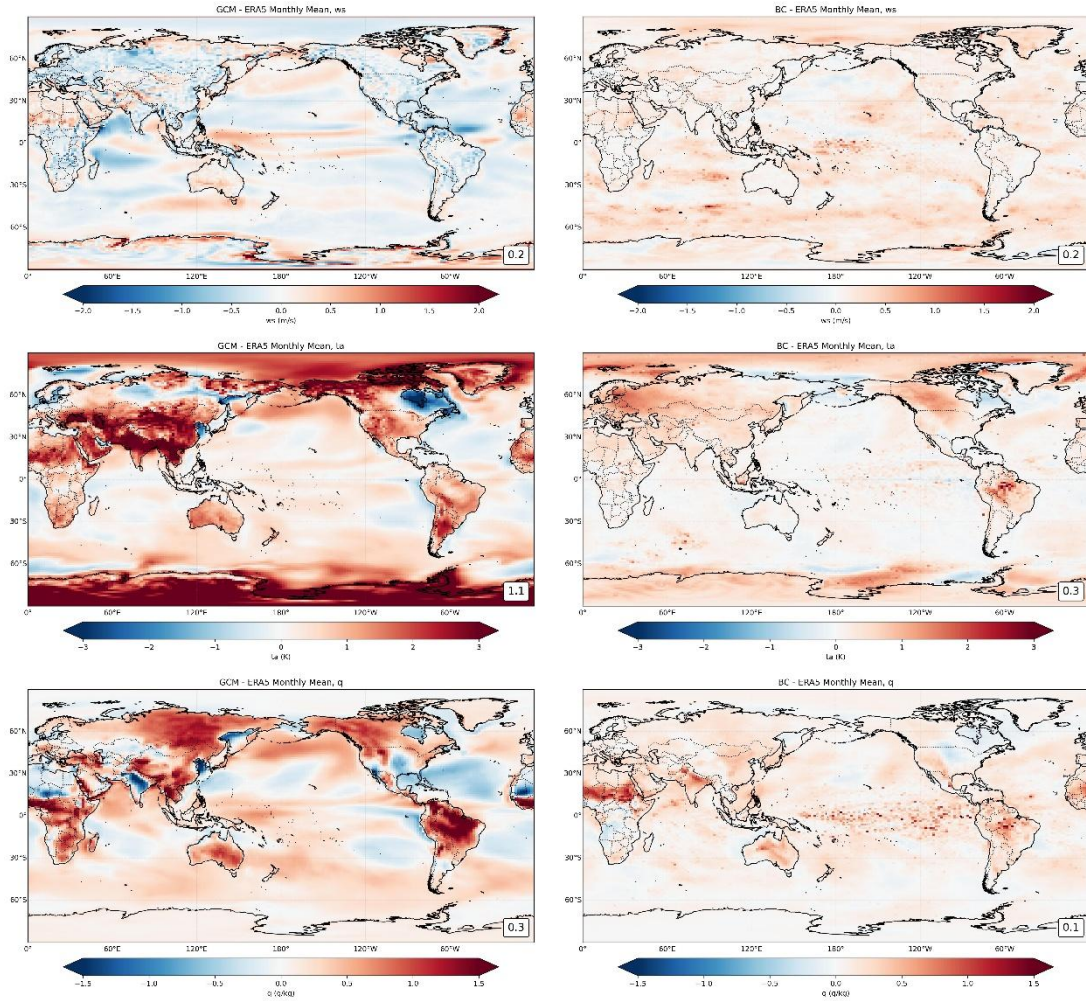


Figure S6 As in Figure 1-5, but for standard deviation

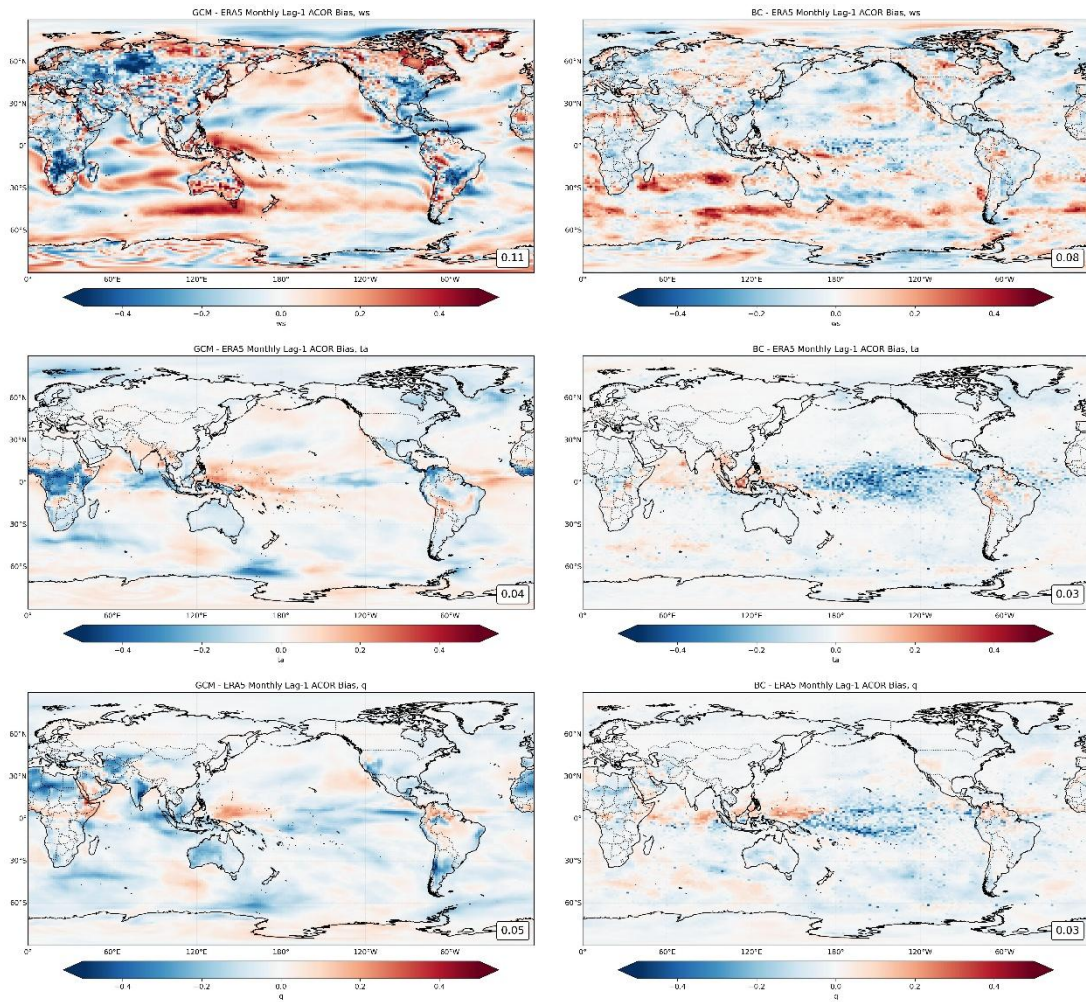


Figure S7 As in Figure 1-5, but for lag1 auto-correlation

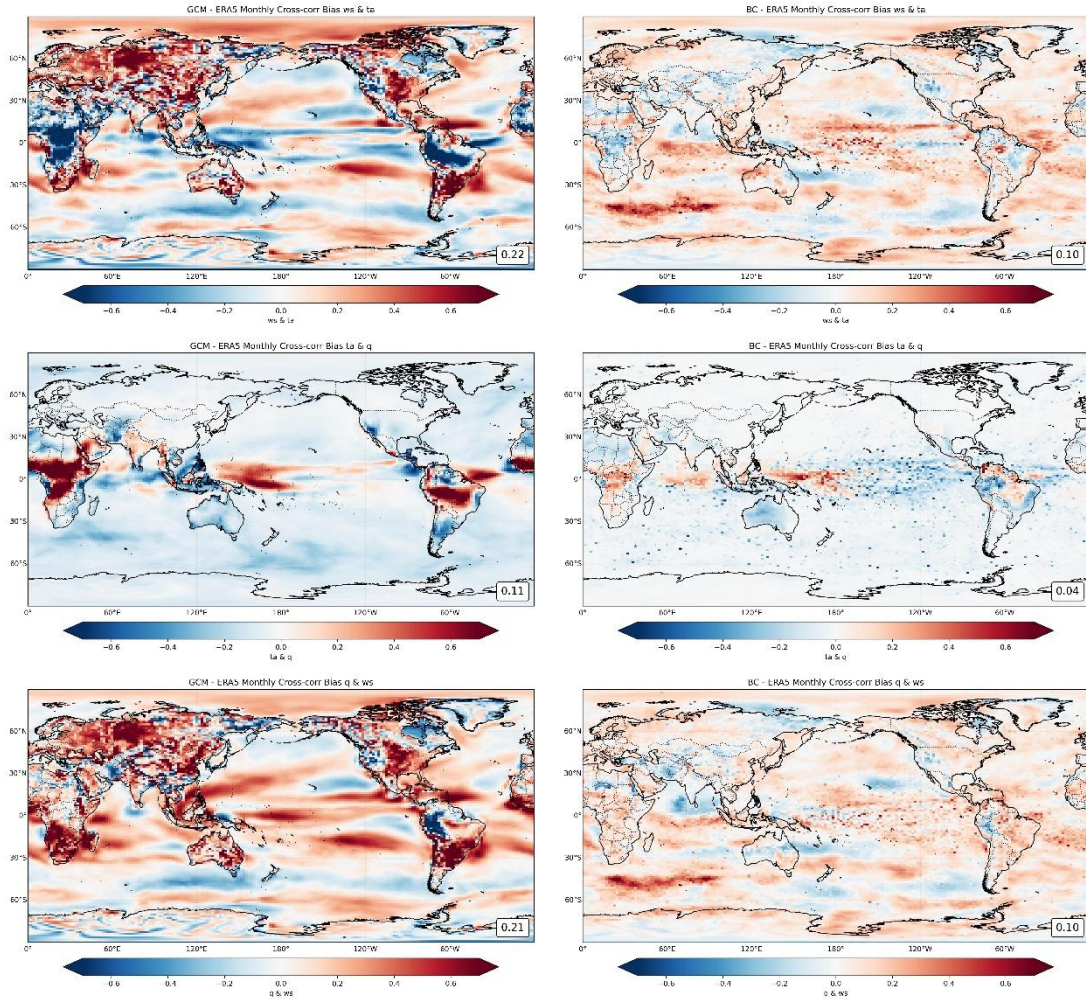


Figure S8 As in Figure 1-5, but for lag0 cross-correlation

S2. Seasonal

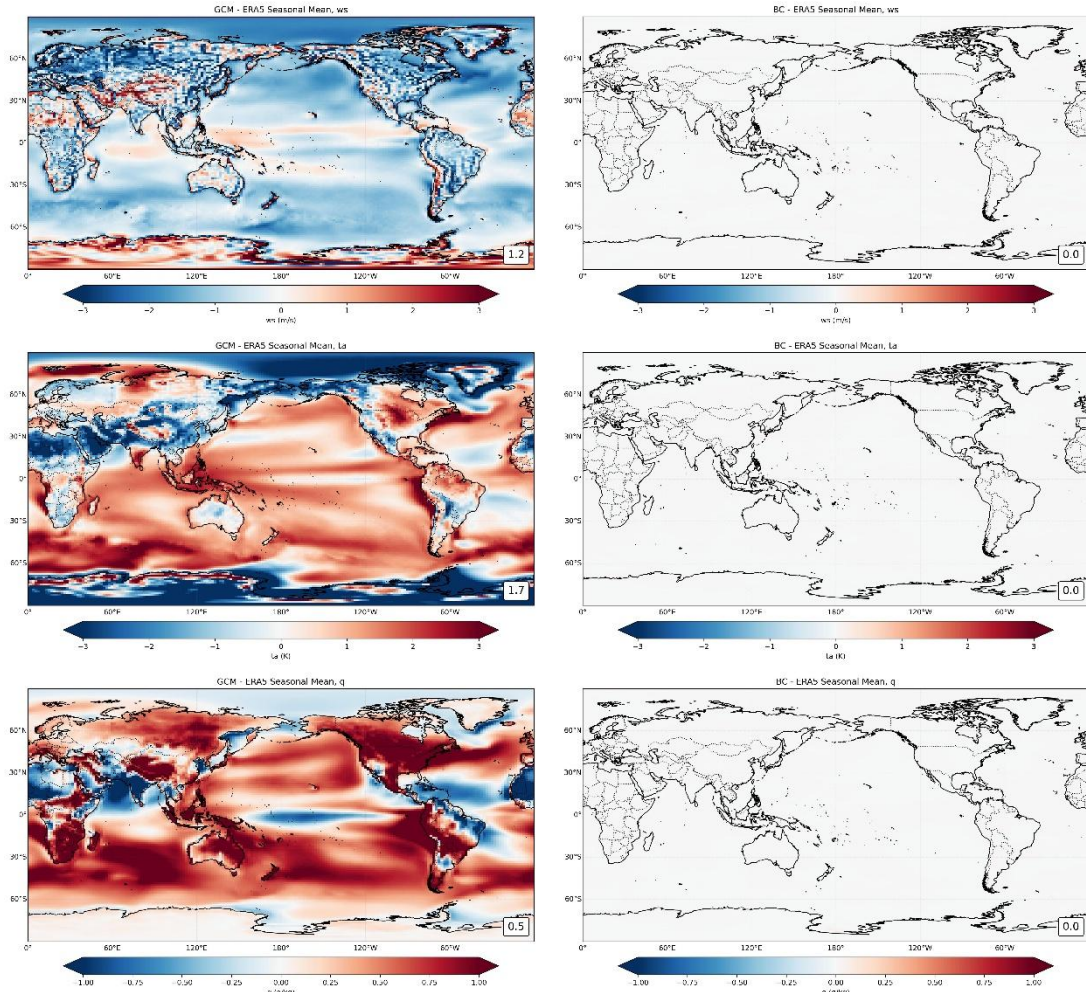


Figure S9 Climatological mean bias maps comparing ERA5 with GCM outputs before (left panels) and after (right panels) bias correction (BC), evaluated at the lowest model level on a seasonal time scale for the calibration period (1959–1989). The panels show results for wind speed (ws), air temperature (ta), and specific humidity (q). The number at the bottom right shows the mean absolute error.

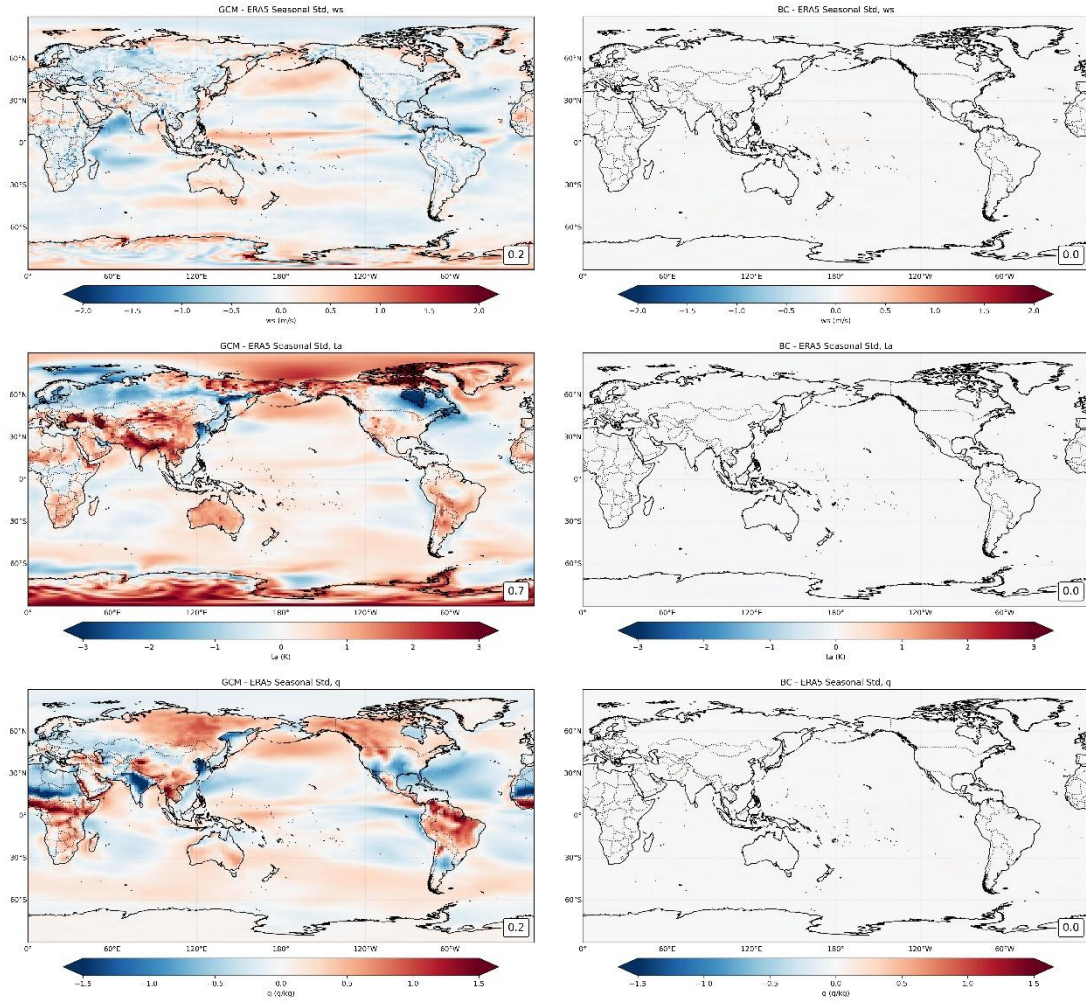


Figure S10 As in Figure 2-1, but for standard deviation

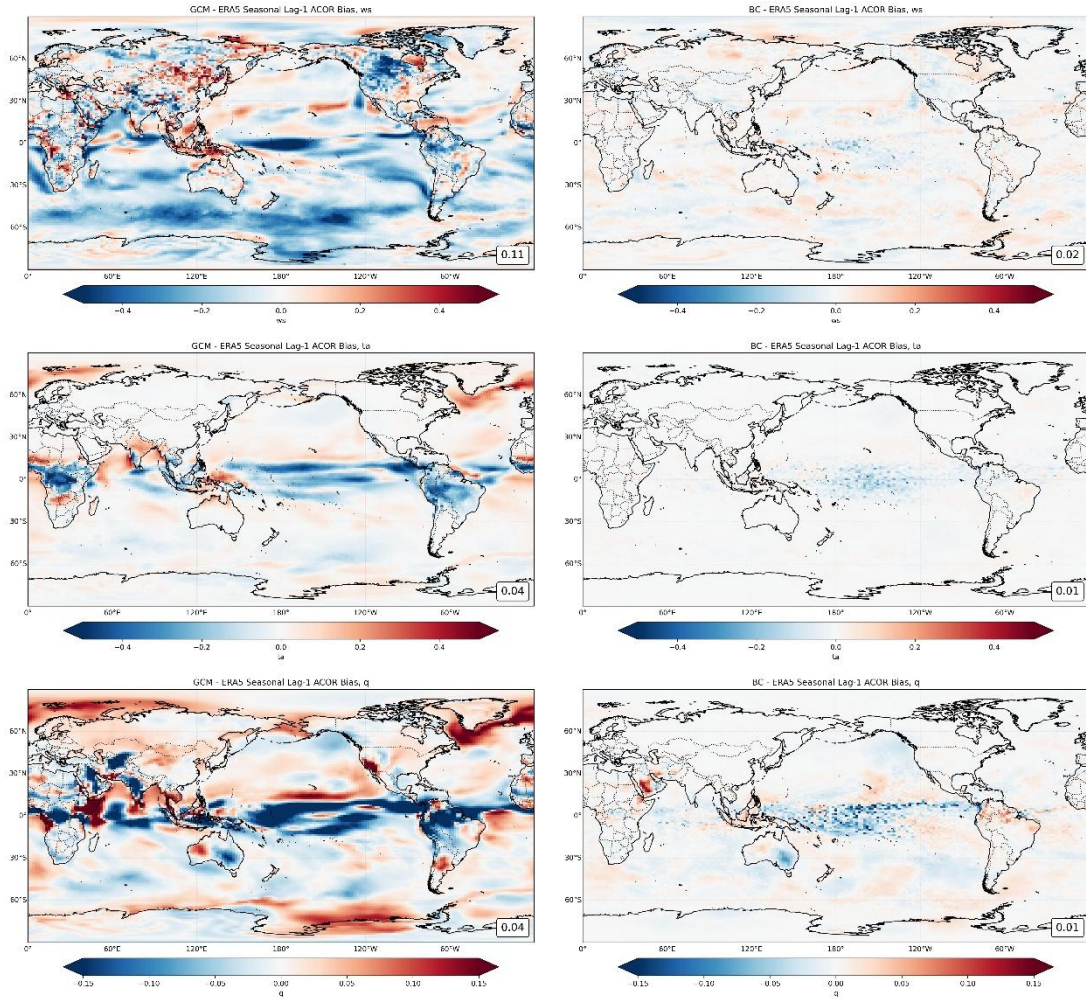


Figure S11 As in Figure 2-1, but for lag1 auto-correlation

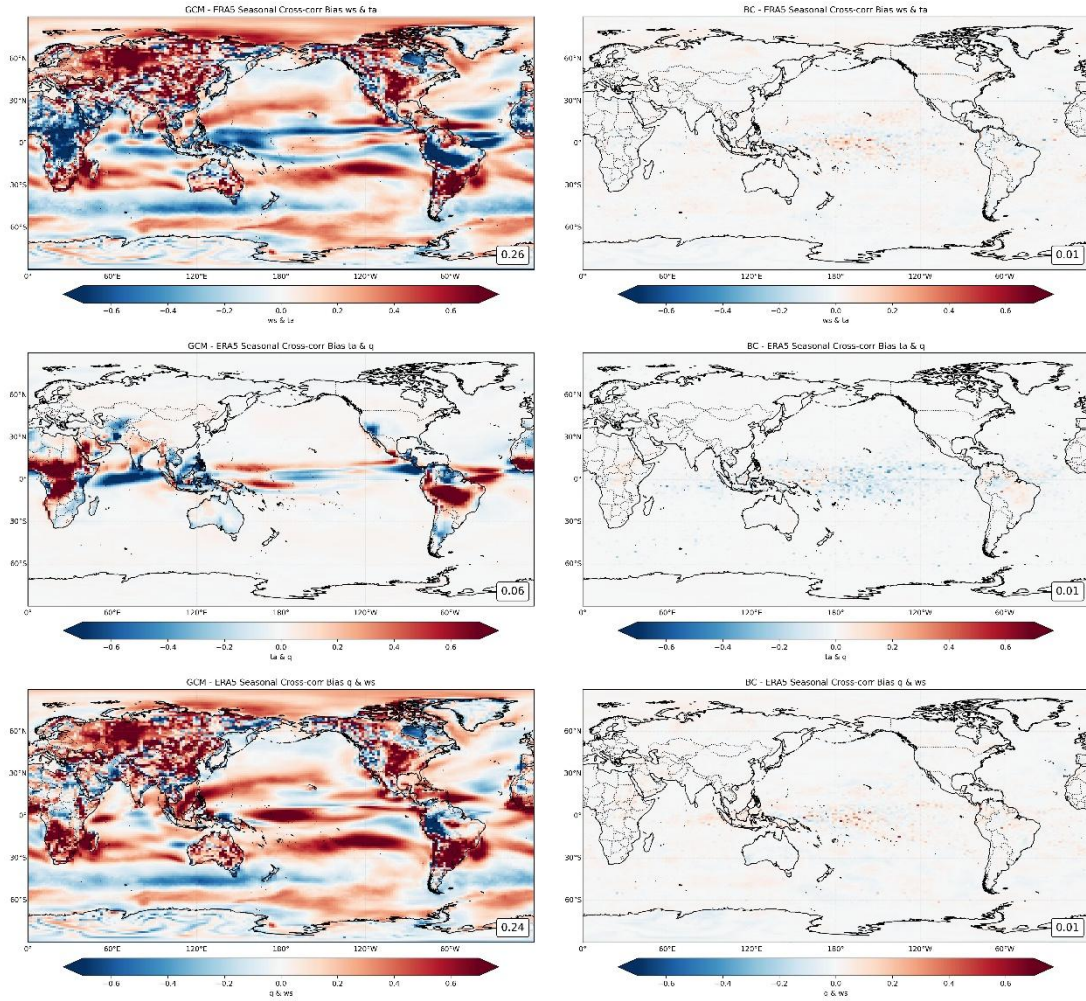


Figure S12 As in Figure 2-1, but for lag0 cross-correlation

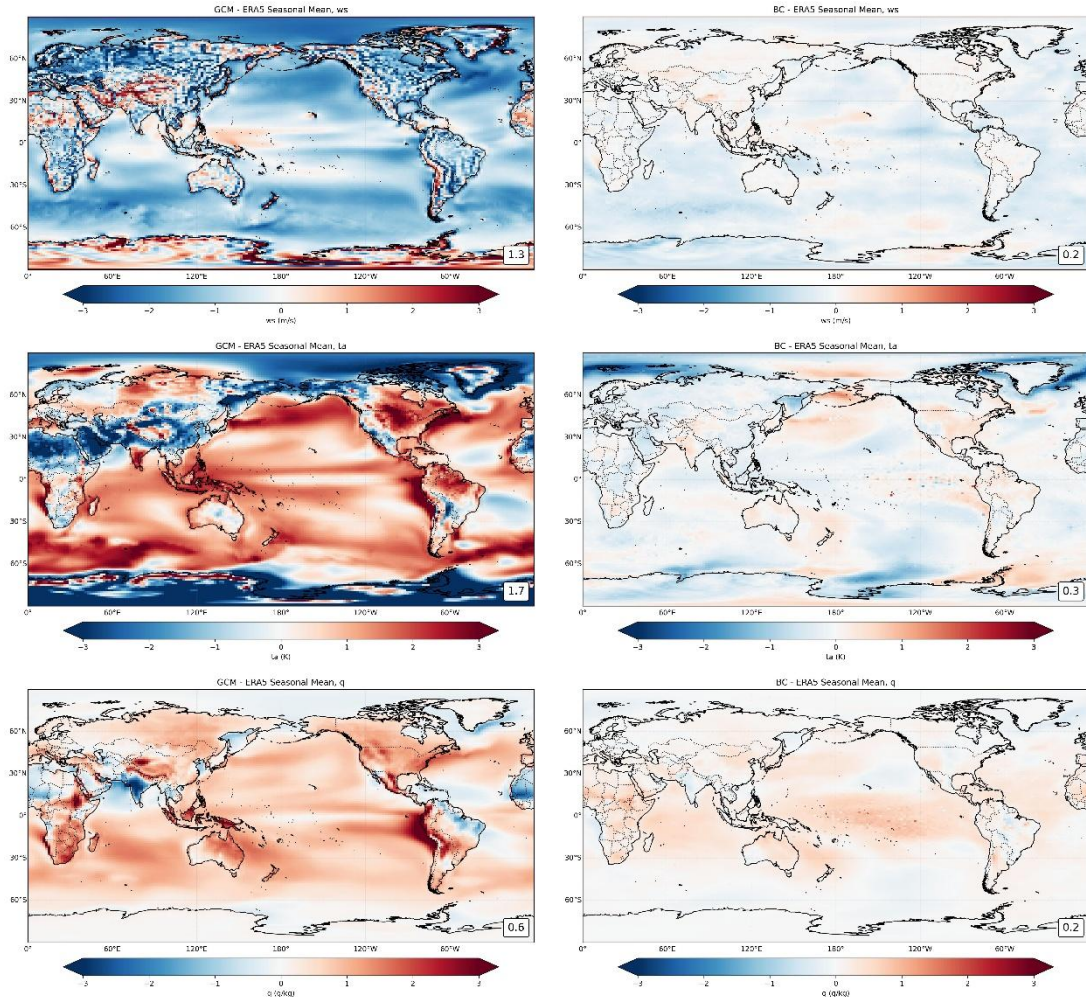


Figure S13 Climatological mean bias maps comparing ERA5 with GCM outputs before (left panels) and after (right panels) bias correction (BC), evaluated at the lowest model level on a seasonal time scale for the validation period (1990–2020). The panels show results for wind speed (ws), air temperature (ta), and specific humidity (q). The number at the bottom right shows the mean absolute error.

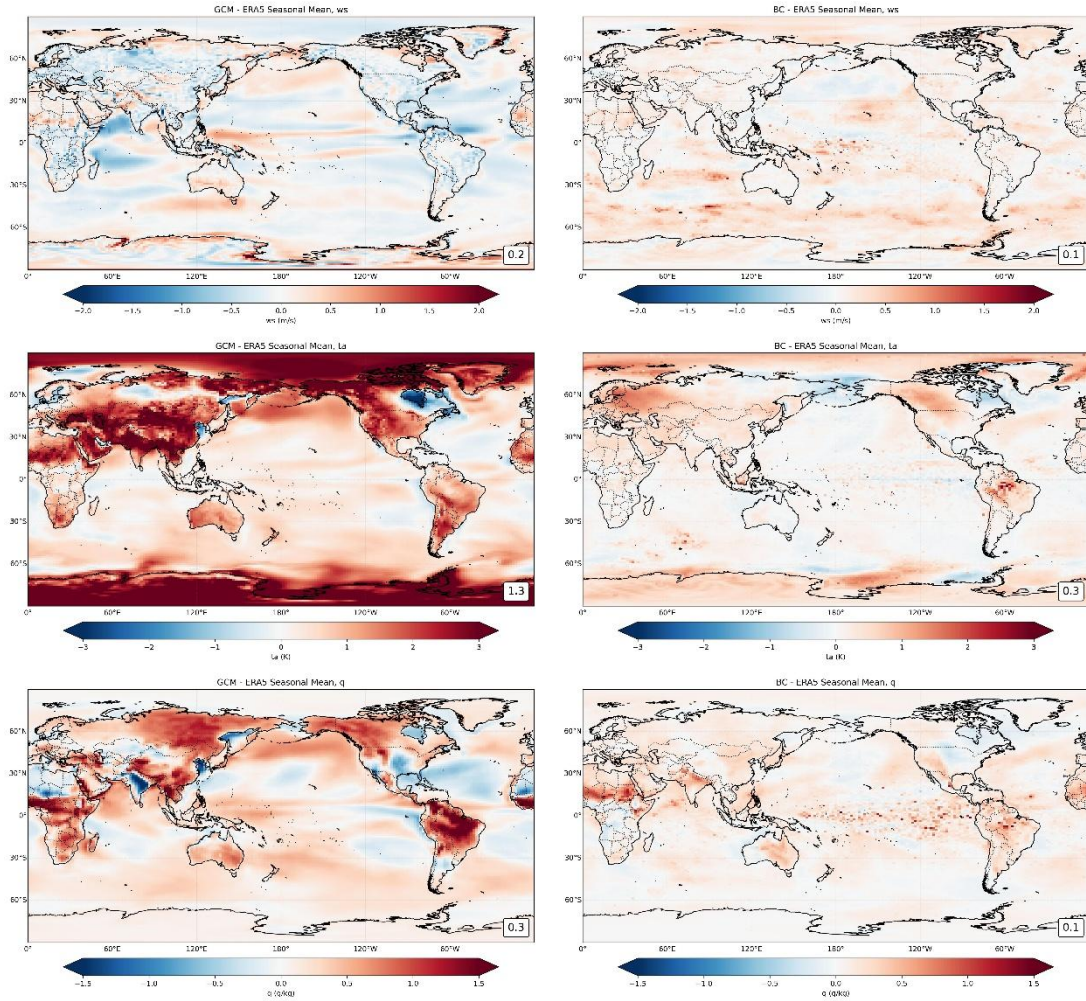


Figure S14 As in Figure 2-5, but for standard deviation

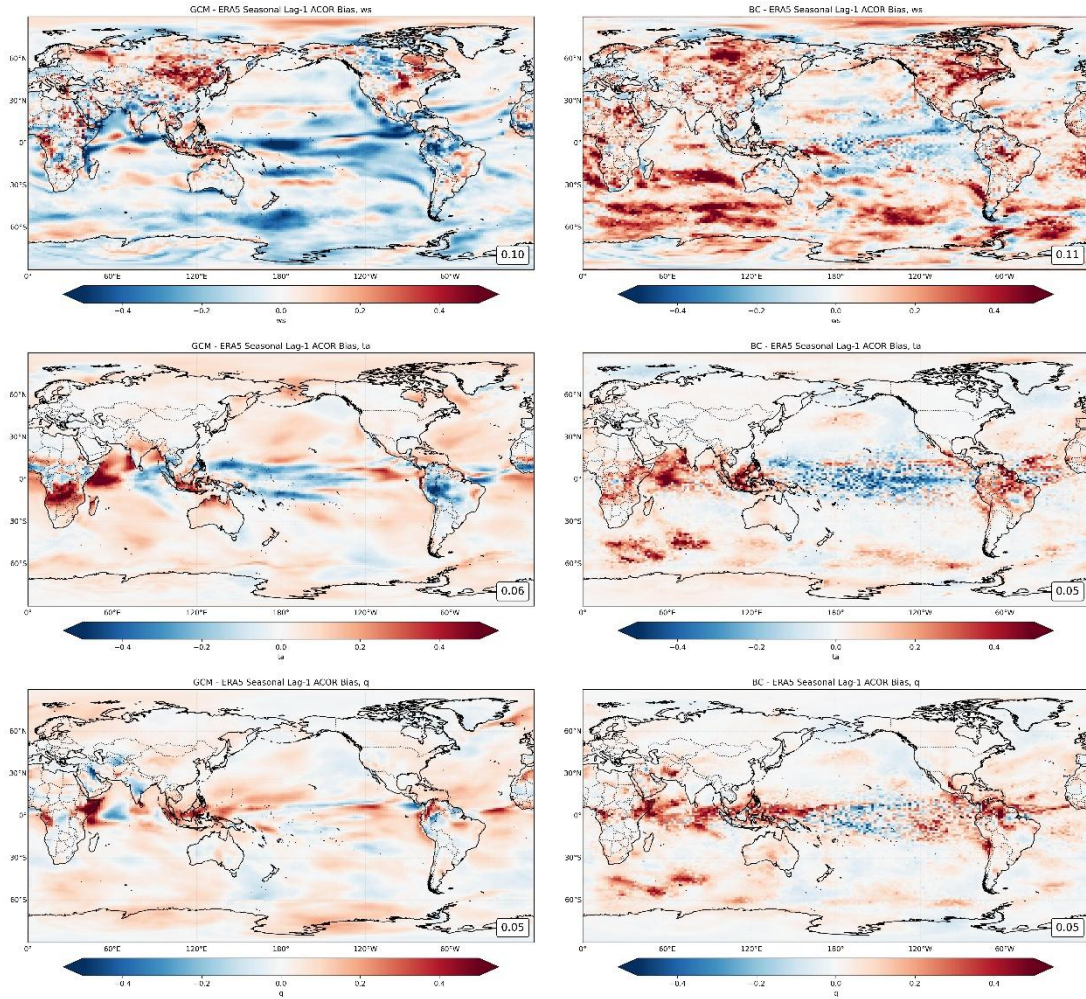


Figure S15 As in Figure 2-5, but for lag1 auto-correlation

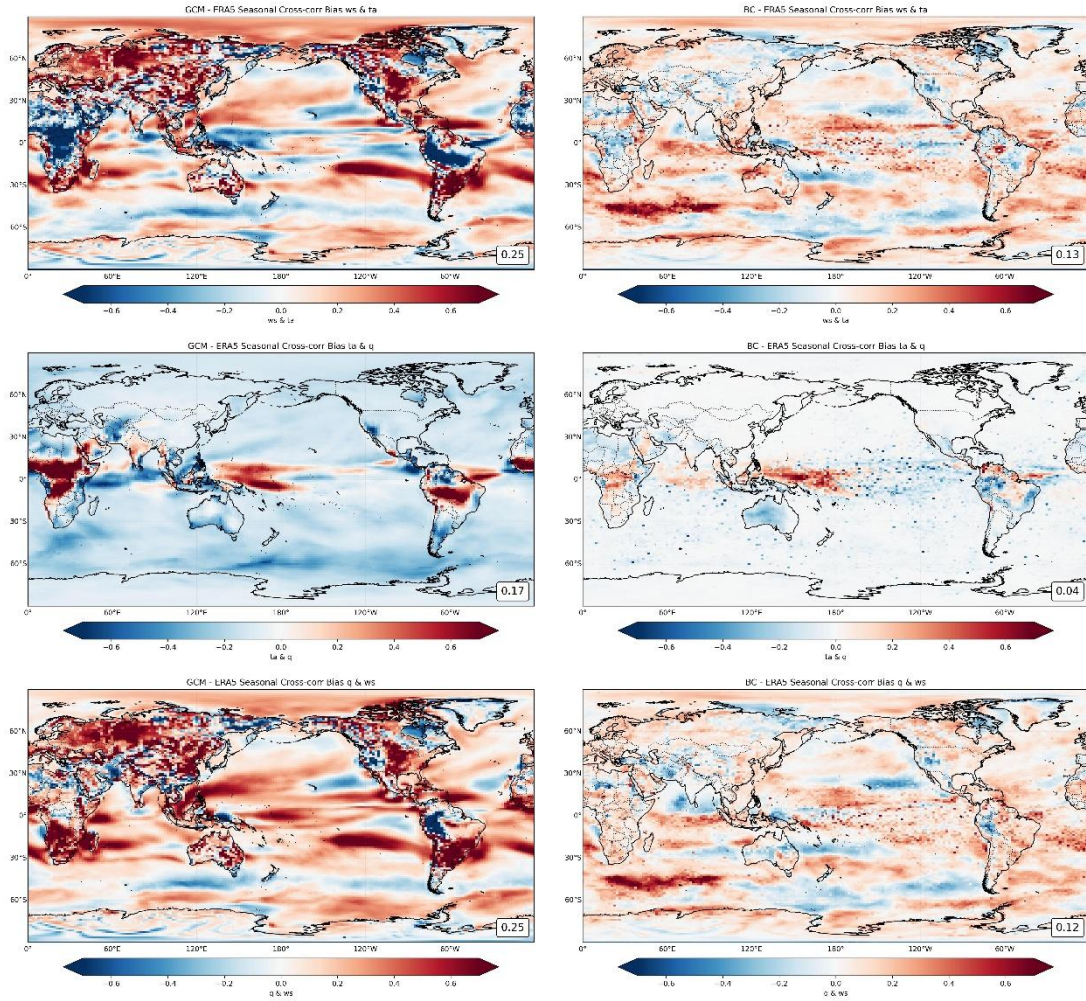


Figure S16 As in Figure 2-5, but for lag0 cross-correlation