



Supplement of

New framework for benchmarking decadal predictions leveraging the PCMDI Metric Package with interactive visualization

Jung Choi et al.

Correspondence to: Jiwoo Lee (lee1043@llnl.gov)

The copyright of individual parts of the supplement might differ from the article licence.

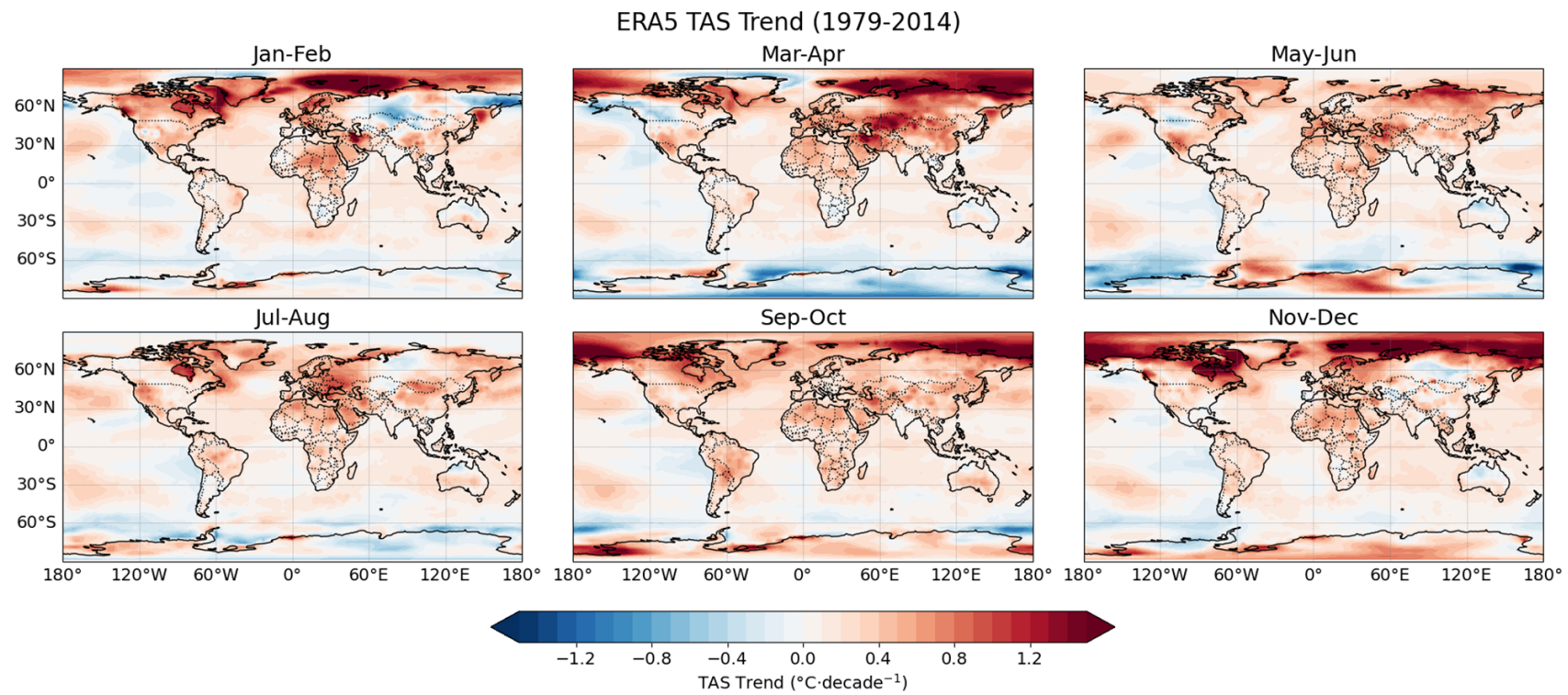


Figure S1. Observed linear trend of surface air temperature (TAS) from ERA5 over the period 1979–2014. Units are [K per 10 yr].

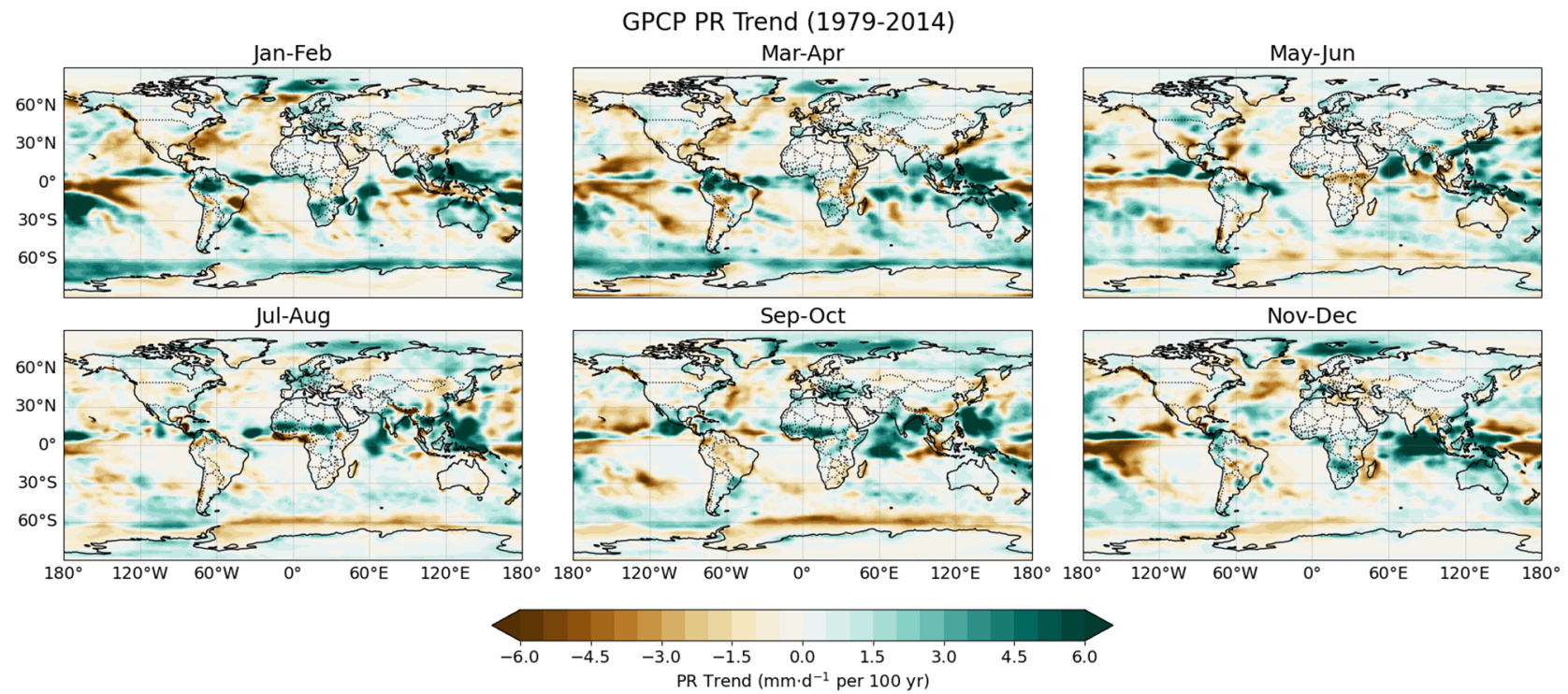


Figure S2. Observed linear trend of precipitation (PR) from GPCP over the period 1979–2014. Units are [$\text{mm}\cdot\text{d}^{-1}$ per 100 yr].

MME TAS RPC (Lead Year 1-5) (ref: ERA5)

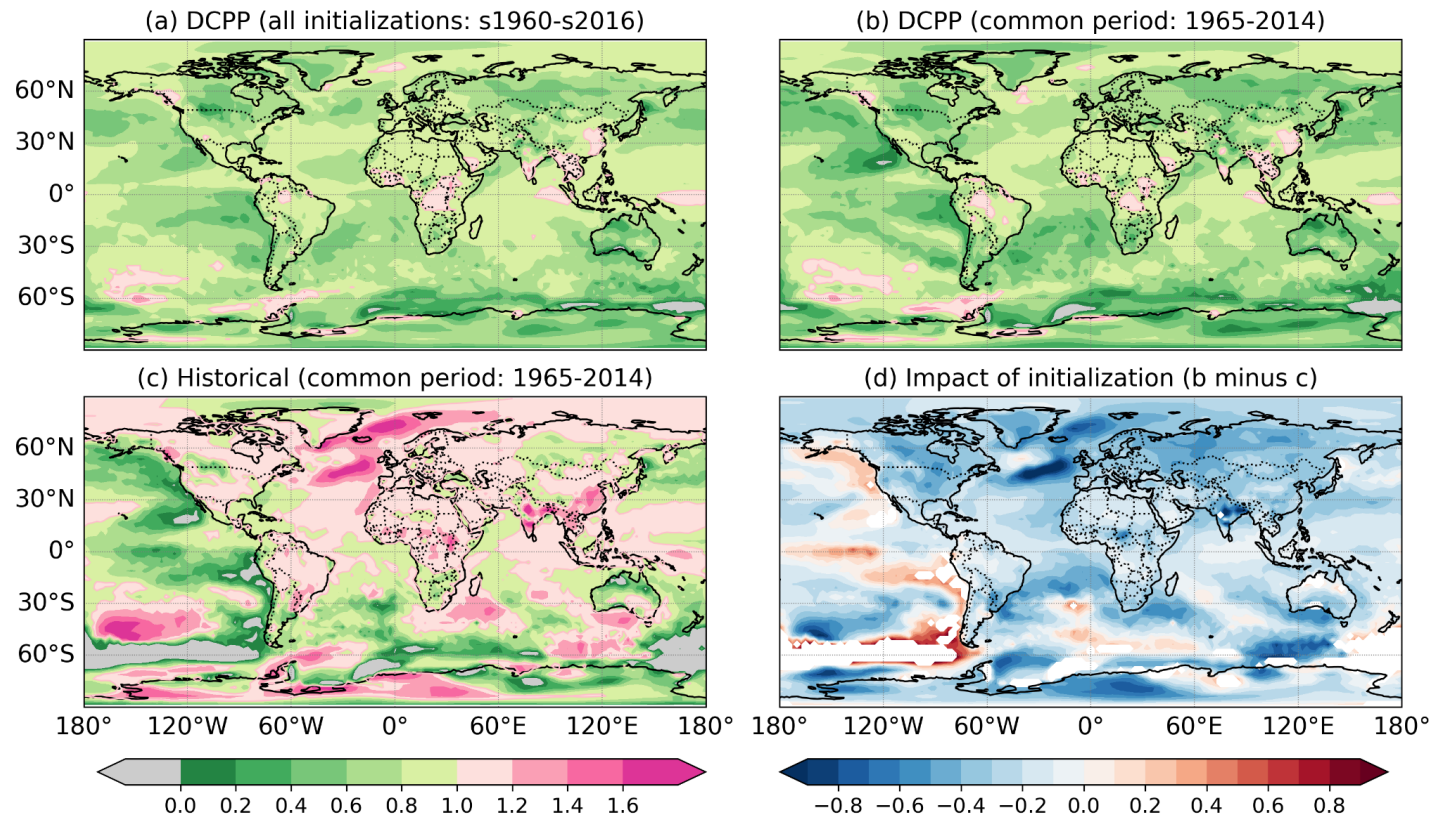


Figure S3. Spatial distribution of the MME at LY1–5 of TAS RPC. (a) RPC calculated from all available DCPP experiments initialized from 1960 to 2016. (b and c) Same as (a) but for the common evaluation period of 1965–2014 from DCPP and HIST simulations, respectively. (d) The difference between (b) and (c) represents the added skill due to initialization. Red regions indicate areas where initialization enhances RPC values.

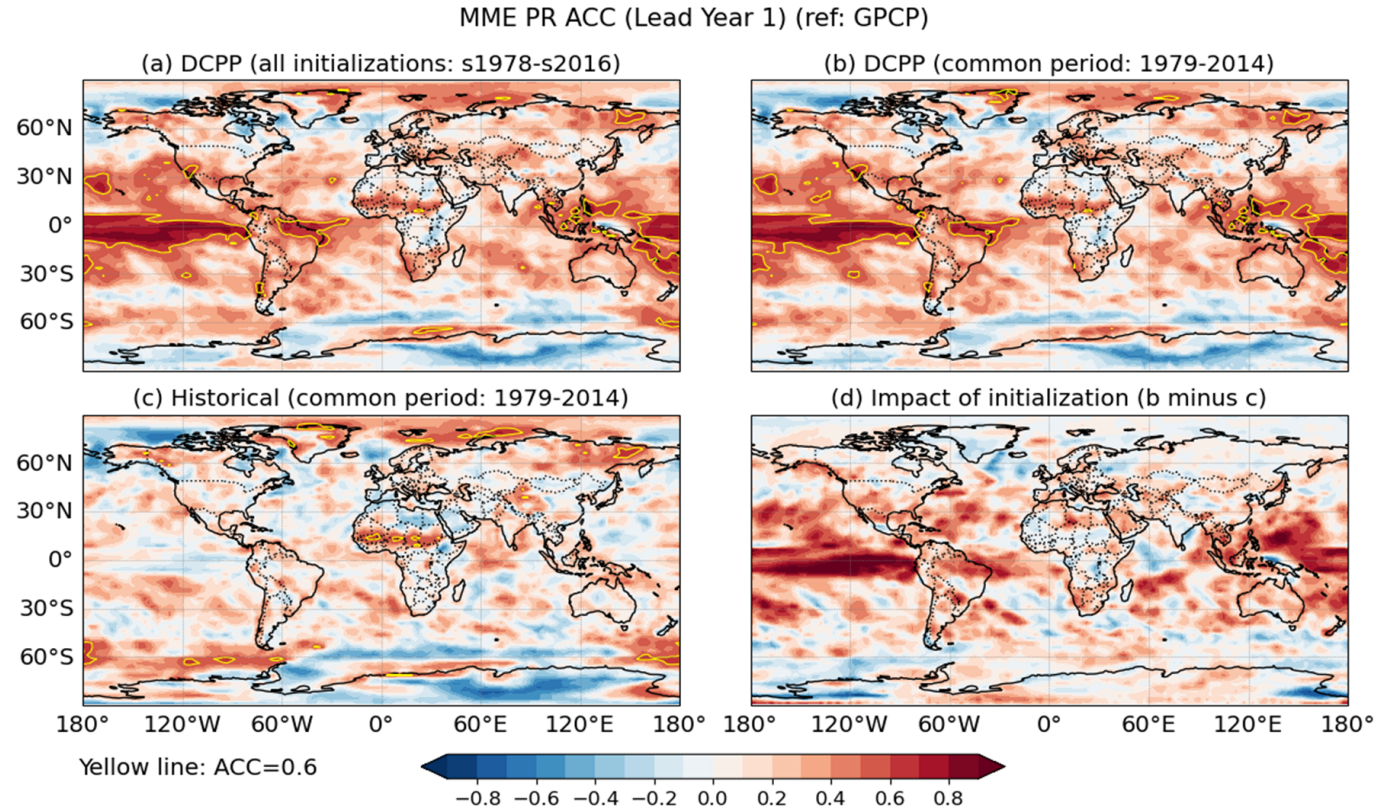


Figure S4. spatial distribution of the MME at LY1 of PR ACC. (a) ACC calculated from all available DCPD experiments initialized from 1960 to 2016. (b and c) Same as (a) but for the common evaluation period of 1965–2014 from DCPD and HIST simulations, respectively. Yellow lines in (a, b, and c) indicate an ACC of 0.6. (d) The difference between (b) and (c) represents the added skill due to initialization. Red regions indicate areas where initialization improves prediction skill.

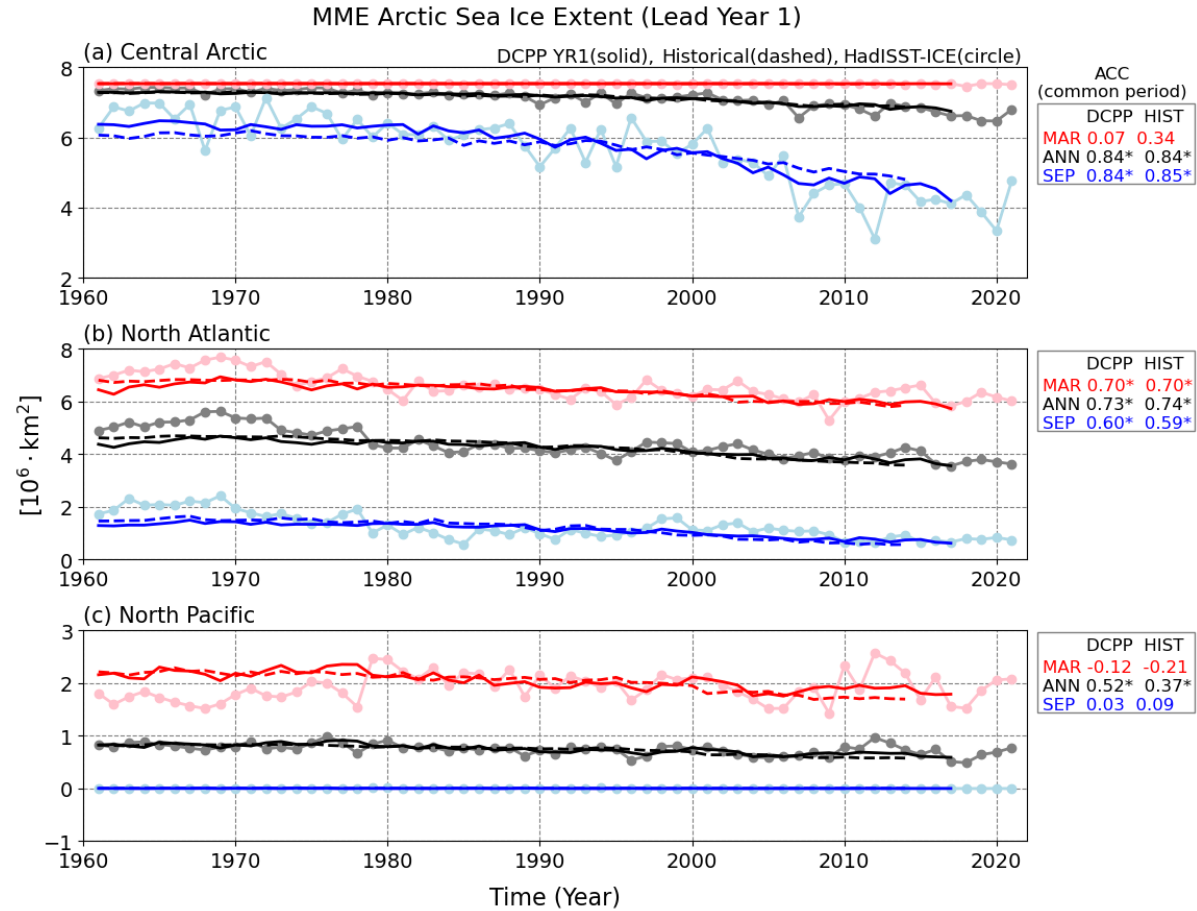


Figure S5. Time series of the Arctic SIE for the MME and observations over the (a) central Arctic, (b) North Atlantic, and (c) North Pacific. Lines with circles represent the observations. Solid and dashed lines represent the DCPP LY1 and HIST experiments, respectively. Black, red, and blue denote the annual mean, March, and September, respectively. ACC values over the common evaluation period are listed to the right of each panel. Asterisks indicate values that are statistically significant at the 99% confidence level based on the two-tailed Student's t -test.

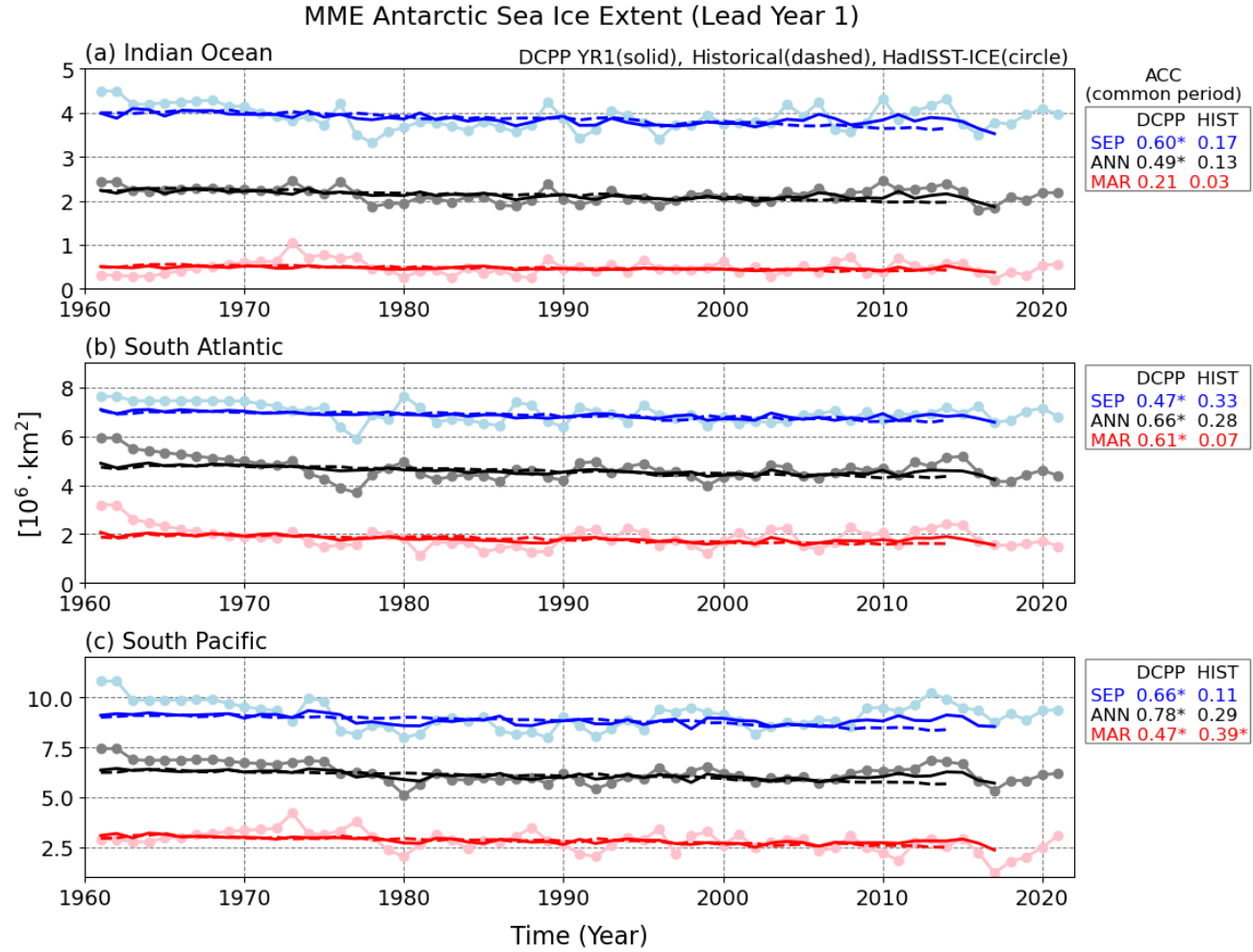


Figure S6. Same as Fig. S5 but for the Antarctic SIE.