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Supplement of

Timescale dependence of the relationship between the East Asian summer monsoon strength and precipitation over eastern China in the last millennium

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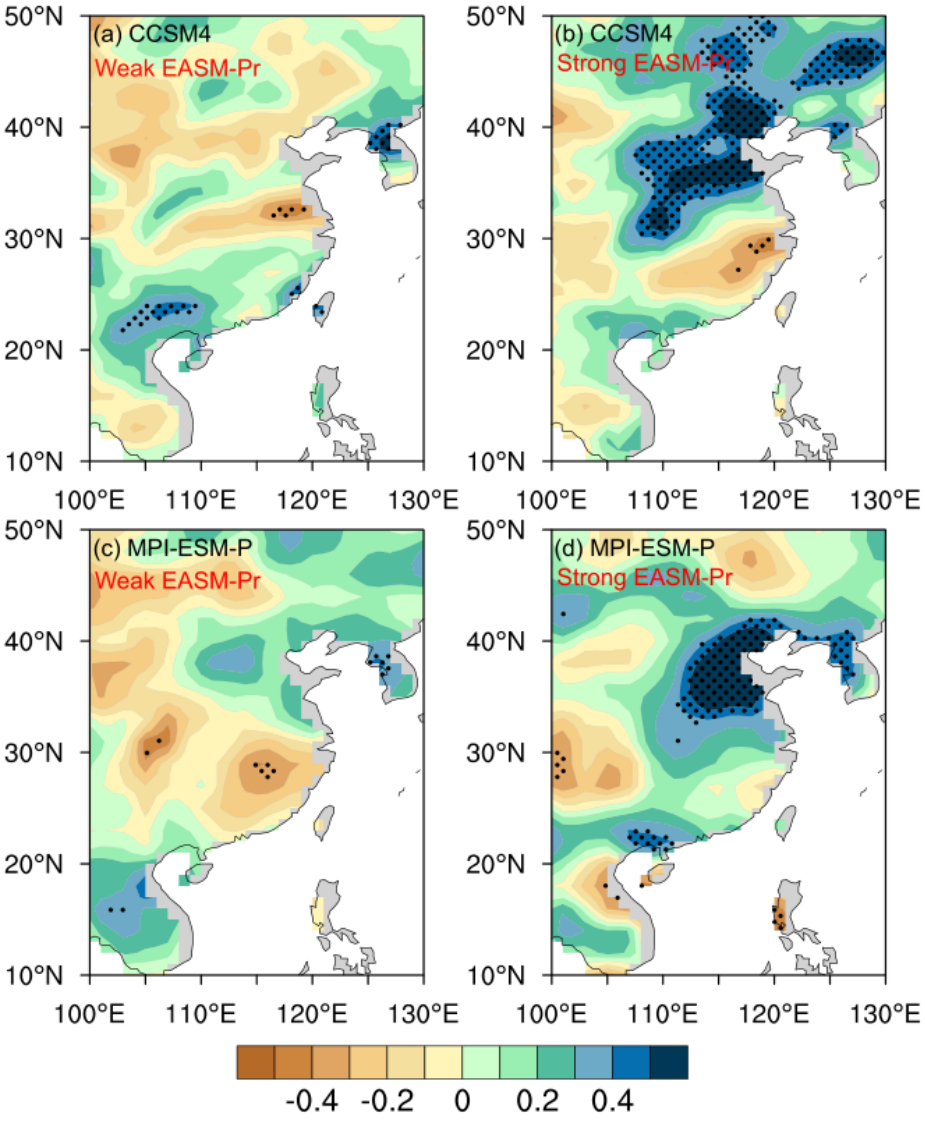

Figure S1. Distribution of the correlation coefficient between the EASM strength and summer precipitation over East Asia during (a) weak and (b) strong EASM-precipitation relationship periods, respectively, in CCSM4; (c) and (d) are the same as (a) and (b) but for MPI-ESM-P. The weak (strong) EASM-precipitation relationship periods selected were 885–915 A.D. (1510–1540 A.D.) in CCSM4 and 1685–1715 A.D. (1165–1195 A.D.) in MPI-ESM-P. The areas passing the 95% significance test are dotted.

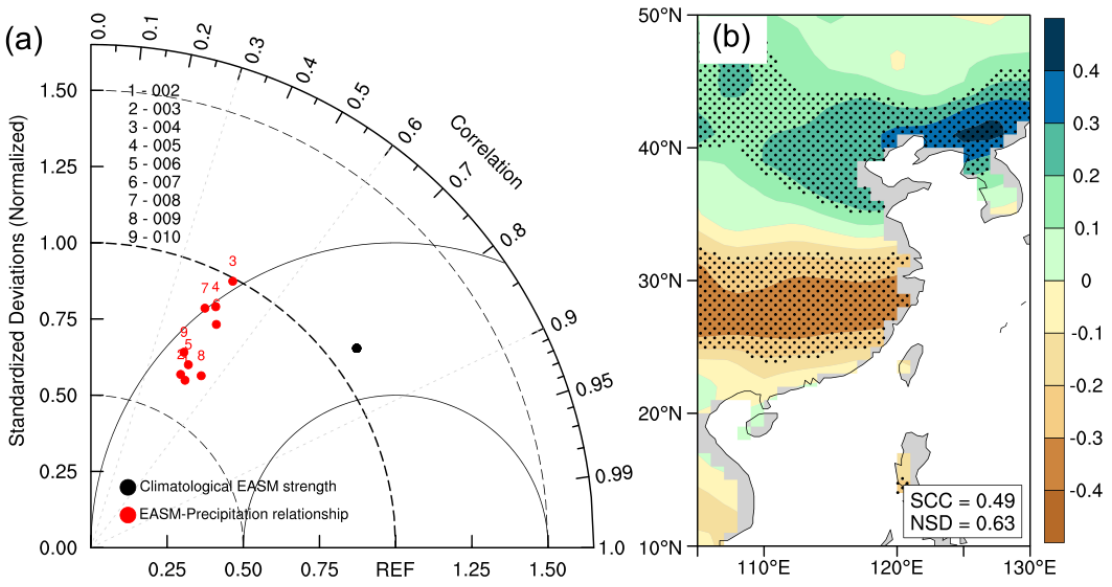

Figure S2. (a) Taylor diagram displaying the pattern statistics of the climatological summer 850-hPa meridional winds over East Asia (20°–45°N, 105°–135°E) between the CESM-LME full-forcing experiments and observations; (b) distribution of the correlation coefficient between the EASM strength and summer precipitation over East Asia in CESM-LME. Corresponding SCCs and NSDs compared to observations (Fig. 4a) are shown in the bottom right corner. Note that the climatological summer 850-hPa meridional winds are almost identical in the CESM-LME members and areas passing the 95% significance test are dotted in (b).

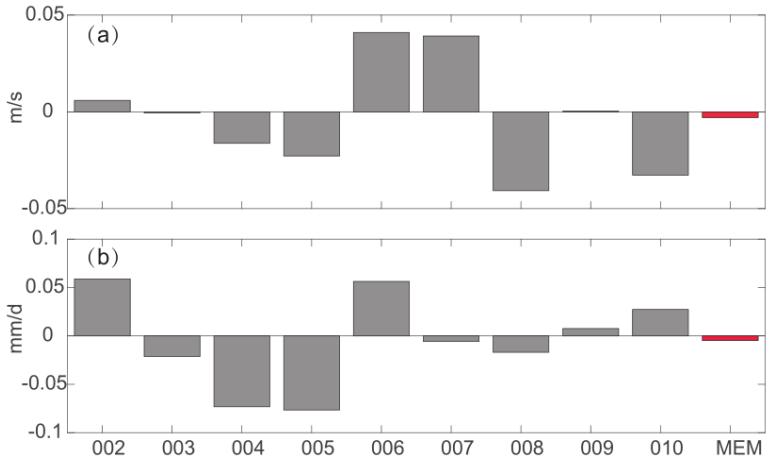

Figure S3. Difference in the (a) EASM strength and (b) regionally averaged summer precipitation over eastern China (20°–45°N, 105°–120°E) between the MCA and LIA. The first nine columns represent the individual ensemble members of CESM-LME full-forcing experiments. The last column shaded in red represent the MEM of CESM-LME full-forcing experiments.

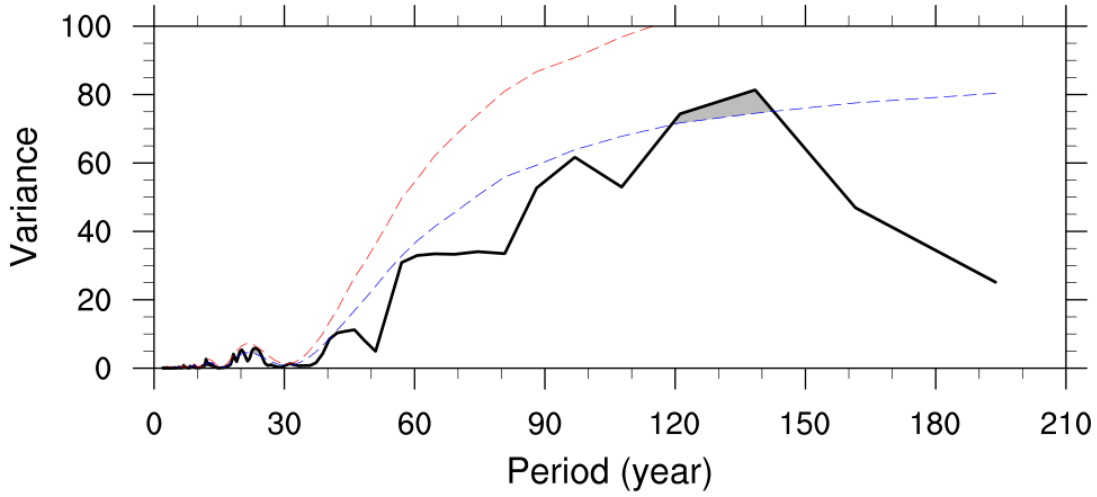

Figure S4. Power spectrum of the MEM 31-year RCs in the CESM-LME sing-forcing experiments. Red (Blue) dashed lines represent 95% (90%) significance level estimated from 10000 Monte Carlo simulations. Spectra passing 90% significance test are shaded in gray.

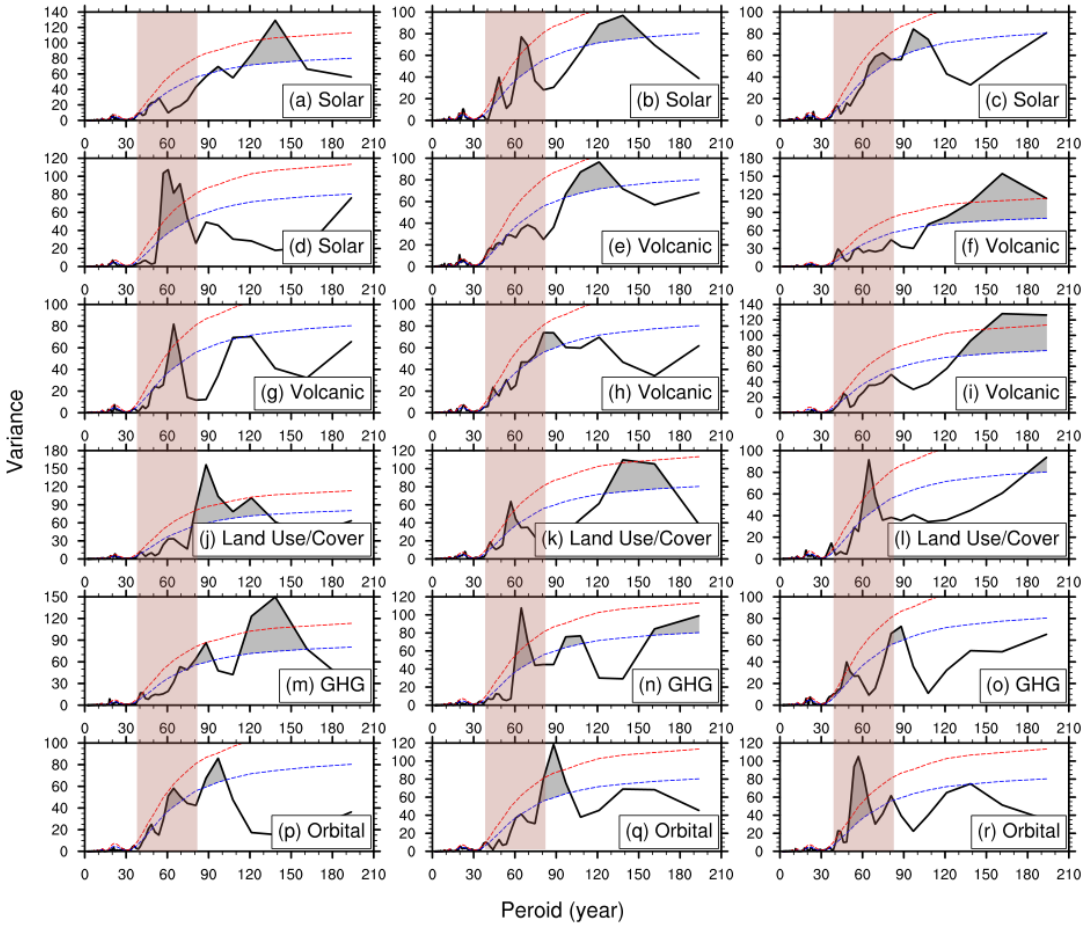

Figure S5. Power spectrum of 31-year RCs in the CESM-LME sing-forcing experiments. Red (Blue) dashed lines represent 95% (90%) significance level estimated from 10000 Monte Carlo simulations. Spectra passing 90% significance test are shaded in gray. The periodicity from 40 to 80-year is marked with the brown vertical panels.