Supporting Information for

**Summer extreme consecutive dry days over Northeast China in the changing climate: Observed features and projected future changes based on CESM-LE**

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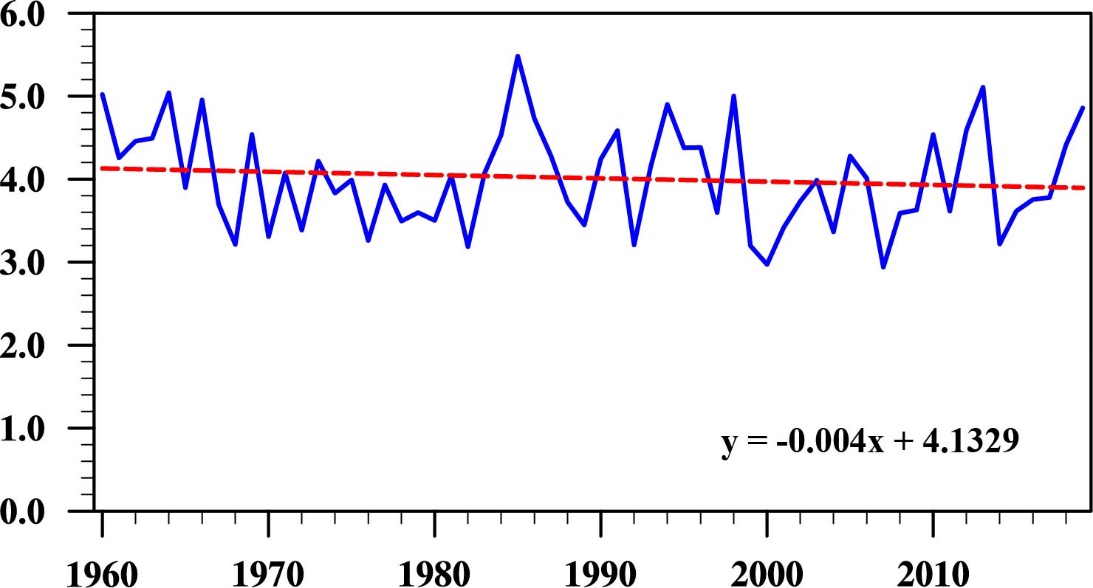
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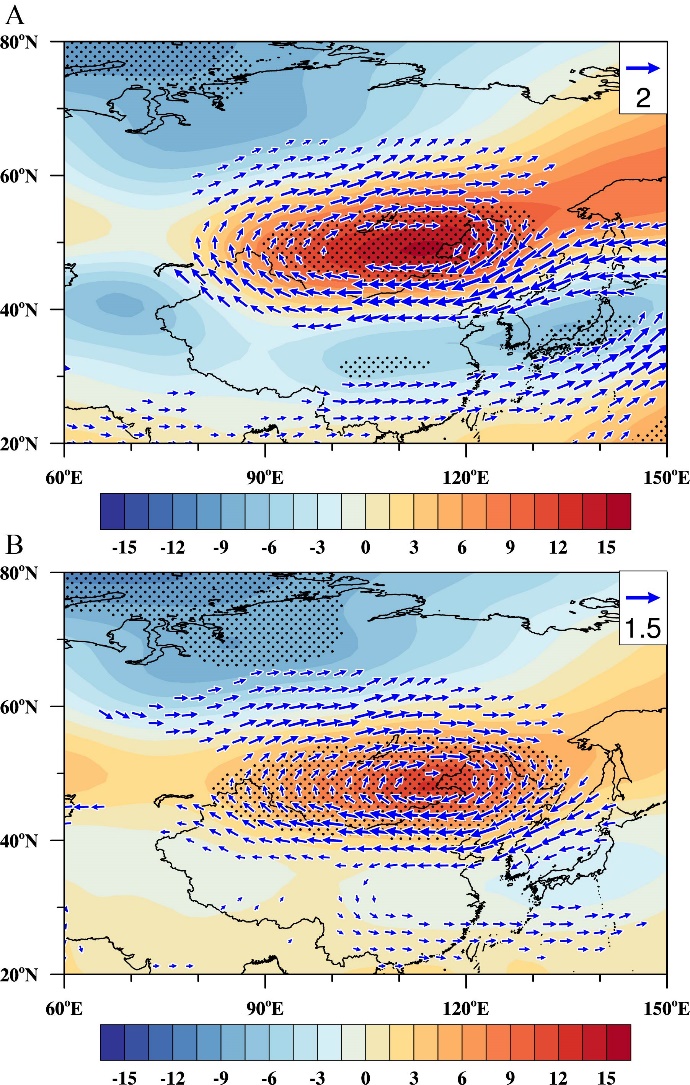
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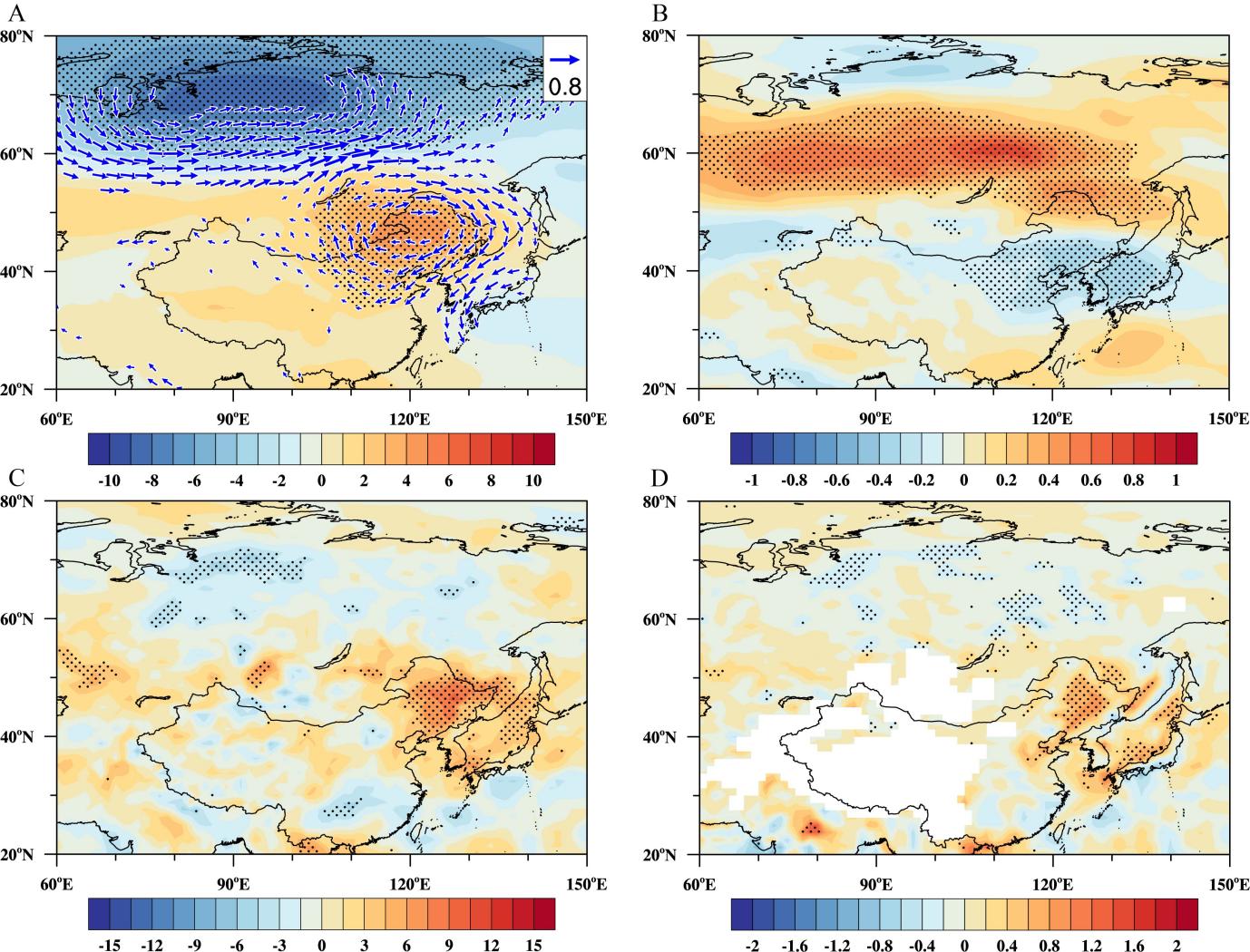
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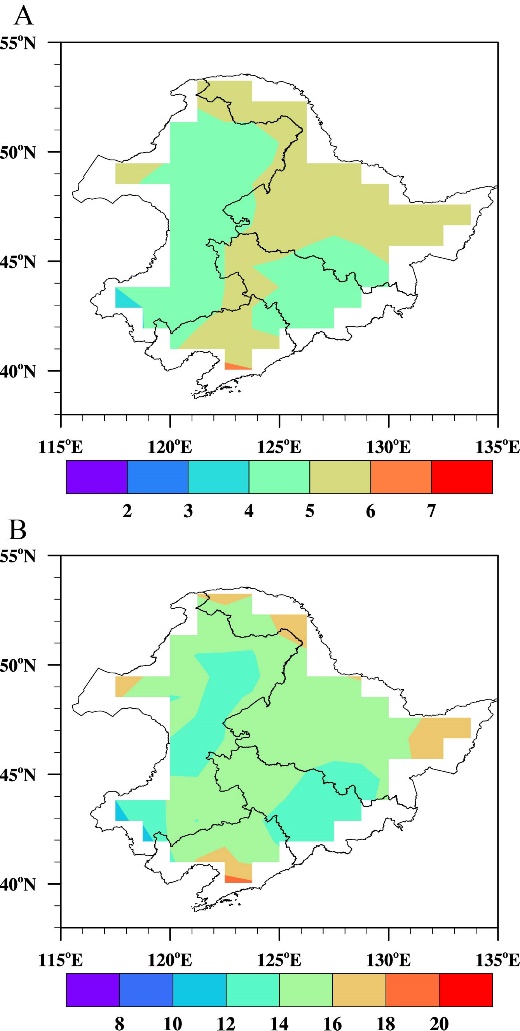
**Figure S1** The time series of summer precipitation averaged over Northeast China (blue line; unit: mm/day) and its linear trend (red line) during 1960−2019. The linear trend does not pass the 90% confidence level.



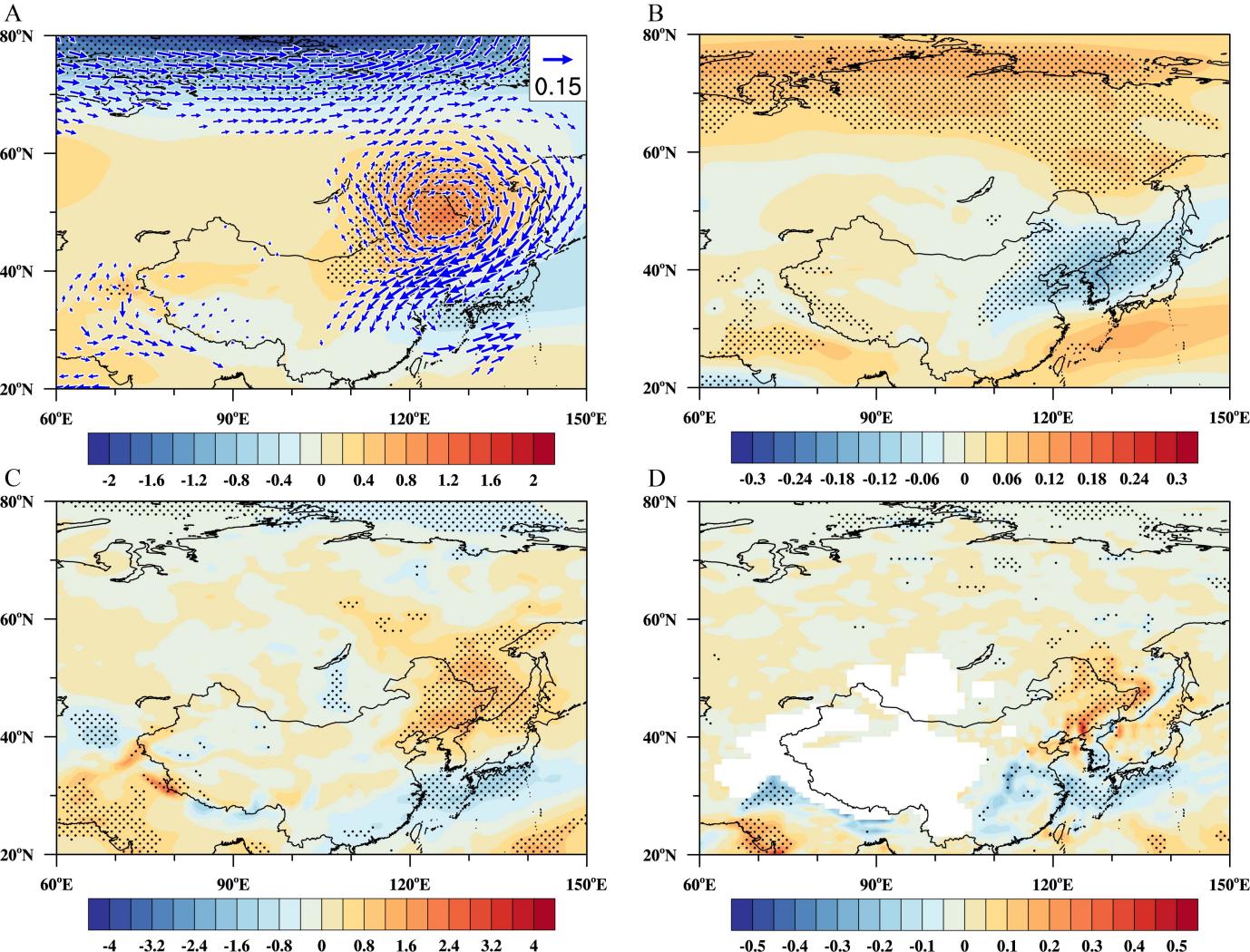
**Figure S2** Regressions of summer anomalous **(A)** 200 hPa and **(B)** 500 hPa geopotential height (shading; unit: gpm) and horizontal wind (vector; unit: m s−1) against the normalized CDDA index during 1960−2019. Stippled regions and vectors indicate that the anomalies are significant at the 95% confidence level.



**Figure S3** Regressions of summer anomalous **(A)** 850 hPa geopotential height (shading; unit: gpm) and horizontal wind (vector; unit: m s−1), **(B)** 850 hPa zonal wind (unit: m s−1), **(C)** 500 hPa vertical velocity (unit: 10−3 Pa s−1), and **(D)** moisture divergence vertically integrated from the surface to 850 hPa (unit: 10−5 kg m−2 s−1) against the normalized CDDA index during 1960−2019. Stippled regions and vectors indicate that the anomalies are significant at the 95% confidence level. The results are calculated using the detrended data.



**Figure S4** **(A)** The spatial distribution of the threshold (unit: day) of the summer extreme CDDs over NEC in the CESM-LE MME during 1960−2019. **(B)** The climatology of accumulated days of the summer extreme CDDs (CDDA; unit: day) over NEC in the CESM-LE MME during 1960−2019.



**Figure S5** Regressions of summer anomalous **(A)** 850 hPa geopotential height (shading; unit: m) and horizontal wind (vector; unit: m s−1), **(B)** 850 hPa zonal wind (unit: m s−1), **(C)** 500 hPa vertical velocity (unit: 10−3 Pa s−1), and **(D)** moisture divergence vertically integrated from the surface to 850 hPa (unit: 10−5 kg m−2 s−1), against the normalized CDDA index in the CESM-LE MME during 1960−2019. Stippled regions and vectors indicate that the anomalies are significant at the 95% confidence level. The results are calculated using the detrended data.