Supplemental Material

Journal of Climate

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https://doi.org/10.1175/JCLI-D-22-0695.1

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Variations in Summer Extreme Humid-Heat Events over Eastern China and the Possible Associated Mechanisms

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Fig. S1. Plots of regression maps of (a) Z200 (b) Z500 (c) Z850 (unit: gpm), (d) 200-hPa and (e) 850-hPa wind divergent (unit: s\(^{-1}\)) to the EHHE index in summer during the period of 1961–2020. Stippling in (a) – (e) denote the grids in which the anomalies are significant at the 95% confidence level using Student's T test.
Fig. S2. Plots of regression maps of (a) 200-hPa wind divergent (unit: \(s^{-1}\)), (b) vertical velocity (shading; units: \(10^{-3} \text{ Pa s}^{-1}\)) and vertical–horizontal cross section averaged along 110°–122°E for vertical wind (vector; units: \(\text{m s}^{-1}\)) to SST1 in summer during the period of 1961–2020. Stippling in (a) (b) denote the grids in which the anomalies are significant at the 95% confidence levels using Student's T test.
**Fig. S3.** The composite difference of summer (a) 300-hPa (b) 500-hPa and (c) 850-hPa vertical velocity (units: $10^{-3}$ Pa s$^{-1}$) between the experiments SEN1 and CTL. The black dots areas in (a), (b) and (c) indicate significant regression at 95% confidence level with the Student's T test.
Fig. S4. Plots of regression maps of vertical velocity (shading; units: $10^{-3}$ Pa s$^{-1}$) and vertical–horizontal cross section averaged along 110°–122°E for vertical wind (vector; units: m s$^{-1}$) to SSTI2 in summer during the period of 1961–2020. Stippling denote the grids in which the anomalies are significant at the 95% confidence levels using Student's T test.
Fig. S5. Plots of regression maps of (a) 850-hPa, (b) 200-hPa, (c) 200-hPa wind divergent (unit: s⁻¹), (d) vertical velocity (shading; units: 10⁻³ Pa s⁻¹) and vertical–horizontal cross section averaged along 110°–122°E for vertical wind (vector; units: m s⁻¹) to the sign-reversed SICI in summer during the 1961–2020 period. Stippling in (a) - (d) denote the grids in which the anomalies are significant at the 95% confidence levels using Student's T test.