Supporting Information for

**Growing pacific linkage with the interannual variability of North Atlantic explosive cyclogenesis**

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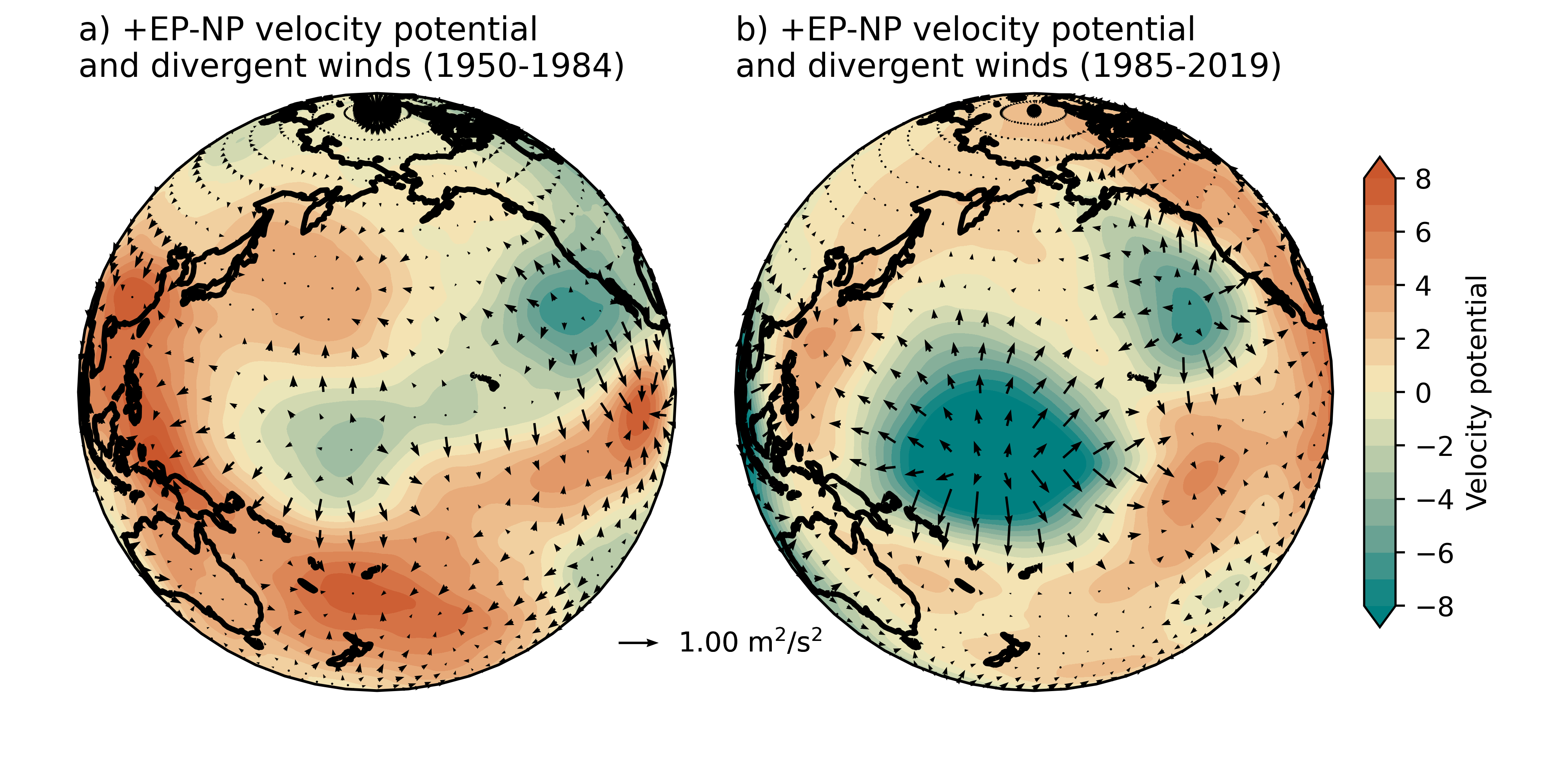
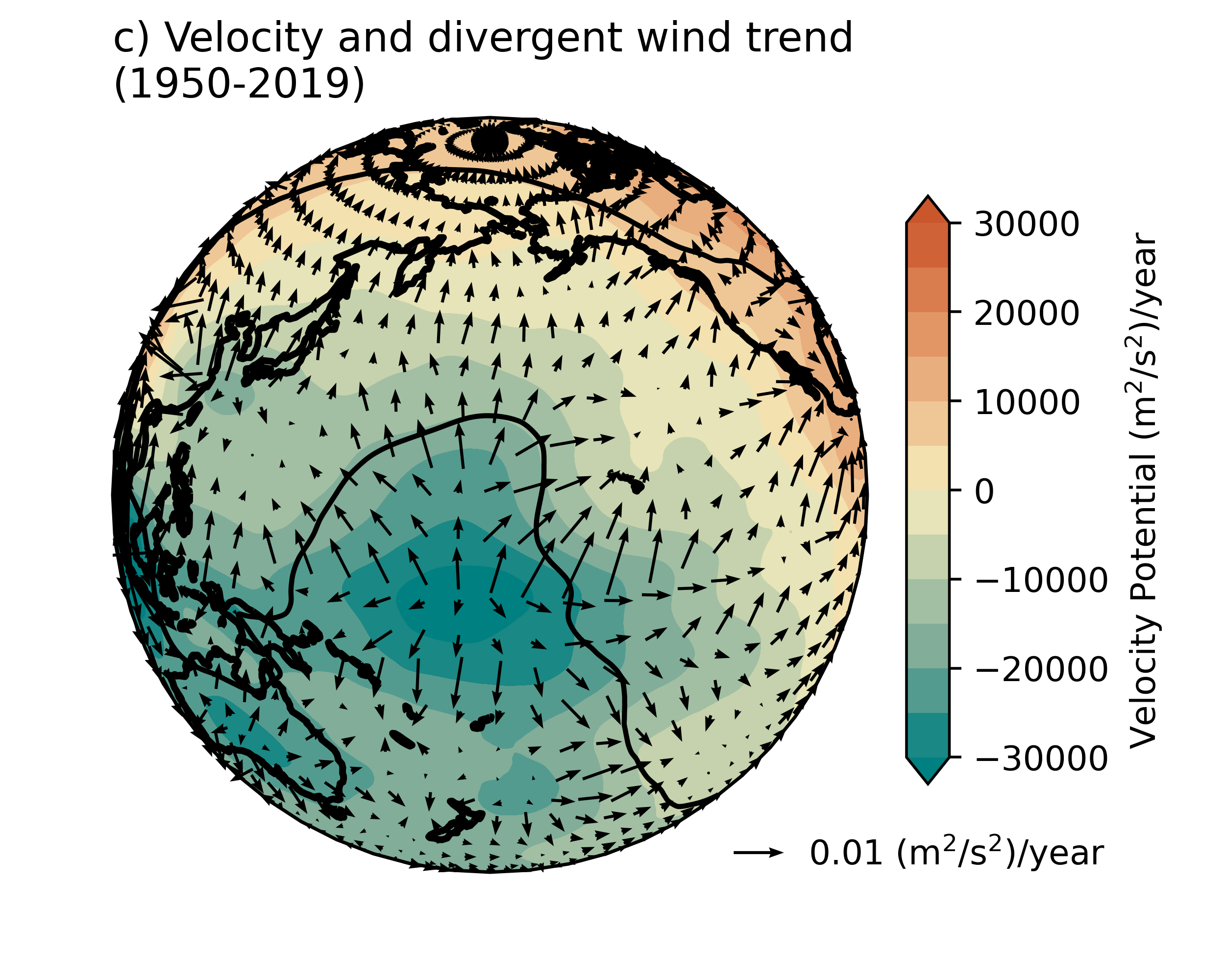
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Figures S1-S3

Graphical user interface, chart, application

Description automatically generated

**Figure S1.** A 30-year rolling correlation between the November through March frequency of high-latitude ECs tracked in ERA5 (red line), JRA55 (blue line) and NCEP R1 (orange line) with the EP-NP (a), PNA (b), NAO (c), and AO teleconnection indices (d). The horizontal dotted line and solid line indicate the significance thresholds for 28 degrees of freedom for the 90% and 95% confidence interval respectively. Gray shading highlights the insignificant areas.



**Figure S2.** Velocity potential and irrotational winds at 250 hPa for the positive EP-NP from 1950 to 1985 (a) and 1985 to 2020 (b). Figure 8c shows the linear trend of velocity potential and irrotational winds. These plots are centered on 180° W, showing the north Pacific Ocean.

Chart, line chart

Description automatically generated

**Figure S3.** November through March “dipole-index” 30-year rolling correlation with the EP-NP index. The dipole index is calculated following Wang et al. (2015) by subtracting the monthly Z300 values between the ridge center (232.5-237.5°E & 47.5-52.5°N) from the trough center (282.5-287.5°E and 57.5-62.5°N) in NCEP R1. The horizontal black and gray lines indicate the 95% and 90% confidence intervals for 28 degrees of freedom.