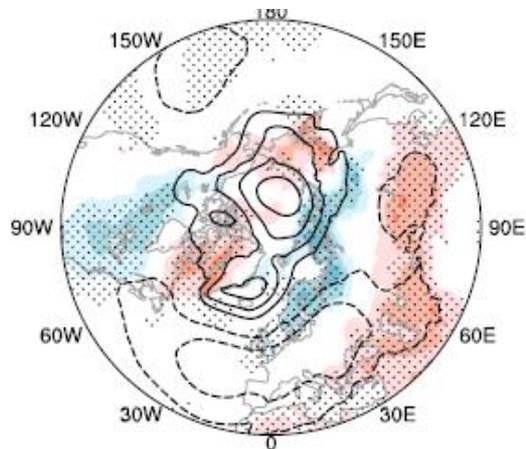


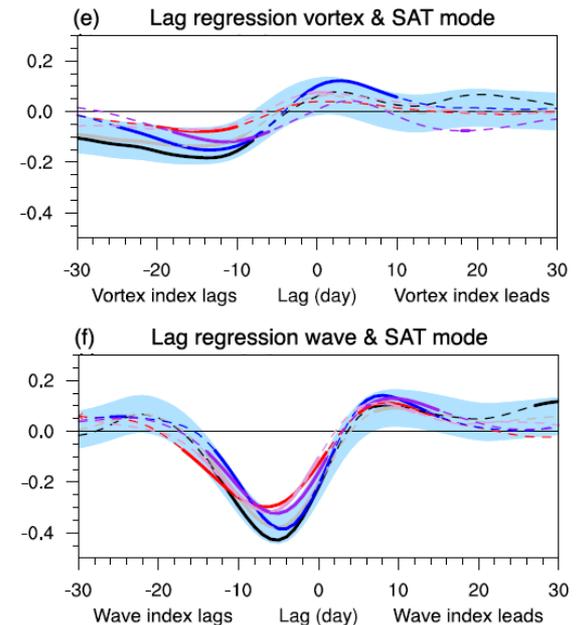
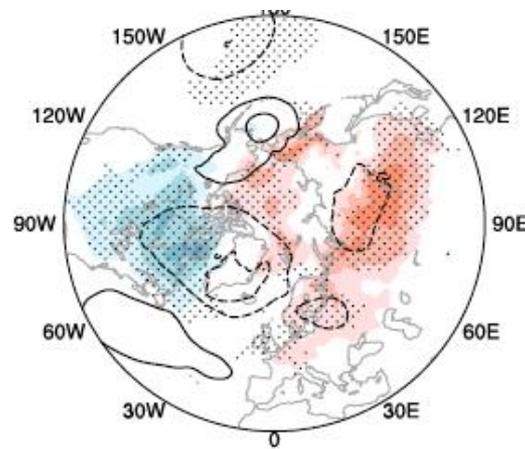
# Impacts of Stratospheric Extreme Events on North American Cold Events

- Distinct North American cooling signatures are found to follow (zonally symmetric) weak vortex and (asymmetric) strong wave events in the stratosphere
- Strong stratospheric wave activity precedes positive North Atlantic Oscillation-like North American cooling. The linkage between the stratospheric wave activity and the surface is robust in reanalysis and models.

SAT (shading)/SLP (contour) on day 5 after Weak Vortex



SAT (shading)/SLP (contour) on day 10 after Strong Wave



Ding, X., Chen, G., Sun, L., & Zhang, P. (2022). Distinct North American Cooling Signatures Following the Zonally Symmetric and Asymmetric Modes of Winter Stratospheric Variability. *Geophysical Research Letters*, 49(6).