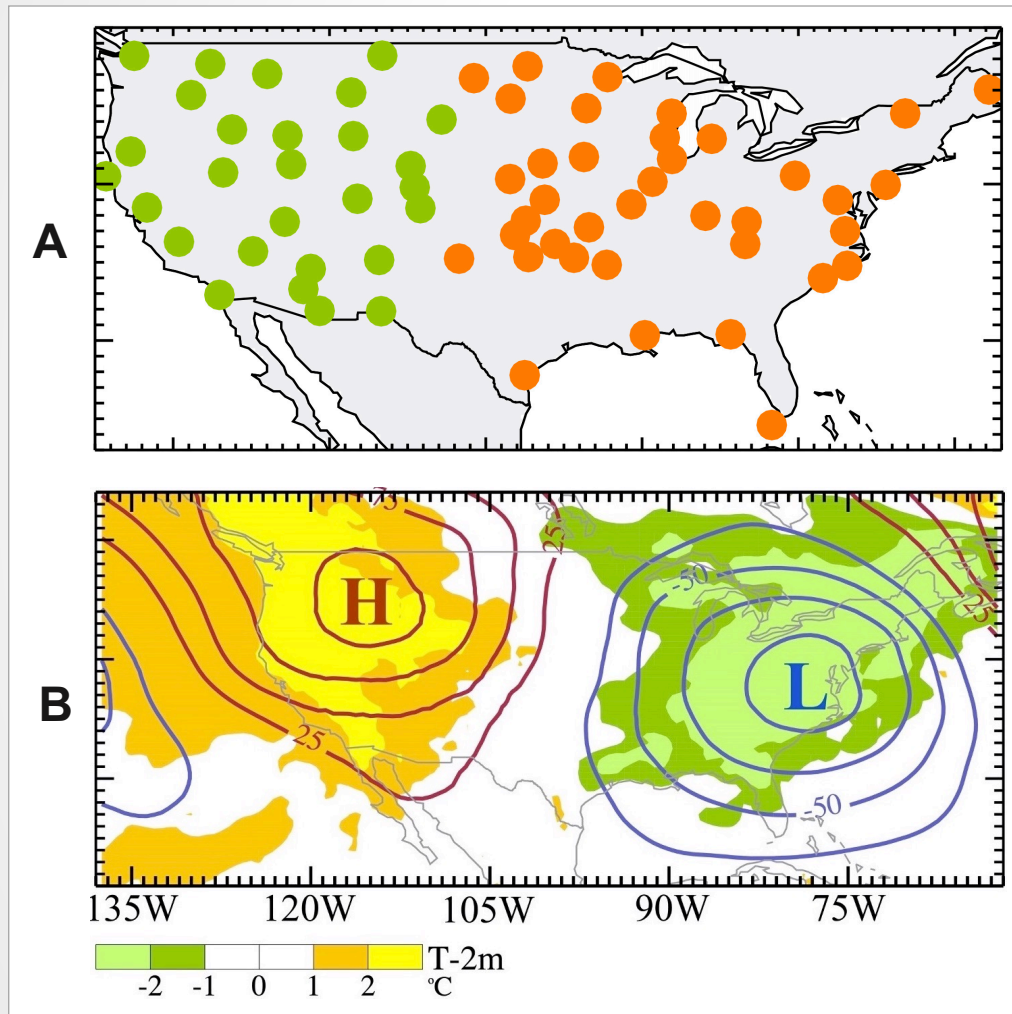


Continental Patterns of Bird Migration Linked to Climate Variability



Using radar-based observations, a new spatial concept is introduced for bird migration patterns across the contiguous U.S. This framework objectively divides the U.S. into two regions (Fig. A), each reflecting a specific year-to-year variability of bird migration arrival date in Spring. This approach, which is intrinsically different from the “flyway concept”, allowed us to find the large-scale climatic drivers of bird migration including Rossby waves (Fig. B).

A: Two regions identified based on interannual variability of peak bird migration date in spring. Circles show the location of NEXRAD stations.

B: T-2m (shading) and 300-hPa geopotential heights during April/May (contours) for 2005 minus 2010, years with notably east-west contrast in arrival dates of migratory birds.