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Planetary-scale flow organization of atmospheric wave/mean-flow interaction

K. Swanson

University of Wisconsin-Milwaukee USA (kswanson@uwm.edu)

It is well known that the dominant modes of interannual variability in the extra-tropical atmosphere arise from a wave/mean flow interaction between easily excited planetary-scale modes of variability and symbiotic changes in the structure of storm tracks of synoptic eddies. However, changes to the planetary scale flow remote from the centers of action of interannual variability may influence the structure of that variability, either by altering the character of the planetary wave guide that allows that variability to be easily excited or by altering the storm tracks themselves. Here I will use statistical techniques that isolate the patterns of the planetary scale flow that yield the largest changes in forced interannual variability, as measured by the coherence of the response of tropical-extratropical interaction. The dynamical impact of these patterns on the dynamics of interannual variability as well as on storm tracks suggests that teleconnection patterns may not be as robust as generally assumed, and that it is the changes in the wave-guide governing planetary scale modes of variability that dominates decadal-scale changes in forced interannual variability.