

Frequency of Winter Weather Regimes in the US Northeast as an Indicator for National Climate Assessment

Jian-Hua Qian, Mathew Barlow, Chris Roller

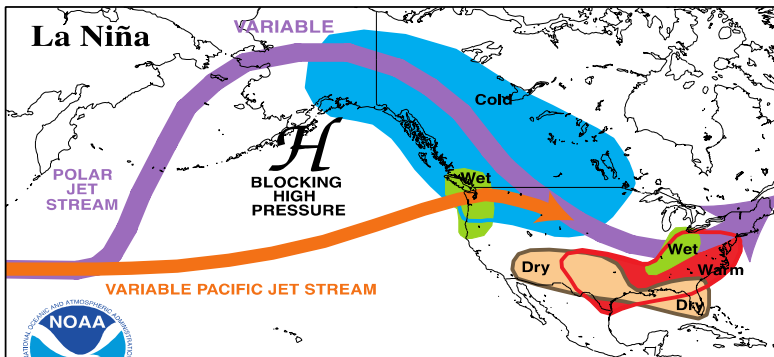
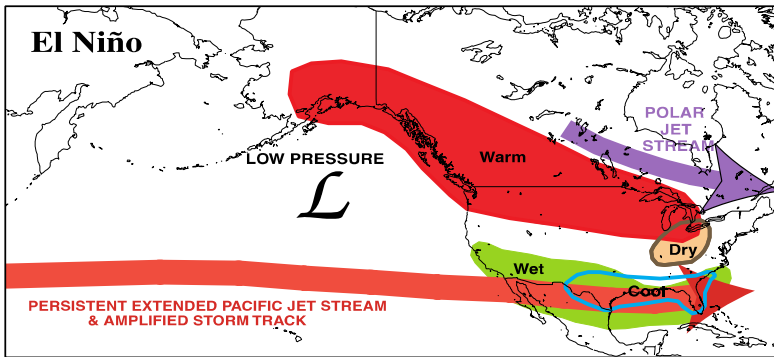
(email: JianHua_Qian@uml.edu)

*Department of Environmental, Earth & Atmospheric Sciences
University of Massachusetts Lowell, Lowell, MA 01854*

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TYPICAL JANUARY-MARCH WEATHER ANOMALIES AND ATMOSPHERIC CIRCULATION DURING MODERATE TO STRONG EL NIÑO & LA NIÑA



Climate Prediction Center/NCEP/NWS

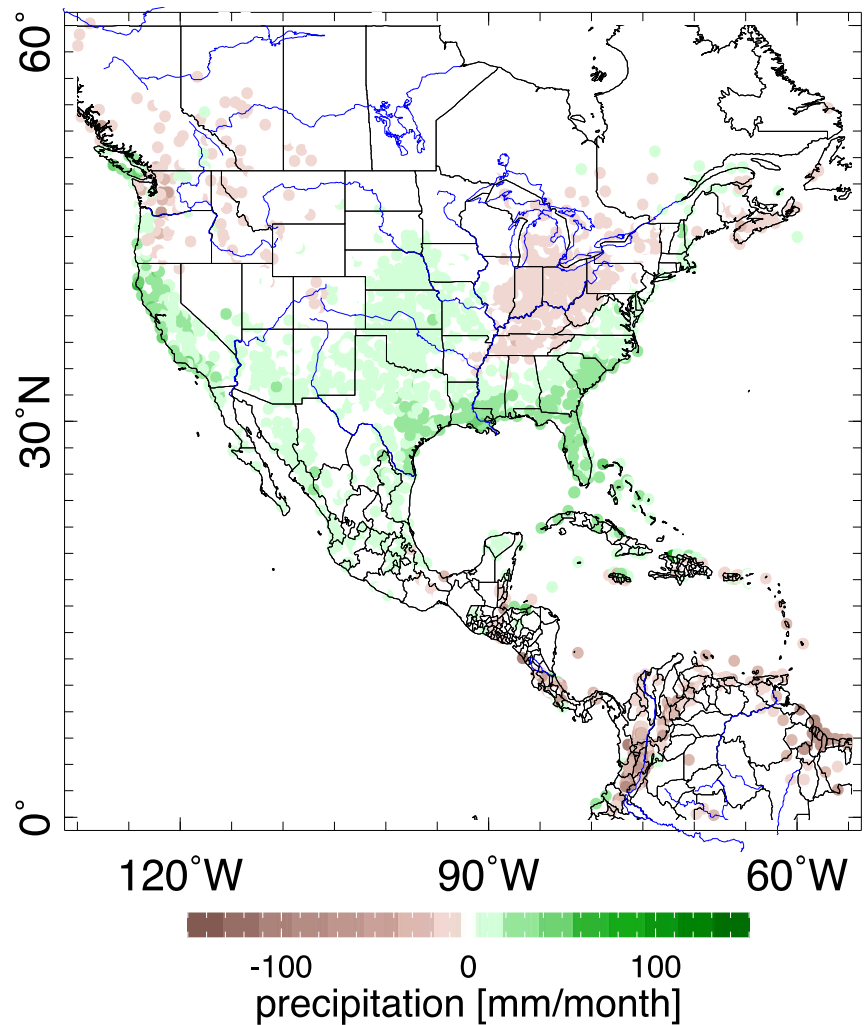


Figure 1. During winter El Niño episodes (top map) feature a strong jet stream and storm track across the southern part of the United States, and less storminess and milder-than-average conditions across the North. La Niña episodes (bottom map) feature a very wave-like jet stream flow over the United States and Canada, with colder and stormier than average conditions across the North, and warmer and less stormy conditions across the South. The right panel shows the precipitation anomalies in El Niño years at weather stations, indicating the impact on seasonal mean climate by the storminess of weather regimes associated with coastal and mid-latitude storm tracks. (The PI plotted the right panel of the precipitation anomalies. The left panels are from: http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/ensocycle/nawinter.shtml).



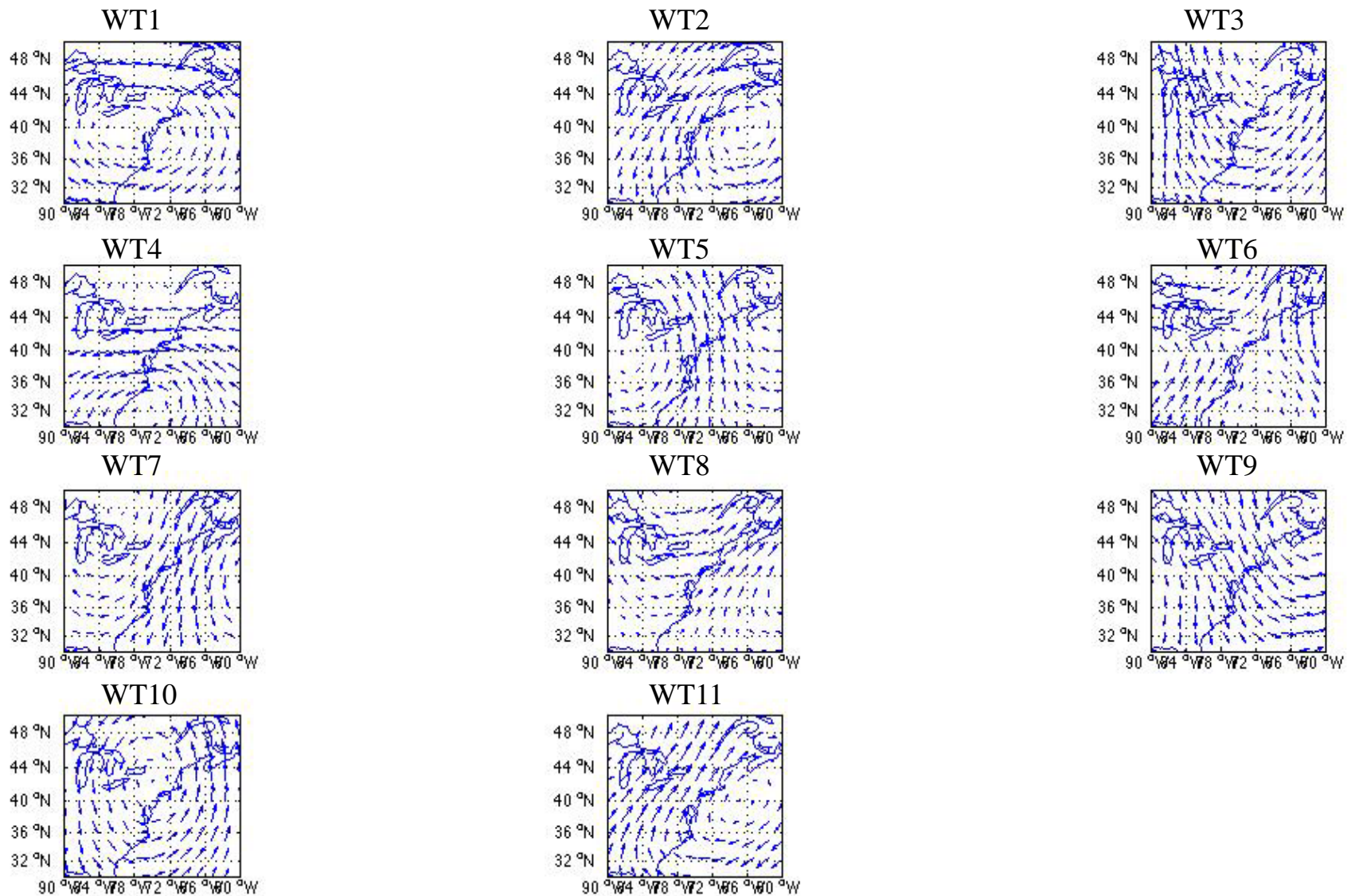


Figure 2. Preliminary results of weather typing analysis: 850 hPa winds (annual cycle is subtracted) for each of the 11 weather types (WTs) in Northeast US in boreal winter. WT2 and WT4 are types of Northeasters.

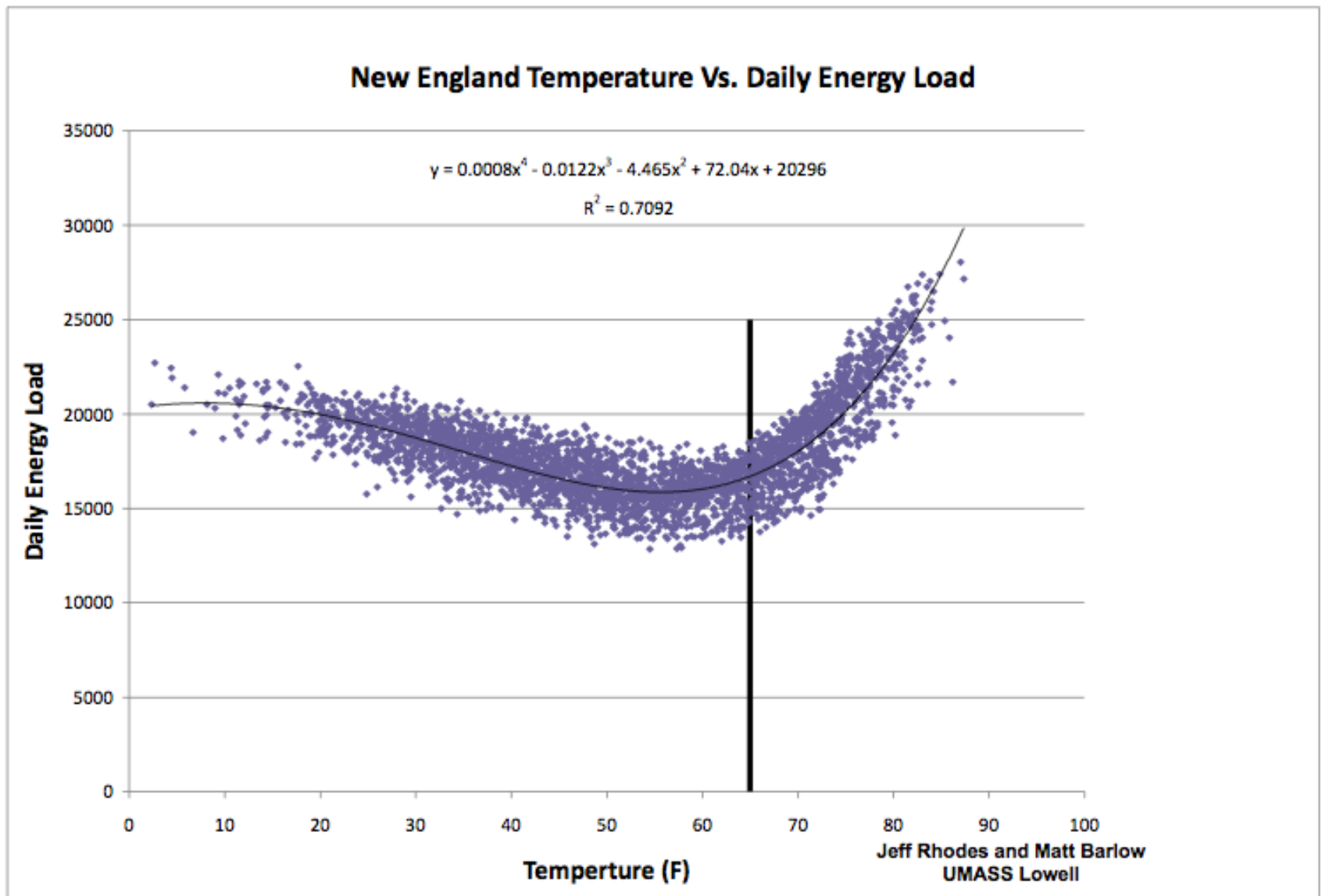


Figure 3. New England daily energy usage increases when temperature drops in the winter. We will analyze the relationship between the frequency of weather types (WTs) and the daily energy use.