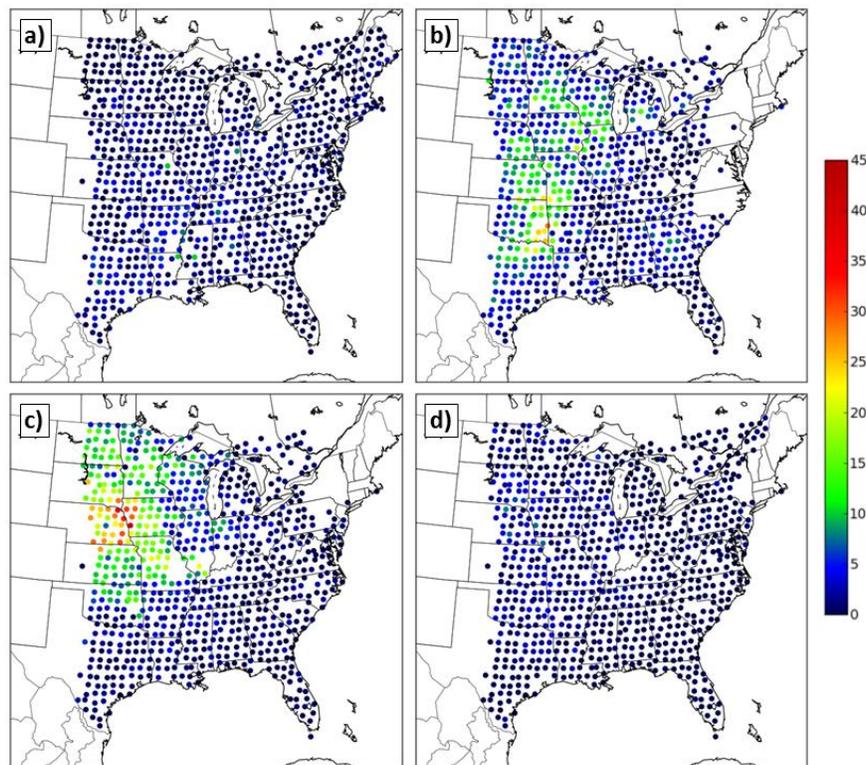


**Collection, Dissemination, and Analysis of USArray Transportable Array Surface Pressure Observations within the Atmospheric Science Community**

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The addition of atmospheric pressure sensors to the USArray Transportable Array (TA) provided several avenues to expand use of this unique dataset within the atmospheric science community. This presentation highlights some of the operational and research efforts that utilize both real-time and archived surface pressure observations as part of various projects. Real-time 1 Hz sampled measurements are collected, averaged into five minute intervals, and made available by MesoWest (<http://mesowest.utah.edu>), an ongoing project that collects surface observations from numerous meteorological networks. These measurements are also distributed to the National Weather Service and NOAA Meteorological Automated Data Ingest System (MADIS). MADIS provides these observations to the NOAA National Centers for Environmental Prediction for potential use in numerical weather models and analyses.

The 1 Hz surface pressure observations are also archived and analyzed as part of an ongoing NSF-funded study to examine pressure perturbations produced by mesoscale (minutes-hours) and synoptic scale (hours-days) phenomena. A review of recently published work is provided, detailing temporal analyses of perturbations at each TA station through February 2014 and web products used to display the data and research results (<http://meso1.chpc.utah.edu/usarray>). Current research efforts using the TA pressure data with gridded numerical model analyses to describe spatial characteristics of pressure perturbations are also presented.



USArray TA mesoscale (10 min - 4 h) pressure signatures per season with perturbation magnitudes exceeding 3.0 hPa during (a) winter (DJF), (b) spring (MAM), (c) summer (JJA), and (d) autumn (SON).

Figure Reference:

Jacques, A. A., J. D. Horel, E. T. Crosman, and F. L. Vernon, 2015: Central and Eastern United States Surface Pressure Variations Derived from the USArray Network. *Monthly Weather Review*, **143**, 1472-1493, doi:10.1175/MWR-D-14-00274.1