Utah Winter Fine Particulate Study: A Statistical Overview

Abstract:

The Utah Winter Fine Particulate Study (UWFPS) was a field campaign that took place across Northern Utah from December 2016 to February 2017. The goal of the study was to provide a suite of measurements to gain further understanding of the key meteorological and chemical relationships that occur during severe winter-time pollution events.

The focus of this research was to create a comprehensive dataset and effectively determine key chemical relationships that take place during pollution episodes across Northern Utah. Through the use of correlation matrices, a large dataset can be reduced into a single visual to identify key linear correlations for each of the six UWFPS ground sites. Pearson correlation coefficients (R) were annotated inside each circle. Warm colors and positively skewed circles indicate a positive linear correlation. Cool colors and negatively skewed circles indicate a negative linear correlation. Insignificant correlations were crossed out ($p < 0.01$).

University of Utah Site – Hourly Correlogram (R)