Ground-level Particulate Matter Mass and Component Observation Imputation and Correction using Remote-Sensing

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Abstract

A country-wide Canadian study on the interactions between particulate matter and human health effects is currently ongoing under the guidance and funding of Health Canada and Environment and Climate Change Canada. As part of this study, we are imputing and error-correcting a large-scale database of hourly, daily, and monthly particulate matter concentration measurements. In this talk we will discuss the use of remote sensing concentration observations (satellite) as baseline and comparison observations for the imputation and correction of ground-level particulate matter mass and component observations. The differing time and geographic scales for observation make this an interesting time series and spectrum estimation problem, with a number of powerful applications.

Keywords: TIES2018, time series, particulate matter, remote sensing, imputation, interpolation