



Global Fine Particulate Matter Concentrations and Trends Inferred from Satellite Observations, Modeling, and Ground-Based Measurements

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Outdoor fine particulate matter (PM_{2.5}) is a leading environmentally-related cause of premature mortality worldwide. However, ground-level PM_{2.5} monitors remain sparse in many regions of the world. Satellite remote sensing from MODIS, MISR, and SeaWiFS yields a powerful global data source to address this issue. Global modeling (GEOS-Chem) plays a critical role in relating these observations to ground-level concentrations. The resultant satellite-based estimates of PM_{2.5} indicate dramatic variation around the world, with implications for global public health. A new ground-based aerosol network (SPARTAN) offers valuable measurements to understand the relationship between satellite observations of aerosol optical depth and ground-level PM_{2.5} concentrations. This talk will highlight recent advances in combining satellite remote sensing, global modeling, and ground-based measurements to improve understanding of global population exposure to outdoor fine particulate matter.