

# IDEA-NYS air quality forecast and analysis system: Real-time aerosol detection, monitoring, and trajectories in NYS

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## Abstract

SUNYA/ASRC is developing a real-time aerosol forecast and analysis system for New York State (NYS), resulting from the adoption of IDEA (Infusing satellite Data into Environmental Applications) air quality forecasting system from NOAA/NESDIS and the utilization of aerosol measurements from satellites sensors and NYS Mesonet network. The overarching goal for this SUNYA-NESDIS-DEC collaborative project is to implement an aerosol forecasting and analysis system for NYS to be used for real-time monitoring and retrospective analysis. The overall research design is to (1) adopt IDEA package from NOAA/NESDIS for NYS, (2) enhance IDEA-NYS with high temporal-spatial resolution atmospheric and aerosols observations from NYS Mesonet network, (3) tailor the real-time data analysis and visualization tools to meet the needs of NYS operational users, and (4) conduct retrospective event analyses of major events in NYS with 3-dimensional view. The proposed IDEA-NYS system, once developed, could serve as a real-time high-resolution forecast tool for PM<sub>2.5</sub> forecasting as well as a retrospective analysis tool for PM<sub>2.5</sub> analysis and compliance assessment.