

## Monitoring, data-assimilated forecasting, and reanalysis for airborne aerosols using multispectral imagers

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Airborne aerosols are tiny particles that are globally distributed in the atmosphere from the troposphere to the stratosphere and that affect various aspects of human society and health and the Earth system including ocean biogeochemistry and climate. Our understanding of the aerosol lifecycle and aerosol impacts has been advanced by the following activities: (1) aerosol monitoring: observations of distributions of aerosol components and their radiative impacts, (2) assimilation/forecasting: aerosol (PM2.5) numerical prediction and early warning system to reduce effects on human society and health, and (3) climate data: long-term records including aerosol reanalysis product contributing climate and epidemiology studies. Multispectral imagers (from near UV to near infrared) onboard polar-orbiting and geostationary satellites have been providing essential data to those activities. In this presentation, we will make a brief review of those activities to show how multispectral imagers play the important role in aerosol studies and to provide an opportunity to consider their future plan.

Keywords: aerosol, monitoring, data assimilation, forecasting, reanalysis, imager