

Remote sensing of aerosol and radiation from geostationary satellites

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Real time monitoring of aerosol and surface insolation from the Geostationary Operational Environmental Satellite (GOES) data have been routinely conducted. With the launch of the Geostationary Operational Environmental Satellite, GOES-R, in 2012, the US National Oceanic and Atmospheric Administration (NOAA) will begin a new era of geostationary remote sensing. The instruments onboard GOES-R will offer capabilities for aerosol remote sensing similar to those currently provided by the Moderate Resolution Imaging Spectroradiometer (MODIS) flown on the NASA Earth Observing System (EOS) satellites. The Advanced Baseline Imager (ABI) on GOES-R will expand NOAA's frequency and coverage of multispectral remote sensing that can support a wide range of weather and environmental applications including the determination of aerosol properties and more accurate determination of surface insolation. This paper describes some of the current and planned work at the NOAA Center for Satellite Applications and Research (STAR) that will use the new capabilities offered by these sensors for aerosol remote sensing and surface insolation, as well as work that addresses the transition from past aerosol retrievals to those obtained from the new instruments. Among the latter, the information content provided by multispectral radiometers is evaluated by analyzing MODIS-derived and "operational" single-channel aerosol retrievals.