

Validation of GOES-R volcanic ash products Near real time operational decision support/hazard analysis

NOAA Satellite Science Week
Kansas City, MO
April 30 – May 4, 2012

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The first National Oceanic and Atmospheric Administration (NOAA) Geostationary satellite (GOES-R) series will include a *baseline product* entitled: volcanic ash detection and height. This will provide particle size, ash cloud height, optical depth, pixel mass and total ash mass. We produce volcanic ash dispersion and transport model forecasts for use by the National Weather Service (NWS) in Alaska, i.e. the Volcanic Ash Advisory Center (VAAC) and Alaska Aviation Weather Unit. Working with the Geographical Information Network of Alaska (GINA) and Arctic Region Supercomputing Center (ARSC), we will access the GOES-R algorithms as well as development of the WRF-Chem environment to forecast ash clouds. The goal of this project is to confirm and validate the GOES-R volcanic ash algorithm on a wide range of styles and magnitudes of eruptions in Alaska and farther afield. We assess the model products on different volcanic events and as such provide a tool that is applicable globally. In addition, we assess how the GOES-R ash products can be used for volcanic ash model forecasts using the Puff and WRF-Chem modeling environments by assessing model performance.