

The RAL Seminar Series



NCAR

Operational High-Resolution Aerosol Optical Depth Retrievals Over Water using AVHRR, MODIS AND GOES Visible Channels

by

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Foothills Lab, Building 3, Room 2072, 3:30 p.m.

The Naval Postgraduate School (NPS) and Naval Research Laboratory (NRL) in Monterey, CA have developed an aerosol optical depth retrieval (NPS-AOD) algorithm using solar radiances from NOAA-AVHRR and Terra/Aqua-MODIS sensors. In addition, aerosol information generated from these polar orbiting sensors can be combined with GOES imagery to provide continuous spatial and temporal coverage of AOD within the US and Caribbean coastal regions. Since 2000, the NPS-AOD has been implemented at NRL on a global scale, providing daily AOD images in support of a variety of applications, such as dust prediction model validations, US military operations, and several aerosol-related field experiments. The AOD images are also part of a suite of value-added products within an NRL web site that serves to demonstrate the capabilities of future sensors onboard satellites during the NPP and NPOESS era.

This talk will briefly describe the NPS-AOD algorithm along with validation results that includes comparisons between NPS-AOD, NASA-MODIS AOD, and AERONET measurements. Discussions of the applications of AOD products include: efforts to validate the Navy Aerosol Analysis and Prediction System Global Aerosol Model (NAAPS), adapting the NPS-AOD to a heavy dust environment such as found in the Middle East, and attempts to provide useful operational parameters to the military such as surface visibility measurements and aircraft closing distances. Finally, using AOD coverage over the Atlantic Basin, a discussion of ongoing efforts to quantify the Saharan Air Layer will be presented.