

Validation and Long-term trends of Aerosol Optical Thickness from SeaWiFS over Land and Ocean

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With the launch of EOS-era sensors, high quality comprehensive aerosol climatology is becoming feasible over land and ocean. In this talk, we will demonstrate how the newly available SeaWiFS v003 aerosol climatology can be useful in reducing the uncertainty of estimated climate forcing due to aerosols. We will start with investigating the global distribution of aerosol loading and their variabilities over both land and ocean on short- and long-term temporal scales observed over the last decade. The recent progress on improving accuracy of these SeaWiFS Deep Blue aerosol products in particular over land will be discussed.

We will show the validation results of SeaWiFS retrieved aerosol optical thickness (AOT) using data from AERONET sunphotometers over land and ocean. The trends calculated based on more than 13 years of data (1997-2010) in global and regional distributions of tropospheric aerosols due to natural and anthropogenic sources (such as changes in the frequency of dust storms and/or emissions of air pollutants from developing countries) will also be discussed.