CONTINENTAL SCALE AEROSOL OPTICAL PROPERTIES OVER EAST ASIA AS MEASURED BY AERONET AND COMPARISON TO SATELLITE AND MODELED RESULTS

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The AERONET program has operated in E. Asia since 1995 providing time continuous and time averaged ground-based column-integrated aerosol optical properties in a variety of aerosol regimes (Holben et al., 1998, Holben et al., 2001, Dubovik et al., 2002, Eck et al,. 2005 and Smirnov et al., 2002). In the last four years the distribution has greatly increased in Siberia, China, SE Asia and India in particular. Commensurate with that, significant improvement in data processing algorithms (Version 2.0) and access to ancillary data products through the WWW have become available to the scientific community. At this writing the following distribution represents E and S. Asia: 5 sites operate in Siberia (2 years), 1 in Mongolia (9 years), 3 in Korea (3 to 6 years), 3 in Japan (2 to 7 years), China 11 (6 to 0 years), Taiwan 4 (7 to 2 yrs), Viet Nam 2 (4 years), Thailand 2 to 5 (4 years), and Singapore 1 (4 months), India 1 to 3 (7 to 1 years), Pakistan 2 (1 year), and UAE 3 (3 years).

An analysis of the aerosol optical depth at 500 nm using annual average quality assured AERONET data (pre 2006) was used to estimate the mean annual aerosol loading by continent, sub continent and ocean. The individual site data were assumed representative of regional aerosol loading and aggregated to the sub-continental, continental and oceanic areas and presented in Figure 1. This analysis will be updated with more recent data with particular emphasis on seasonal results for Asia and the addition of single scattering albedo retrievals. The ground based results will be compared to MODIS collection 5 results and model estimates for E. Asia using the AERONET Synergy Tool.

Keywords: aerosols, Remote Sensing, AERONET,

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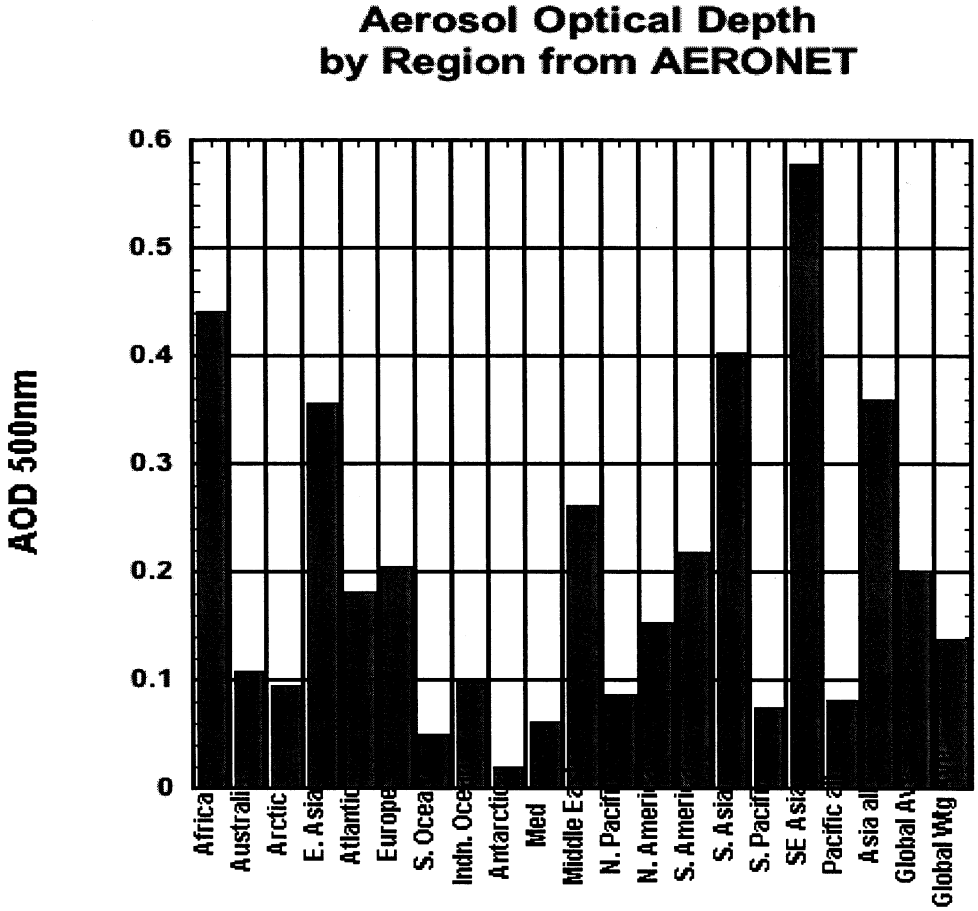

Figure1 illustrates the large variability in the continental scale aerosol loading. Note the high values of Africa and Asia regions.