Abstract submitted to:

The 9th International AeroCom 2010 workshop, Oxford, UK, September 27-30, 2010.

Presentation Preference: Oral

Address for correspondence:

Dr. Charles ICHOKU
Climate and Radiation Branch, Code 613.2
NASA Goddard Space Flight Center
Greenbelt, MD 20771, U.S.A.

Phone : (1) 301-614-6212
Fax : (1) 301-614-6307 or (1) 301-614-6420
E-mail : Charles.Ichoku@nasa.gov

Abstract Title:

The Multi-sensor Aerosol Products Sampling System (MAPSS) for integrated analysis of satellite retrieval uncertainties

Charles Ichoku, Maksym Petrenko, Gregory Leptoukh
NASA Goddard Space Flight Center, code 613.2, Greenbelt, MD 20771, USA.

ABSTRACT

Among the known atmospheric constituents, aerosols represent the greatest uncertainty in climate research. Although satellite-based aerosol retrieval has practically become routine, especially during the last decade, there is often disagreement between similar aerosol parameters retrieved from different sensors, leaving users confused as to which sensors to trust for answering important science questions about the distribution, properties, and impacts of aerosols. As long as there is no consensus and the inconsistencies are not well characterized and understood, there will be no way of developing reliable climate data records from satellite aerosol measurements. Fortunately, the most globally representative well-calibrated ground-based aerosol measurements corresponding to the satellite-retrieved products are available from the Aerosol Robotic Network (AERONET). To adequately utilize the advantages offered by this vital resource, an online Multi-sensor Aerosol Products Sampling System (MAPSS) was recently developed. The aim of MAPSS is to facilitate detailed comparative analysis of satellite aerosol measurements from different sensors (Terra-MODIS, Aqua-MODIS, Terra-MISR, Aura-OMI, Parasol-POLDER, and Calipso-CALIOP) based on the collocation of these data products over AERONET stations. In this presentation, we will describe the strategy of the MAPSS system, its potential advantages for the aerosol community, and the preliminary results of an integrated comparative uncertainly analysis of aerosol products from multiple satellite sensors.