Aerosol Properties Derived From the PREDE POM-01 Mark II Sun Photometer

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AEROSOL PROPERTIES RETRIEVED AT GODDARD SPACE FLIGHT CENTER

Fig 11.: AOT retrieved on September 7, 2001

Fig 12.: Data collected with both PREDE during ACE-ASIA

AC-ASIA EXPERIMENT

The cross-calibration performed on July 6 was used to process the data collected at Goddard Space Flight Center during the ACE-ASIA period. The cross-calibration factors obtained from the PREDE POM-01 Mark II at Goddard Space Flight Center will be applied to the data collected onboard the research vessel.

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AC-ASIA was the fourth experiment organized by the International Global Atmospheric Chemistry (ICPAC) Program. The experiment took place off the coasts of China, Japan and Korea during the spring of 2001 to measure aerosol optical properties. The SIMBIOS Project dedicated significant effort to this project. The SIMBIOS Principal Investigators (PIs) included Robert Frouin from the University of California, Los Angeles, Gerhard Meister from Brookhaven National Laboratory and Giulietta Fargion from the University of Bologna. The SIMBIOS Project provided one PREDE POM-01 Mark II and a second PREDE was loaned from the Japanese government for the SIMBIOS Project. The SIMBIOS Project also provided real-time data files daily to the PI's. The PREDE POM-01 Mark II was used onboard two research vessels during the whole campaign. The size distribution of the particles sampled by the PREDE POM-01 Mark II was measured using the Mie theory for several scattering angles. The Mie theory is the basis for the retrieval of the aerosol optical thickness. The Mie theory is based on the known size distribution of the aerosol. The aerosol optical thickness is then retrieved from the sky radiances measured by the PREDE POM-01 Mark II.

The AOT and Angstrom exponent retrieved by the two handheld sun photometers were compared with those obtained from the CIMEL solar photometer. The AOT and Angstrom exponent retrieved by the two handheld sun photometers were compared with those obtained from the CIMEL solar photometer. The AOT and Angstrom exponent retrieved by the two handheld sun photometers were compared with those obtained from the CIMEL solar photometer. The AOT and Angstrom exponent retrieved by the two handheld sun photometers were compared with those obtained from the CIMEL solar photometer.

CONCLUSIONS AND Outlook

Two new radiometers specifically designed to collect atmospheric measurements onboard research vessels were used during the ACE-ASIA campaign. The new PREDE POM-01 Mark II is a valuable addition to the worldwide network of sun photometers monitoring aerosol optical properties.

The development of the PREDE POM-01 Mark II was aimed at providing a complementary radiometer to the CIMEL solar photometer. The new PREDE POM-01 Mark II is a valuable addition to the worldwide network of sun photometers monitoring aerosol optical properties.

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