

Pronounced Changes in Water Vapor, Ozone and Metrological Parameters Associated with Dust Storms Using MULTI SENSOR Data

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During the pre-monsoon season, the Indo-Gangetic plains is affected by the dust storms that affect the daily life of million people living in the Indo-Gangetic plains. These dust storms significantly affect the air quality, hydrological cycle and climatic conditions. The dust storms are originated from the Arabia peninsula and neighboring countries in the western parts of India. The multi sensor (MODIS, AIRS, MISR, AMSR, SSM/I, CALIPSO, TOMOS, OMI AURA) data for the period 2000 – 2006 show pronounced changes in the surface, aerosol, ozone, cloud, snow cover and meteorological parameters. The detailed analysis of these parameters have revealed that soon after the dust storm water vapor and ozone column enhanced and meteorological parameters (air temperature, relative humidity) change significantly at the pressure level 500 – 700 HPa. The changes in the surface, atmosphere and meteorological parameters will be discussed in the melting of snow cover and its consequence in hydrological cycle and climatic conditions. The radiative forcing calculations have shown changes in the surface and top of atmosphere forcing associated with the dust storms.

INTERNATIONAL
ATOVS
WORKING GROUP

*Proceedings of the
Sixteenth International
TOVS Study Conference*

Angra dos Reis, Brazil

7-13 May 2008

Sharing ideas, plans and
techniques to study
the earth's weather and climate
using space-based observations

