

Real time assessment of haze and PM10 aided by MODIS aerosol optical thickness over Klang Valley, Malaysia

ABSTRACT

Scarcely distribution, installation and maintenance costs for ground monitoring stations are issues in air pollution monitoring. Moderate resolution imaging Spectroradiometer (MODIS) on board of Terra and Aqua satellites is able to retrieve aerosol optical thickness (AOT) in troposphere and can be utilized in particulate matter pollution monitoring. In this study, daily AOT data retrieved from MODIS in 2004 to 2006, using Non-linear correlation coefficient (NLCC) were compared with the amount of particulate matter PM10 measured at eight ground air quality monitoring stations in Klang Valley, Malaysia. Effects of haze on air quality that indicated MODIS AOT before, during and after the severe haze were also studied. Results showed that the air quality conditions in dry season are unhealthy and correlation coefficients between MODIS AOT and PM concentration are higher than those in rainy season. The corresponding AOT change during the rainy 10 season was between lower than 0.1 and 2.5. It shows that for the rainy season it is less than 0.1. This study reveals AOT data from MODIS can be utilized to study the air quality, especially PM in the places where there 10 are not any ground measurements.

Keyword: MODIS; Air quality; Season; Troposphere; Correlation coefficient