PM10 monitoring using MODIS AOT and GIS, Kuala Lumpur, Malaysia.

ABSTRACT

Remote sensing has been increasingly used in retrieval Aerosol optical thickness (AOT) to particulate matter pollution monitoring. In this study, Moderate resolution image Spectroradiometer (MODIS) data were utilized in particulate matter pollution monitoring. Daily aerosol optical thickness (AOT) data retrieved from MODIS using Non-Linear Correlation Coefficient (NLCC) with polynomial equation Were compared with the amount of particulate matter PMIO measured at Three ground Air Quality Monitoring Stations (AQMS)-Victoria Kl, Cheras Kl and Gombak- in Kuala lumpur and surrounding area. The PMIO data were imported in geographical information system (GIS) environment to derive the PMIO maps in Kuala Lumpur stations. Results showed that the amounts of PMIO in dry season are higher than those in rainy season in stations. The NLCC between MODIS AOT and PMIO concentration was obtained higher in Victoria Kl compared to Gombak and Cheras Kl. GIS maps were found to show better distribution of PMIO compared to the ground station data. This study reveals AOT data from MODIS and GIS map can be utilized to study the air quality, especially distribution of PMIO in the places where there are ground measurements.

Keyword: Aerosol optical thickness; MODIS; Particulate matter; GIS.