PERSIDANGAN GEOSAINS NASIONAL 2006
NATIONAL GEOSCIENCE CONFERENCE 2006
12-13 JUNE 2006, ARMADA HOTEL, PETALING JAYA

ACCESSIBILITY OF AIR QUALITY OVER USM CAMPUS USING REMOTE SENSING AND GIS TECHNIQUE

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ABSTRACT: This study was conducted to observe the sky radiation for air quality retrieval from spectroradiometer measurements over USM campus. The objective of this study is to evaluate the performance of a spectroradiometer for providing useful remotely sensed data for air pollution studies. Aerosol optical thickness (AOT) values were derived from the atmospheric transmittance measurements. The concentrations of particulate matters of less than 10 micron (PM10) were collected simultaneously during the acquisition of the atmospheric transmittance measurements using a handheld DustTrak Meter. The relationship between PM10 and AOT values over Penang Island also was investigated in this study. A well known Beer-Lambert-Bouguer law was applied to obtain aerosol optical thickness (AOT) from the atmospheric transmittance. Finally, the PM10 and AOT map was generated using Kriging interpolation technique over USM campus. This study indicates that the spectroradiometer measurements provide useful remotely sensed data for air quality studies.