



Satellite-based retrieval of particulate matter concentrations over the United Arab Emirates (UAE)

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In this study, an empirical algorithm was established to retrieve particulate matter (PM) concentrations ($PM_{2.5}$ and PM_{10}) using satellite-derived aerosol optical depth (AOD) over the United Arab Emirates (UAE). Validation of the proposed algorithm using ground truth data demonstrates its good accuracy. Time series of *in situ* measured PM concentrations between 2014 and 2015 showed high values in summer and low values in winter. Estimated and *in situ* measured PM concentrations were higher in 2015 than 2014. Remote sensing is an essential tool to reveal and back track the seasonality and inter-annual variations of PM concentrations and provide valuable information on the protection of human health and the response of air quality to anthropogenic activities and climate change.