

Development of PM_{2.5} Empirical Model for Dar Es Salaam City using Low-Cost Sensors Data Observation

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Abstract

The particulate matter pollution is considered one of the deadliest types of air pollution due to its impact on the human health and environment. Apart from its health impacts, the monitoring of particulate matter (PM_{2.5}) in Low – and Middle Income countries is still limited due to the cost of conventional PM_{2.5} monitoring instruments, as well as its power requirements. Currently, LMIC are deploying low-cost sensors as alternative in order to collect real-time particle data for understanding air quality situations in cities. However, the coverage of these low cost sensors is still limited and the quality of data recorded by the sensors is still questionable for their applications into policy formulations. To overcome these challenges, the study present an empirical model developed to predict the air pollutant concentration using low cost dataset observed in Dar es Salaam city. The correlation study reveals the strong correlation of predicted pollutants concentrations with the observed data, which found useful for the proposed prediction model in gap filling of data due to power and internet outage problem common in LMIC cities.

Early Career Scientist

NO, I am not an early career scientist.

IGAC Activities

CCMi: Chemistry Climate Model Initiative

IGAC Regional Working Groups

ANGA: African Group on Atmospheric Sciences