

Detecting and Monitoring Air Pollution in Malaysia Using AOD from the Himawari Satellite: An Analysis of the October 2023 Haze Event

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Abstract

Air pollution is a significant environmental issue in Malaysia, necessitating continuous monitoring of its sources and levels to reduce its negative effects on public health and the environment. This study aims to analyze the aerosol optical depth (AOD) data obtained from the Himawari satellite to identify the presence of haze in Malaysia in the first week of October 2023. The Himawari satellite is a geostationary satellite capable of providing data at a high temporal resolution. In most places in Malaysia, monthly monitoring shows an increase in AOD in October. Further analysis of Aerosol Optical Depth (AOD) data collected on a daily basis from the Himawari satellite in early October 2023 revealed that several locations in the south of Peninsular Malaysia showed AOD levels exceeding 2. This observation shows a significant increase in air pollution, which can have a negative impact on the health of Malaysians. The Himawari satellite also identified hotspots in Kalimantan and Sumatra at the end of September 2023, indicating forest or agricultural burning activity. Future research activities will involve studying the correlation of Aerosol Optical Depth (AOD) data obtained from the Himawari satellite with ground-based data once more recent data are available. The findings of this study have the potential to improve the quality of health and economic strategies and research partnerships aimed at reducing the incidence of haze in Malaysia and Southeast Asia.

Early Career Scientist

YES, I am an early career scientist.

IGAC Activities

BBURNED: Biomass Burning Uncertainty: ReactionNs, Emissions and Dynamics, MAP-AQ: Monitoring, Analysis and Prediction of Air Quality

IGAC Regional Working Groups

MANGO: Monsoon Asia and Oceania Networking Group