Abstract

Accurate representation of dispersion of air pollutants is essential for environmental management and planning purposes. In the present study, an attempt has been made to investigate the improvement of pollution dispersion using AERMOD model which includes atmospheric boundary layer processes explicitly. Ranchi region, a fast growing urban city with industries and vehicular pollution in the Jharkhand state of India is chosen. Surface micro-meteorological tower data and upper air radiosonde observations are utilized in the study. Surface boundary layer parameters such as friction velocity and sensible heat flux used as input to AERMOD model are obtained from flux-profile relationships and validated with turbulence measurements. The pollutant concentrations includes industrial as well as vehicular sources predicted by AERMOD are validated with the ambient air quality data of Central Pollution Control Board at Ranchi. Results reveal that AERMOD performed well in representing air pollution dispersion over Ranchi region.
Assessment of Dispersion of Oxide of Nitrogen using AERMOD Model over a Tropical Industrial Region

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Index Terms

Computer Science
Applied Sciences
Keywords
Air Pollution   Dispersion Model and Atmospheric boundary layer