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Performance evaluation of AERMOD for Indian geo-mining conditions

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Dispersion models are useful tool for air quality management in mining industry especially for surface mines. However, application of these models without proper evaluation may lead to wrong decisions which can further lead to closer of mine due to inappropriate mitigative measures. Indian geo-mining conditions are different from other countries. Thus systematic model evaluation studies are essential required to model application in mining industry of India. AERMOD is a model, widely used in the world for dispersion modelling from mining activities. Statistical parameters were considered for the performance evaluation of the AERMOD. An opencast mine was considered as a study area due to multiple dust sources availability. Results have suggested that the model performs well for the Indian geo-mining conditions for daily and monthly averaging time period. Results have also suggested that the model does not predict dust dispersion accurately for smaller values.