



Long-Term Dispersion Pattern of SO₂ in the Neighbourhood of Thermal Power Stations at Neyveli, India

B. Kumaravel*, S. Palanivelraja

Department of Civil Engineering, Faculty of Engineering and Technology, Annamalai University, Annamalai Nagar-608002, India

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Abstract: The air quality models play a major role for prediction in the field of air quality management by establishing the relationship between the source emission and receptor point concentration. The estimation of long term average concentrations of pollutants is essential for environment management and planning. To estimate probable air quality, the meteorological data by CARD NLC were used for concentration prediction with the help of newly developed long – term Gaussian plume model (MPC_LP). The present study deals with long –term dispersion pattern of pollutants in the neighbourhood of Thermal power plants at Neyveli. This study also includes computations of seasonal averages of SO₂ concentrations at downwind locations under various computations of wind speed and atmospheric stability classes. The spatial pollution rose pattern of SO₂ concentration for different seasons were developed over an area of size 37 km X 31 km with an interval of 1 km X 1 km in and around the Thermal Power Plants. The SO₂ isopleths indicated the probable zones of maximum concentration of sulphur dioxide in a particular season over town ship, industrial and agricultural rural areas.

Key words: *Sulphur dioxide, Long Term average concentration, pollution rose, dispersion pattern, isopleths*

*Corresponding: E-Mail: marvel_kb@yahoo.co.in;