

Air Dispersion Modeling for Prediction of Accidental Emission in the Atmosphere along Northern Coast of Egypt

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Abstract : Modeling of air pollutants from the accidental release is performed for quantifying the impact of industrial facilities into the ambient air. The mathematical methods are requiring for the prediction of the accidental scenario in probability of failure-safe mode and analysis consequences to quantify the environmental damage upon human health. The initial statement of mitigation plan is supporting implementation during production and maintenance periods. In a number of mathematical methods, the flow rate at which gaseous and liquid pollutants might be accidentally released is determined from various types in term of point, line and area sources. These emissions are integrated meteorological conditions in simplified stability parameters to compare dispersion coefficients from non-continuous air pollution plumes. The differences are reflected in concentrations levels and greenhouse effect to transport the parcel load in both urban and rural areas. This research reveals that the elevation effect nearby buildings with other structure is higher 5 times more than open terrains. These results are agreed with Sutton suggestion for dispersion coefficients in different stability classes.

Keywords : air pollutants, dispersion modeling, GIS, health effect, urban planning

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