AIR POLLUTION MODELING:

The basic technology for analysing air pollution is through the use of a variety of mathematical models for predicting the transport of air pollution in the lower atmosphere. The principal methodologies are:

(1) Point source dispersion, used for simple industrial sources

(2) Line source dispersion, used for airport & roadway air dispersion modeling.

(3) Area source dispersion, used for forest fires or dustStorms

(4) Photochemical models, used to analyze reactive pollutants such as smog.

Point Source of Pollution:

A point source of pollution is a single identifiable localized source of air, water, thermal, noise or light-pollution.

A point source has negligible extent, distinguishing it from other pollution source geometries.

The sources are called point sources because in mathematical modeling, they can be approximated as a mathematical point to simplify analysis.

Some examples are:

- ✓ Air pollution from a power plant flue gas stack
- ✓ water pollution from an oil refinery wastewater discharge outlet.
- ✓ Noise pollution from a jet engine.
- ✓ Light pollution from an intrusive street light
- ✓ thermal pollution from an industrial process outfall

Line Source of Pollution:

A line source is a source of air, noise, water contamination or electromagnetic radiation that emanates from a linear (one-dimensional) geometry.

The most prominent linear sources are

- ✓ roadway air pollution
- ✓ aircraft air emission
- ✓ roadway noise
- ✓ certain types of water pollution sources that emanate over a range of river extent rather than from a discrete point

ATMOSPHERIC DISPERSION MODELING:

This is the mathematical simulation of how air pollutants disperse in the ambient atmosphere. The dispersion models are used to estimate or to predict the downwind concentration of air pollutants emitted from sources such as industrial plants or vehicular traffic.