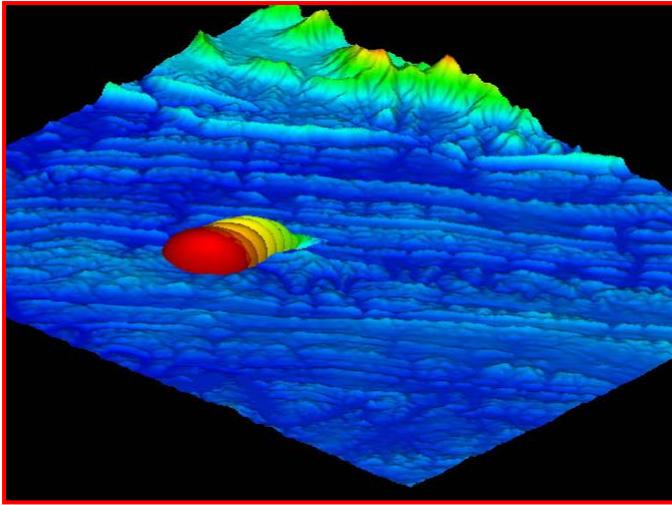


Complex Dispersion Analysis & Prediction

Modeling & Simulation Group



Problem Statement:

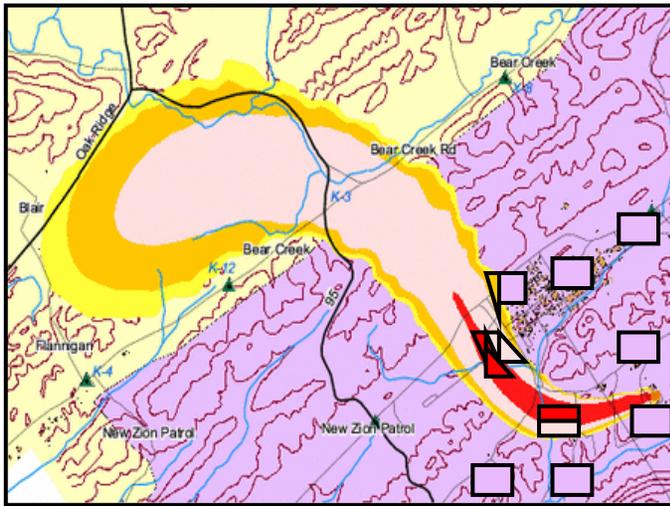
Accurate pollutant & plume dispersion calculations for use in emergency response & homeland security applications are hindered by uncertainties associated with complex terrain & urban landscapes.

Technical Approach:

Dispersion analysis is re-assessed with an emphasis on physics-based three-dimensional weather analysis, high resolution terrain modeling, land surface forms, & complex terrain meteorology.

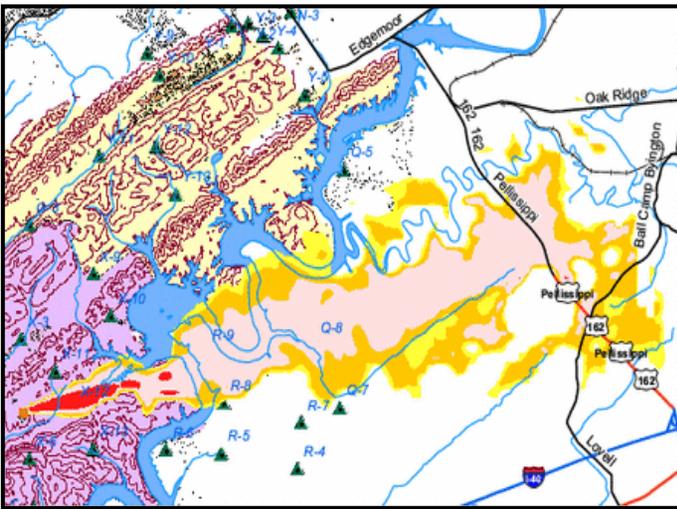
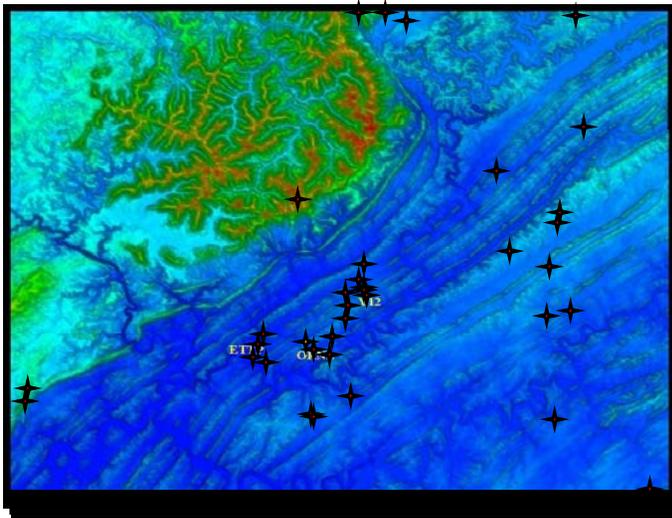
Benefit:

More accurate prediction & forecasting of pollutant concentrations at finer (sub-km) spatial scales.



EOC Plume Modeling

Modeling & Simulation Group



Problem Statement:

ORNL's Emergency Operations Center needs to operate plume models for emergency response in light of the complex terrain & meteorology of the Oak Ridge Reservation.

Technical Approach:

Operation of CAPARS (Computer Assisted Protective Action Recommendation System). MSG operates this software with a three-dimensional air flow regime & 120-meter resolution terrain.

Benefit:

More accurate prediction & forecasting of pollutant concentrations in complex terrain.

