

**CMAQ SENSITIVITY TESTING FOR THE EASTERN UNITED STATES**

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**Abstract**

In this test, MM5 simulations produced at the University of Maryland were used to drive CMAQ, and compared them with observations from the University of Maryland's aircraft program. In the course of an analysis of the MM5 results by the New York Department of Environmental Conservation (NYDEC), it became apparent that MM5 was not handling the surface winds and temperatures appropriately. This is not unique to MM5, but instead represents a problem with the state of the science. To remedy this, a new version of the MM5 Blackadar scheme has been developed, which appears to produce dramatically improved results. Those results were not ready in time for these simulations, so the original MM5 data were used instead, with an intercomparison between the two planned for later. The results of this simulation, using the older MM5 data, are surprisingly good, with similar structures observed in vertical profiles taken in the airplane and those obtained from CMAQ. In some cases, the errors are likely due to small errors in the location of the plume, while others likely reflect the inability of any model to adequately model meteorology over a feature as fine as the Chesapeake Bay at 12 km resolution. While there are some problems with absolute accuracy, we believe we will be able to address them using an improved boundary layer scheme in MM5. Details of the results will be presented in the talk.