



## **Real-time Weather and Air Quality Forecasts During NEAQS2004 Using the WRF-Chemistry Model**

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The 2004 ICARTT/NEAQS field study (International Consortium for Atmospheric Research on Transport and Transformation/New England Air Quality Study) was an intensive effort to investigate the chemical and meteorological factors that contribute to poor air quality over New England. The campaign combined efforts of numerous educational institutions as well as federal, state, and local government agencies. Observational data were collected from an extensive network of ground sites, from the NOAA research vessel *Ronald H. Brown*, and from several aircraft. Although many of the ground stations routinely collect data year-round, the period of most intensive measurements was from 15 July through 15 August 2004.

As part of an informal air quality model verification project within the ICARTT/NEAQS 2004 study and to provide daily operational guidance, weather and pollution forecasts were produced in near real time (typically 4 to 6 hours computational delay) at the NOAA Forecast Systems Laboratory using the Weather Research and Forecasting (WRF) chemistry model. The WRF-Chemistry model system is an “online,” or “fully-coupled” model in the sense that the chemistry and aerosol routines are solved in conjunction with the meteorology forecast model. In other words, the interaction and transport of meteorological, chemical, and aerosol species are calculated using the same physical parameterizations with no need to interpolate in time and/or space.

The presentation will cover the WRF-Chemistry model, the real-time forecast configuration and emissions used during the ICARTT/NEAQS 2004 field study. In addition,

the model forecast products and their use in daily operations guidance for this field study will be discussed.