Bulgarian Operative System for Chemical Weather Forecast

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In the paper, an operational prototype of the Integrated Bulgarian Chemical Weather Forecasting and Information System is presented. The system is foreseen to provide in real time forecast of the spatial/temporal Air Quality behavior for the country and (with higher resolution) for selected sub-regions and cities. The country-scale part of the system is designed, being tested and is running operationaly. It is based on the US EPA Models-3 System (MM5, SMOKE and CMAQ). The meteorological input to the system is the operational numerical weather forecast. The emission input exploits a high resolution disaggregation of the EMEP 50x50 km inventory for year 2000. When elaborated, the actual national emission inventory is foreseen to be used. The boundary conditions are prepared by a similar system running operationally in Aristotle University of Thessaloniki, Greece. The System automatically runs twice a day (00 and 12 UTC) and produces 48-hour forecast. The results of each System's run are post-processed in a way to archive the most important pollutants' forecasts as to compare them with the respective measurements for the sake of verification of the System. Part of these pollutants is visualized as sequences of maps giving the evolution of the air quality over the country. The plots are uploaded to a specialized web-server. The web-site is constructed in a way to show both forecasts for specified moments of time and animations for all forecast period for a number of key species. In the paper, description of the System is given together with a demonstration of its products.