



A comprehensive performance evaluation of an air quality model for Catalonia.

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In this work, we present a comprehensive model evaluation of the performance of MECA-MM5-CMAQ for Catalonia. The air quality model has been adapted to Catalonia (NE of Spain) in order to reproduce and to study high ozone levels observed in summers. Four nested domains are performed with resolutions of 27km, 9km and 3km. The coarse domain covers Southern Europe, Spain, half of France and South of Italy. An inner domain of 30x30 cells (9km) covers Catalonia and two domains with 3 km of resolution, the smallest ones, cover two areas of interest because of their measurements of high ozone levels. MECA is an emission model prepared by the authors, based on local information. MM5-CMAQ is vastly used by scientific community because they incorporate several schemes and modules, besides their free-open code. Two different periods of summer 2003 are simulated and evaluated against measurements in three manners: graphically, with quantitative metrics and with new unbiased symmetric metrics. Conclusions from the evaluation are presented.