



## **A case study of high level tropospheric ozone concentrations in Catalonia (north-east of Spain) with photochemical simulation**

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In summer 2003, there was a European heat wave which contributed to high ozone episodes. In Catalonia (north-east of Spain), tropospheric ozone levels were controlled by 38 operative stations, which measured exceedances of the ozone population information threshold (hourly ozone values  $>180 \mu\text{g}/\text{m}^3$  in at least one measurement station) in 49 days. This represents twice the yearly average of days with measurements of ozone above the threshold in the last decade for Catalonia.

In this work, we focus on the first days of August 2003, because of the high ozone levels measured in La Plana de Vic, an area of interest in the centre of Catalonia. The relevance of the period is due to the permanence of ozone concentrations rising above the population information threshold. Four consecutive days of high ozone values in that area is not usual, for this reason we have tried to reproduce this behaviour with a photochemical model.

A simulation of the period 1-5 August 2003 is performed for Catalonia with the model MM5-MECA-CMAQ. Results are analyzed and validated with measurement stations data, showing smoother behaviour in contrast with the high observed data. Nevertheless higher ozone values are observed in the area of interest than in the rest of the domain.