



## **Spatial distribution of the tropospheric ozone concentration in a region located in the south of the spanish mediterranean basin**

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Numerous studies indicate that wind direction and terrain orography are the primary factors that determine the spatial distribution of tropospheric ozone in a region. The highest ozone levels are obtained leeward of urban nuclei, to where the emitted precursors are transported, and frequently channelled along valleys or riverbeds.

The spatial distribution of tropospheric ozone in an orographically irregular region in the south of the Mediterranean basin is characterized in the present study. Systematic measurements of ozone concentration were carried out with Ogawa type passive samplers in a total of 28 locations, from May to September 2003.

The surface most affected by ozone contamination is the more mountainous zone located to the north and center of the study area, with average summer concentrations superior to  $100 \mu\text{g}/\text{m}^3$ , especially at points far from the coast. This is due to the transport of ozone precursors emitted in the coastal urban nuclei toward these points along numerous and steep valleys. In the south the study zone is flatter and presents lower average summer values ( $<80 \mu\text{g}/\text{m}^3$ ), because the contaminated air mass disperses far more easily.

In general it was observed that the spatial distribution of ozone concentrations is more heterogeneous when breezes predominate, or when there is atmospheric stability. In this latter condition scarce renovation of the air mass provokes an increase in ozone levels.

Finally, a classification of the sampling points was conducted in relation to the ozone levels recorded and their variations throughout the study period, finding 4 groups of points with similar behavior.

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