

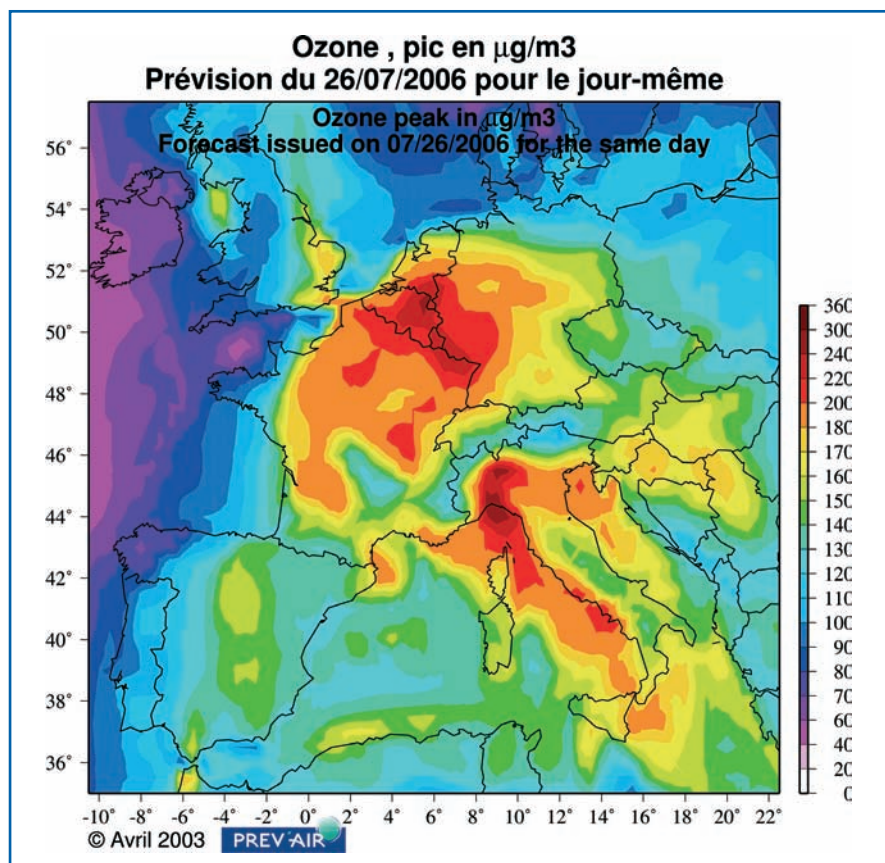
PREV'AIR: European air quality forecasting and mapping system (www.prevail.org)

Description

The PREV'AIR system was implemented in 2003 upon an initiative by the French Ministry in charge of Ecology and Sustainable Development with the aim of generating and publishing daily air quality forecasts and maps resulting from numerical simulations performed for different spatial scales (global, European, and national). Information related to ozone and nitrogen dioxide forecasted concentrations can be accessed for the northern hemisphere, Europe and France; particles (PM10 and PM2.5) are available on both European and French scales. The PREV'AIR system should address the concerns of people and organisations that would like to personally or professionally understand the continent-wide evolution and trends of the atmospheric pollution behaviour in the short and medium terms.

The PREV'AIR products :

- Maps that represent daily average and peak concentrations of ozone, nitrogen dioxide and PM are drawn up every morning for the same day, the following day and the day after. Beyond the graphical displays, numerical data are also available on the PREV'AIR website.
- Re-analyses for ozone and PM concentrations, issued from numerical simulations that are corrected, in an a posteriori process, in accordance with observation data provided by bodies responsible for air quality monitoring in Europe. It should be noted that these analysed maps are built following a near real time process, unvalidated near real time observation data being regularly assimilated in the models. Re-analyses should provide the most objective representation of air pollution patterns.



PM10 and PM2.5 : Particles with a diameter lower than 10 and 2.5 microns respectively

Added value

This kind of operational product is quite new in the field of the regional air quality (in Europe). GEO will help in promoting such an approach and in providing new observation data (earth observations especially) that could be assimilated in the numerical models for a better assessment of air pollution levels. These new data could be crucial for improving air quality monitoring where in-situ data are not implemented (in maritime areas, or in some eastern side countries for instance).

Conversely, integrated air quality modelling systems such as PREV'AIR will support the development of earth observations dedicated to this field. Specification of expected complementary measurements can be established by the regional air pollution community.

Moreover, the PREV'AIR system should be included in the GEO tools for a better evaluation of the atmospheric pollution that is well-known for having significant adverse impact on human health and ecosystems.

Relevance to GEO

The PREV'AIR system will contribute to the tasks on health issues and it has been identified as a main contribution of the task HE-06-03.

Participants

- INERIS (France)
- CNRS (national research centre –France)
- Météo France
- ADEME (french environment agency)

Current status and gaps

PREV'Air is running in an operational way for almost 5 years now. It is funded by the Ministry in charge of Ecology, being one of the component of the French air quality monitoring system. It is considered as a sustainable system. PREV'AIR consortium is now involved in several European consortia created within the GMES initiative which aim at developing the European expertise in the field of air quality forecasting and mapping. PREV'AIR contributes to the PROMOTE (ESA) and GEMS(FP6) projects that are examples of such ambitious projects that will allow gather skill and experience on this topic and that will benefit to GEO.