



## **The use of POLDER satellite data for CHIMERE chemistry-transport model**

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Aerosol optical thickness derived from sun-synchronous satellite data have recently become available and several studies deal with the monitoring and the retrieval of integrated column of particulate matter. On the other hand air quality forecasts and maps resulting from numerical simulations are published everyday on the Internet and filed in a database. We present the analysis of atmospheric aerosol pollution events recorded during year 2003 over Western Europe using both satellite data and chemistry-transport model (CTM).

Aerosol optical thickness retrieved using POLDER measurements (Polarization and Directionality of Earth's Reflectance on ADEOS-2) is compared to integrated column of PM<sub>25</sub> concentration simulated by CHIMERE CTM, the model used in the French air quality monitoring system (PREV'AIR). Large positive correlation has been obtained between measurements and simulations, and particularly during two intense aerosol peak events recorded and simulated on April and August 2003. Our analysis focused on those two events point out the benefits and limits of those two ways of monitoring.

To improve the simulation, the aerosol optical thickness has been used to compute an initialisation map accorded to the vertical distribution, size and aerosol composition simulated by the model. The resulting simulation with satellite data performs a better description of the variability of the field of pollution at the beginning of the process.