



A.R.P.A.

Agenzia Regionale per la Protezione dell'Ambiente

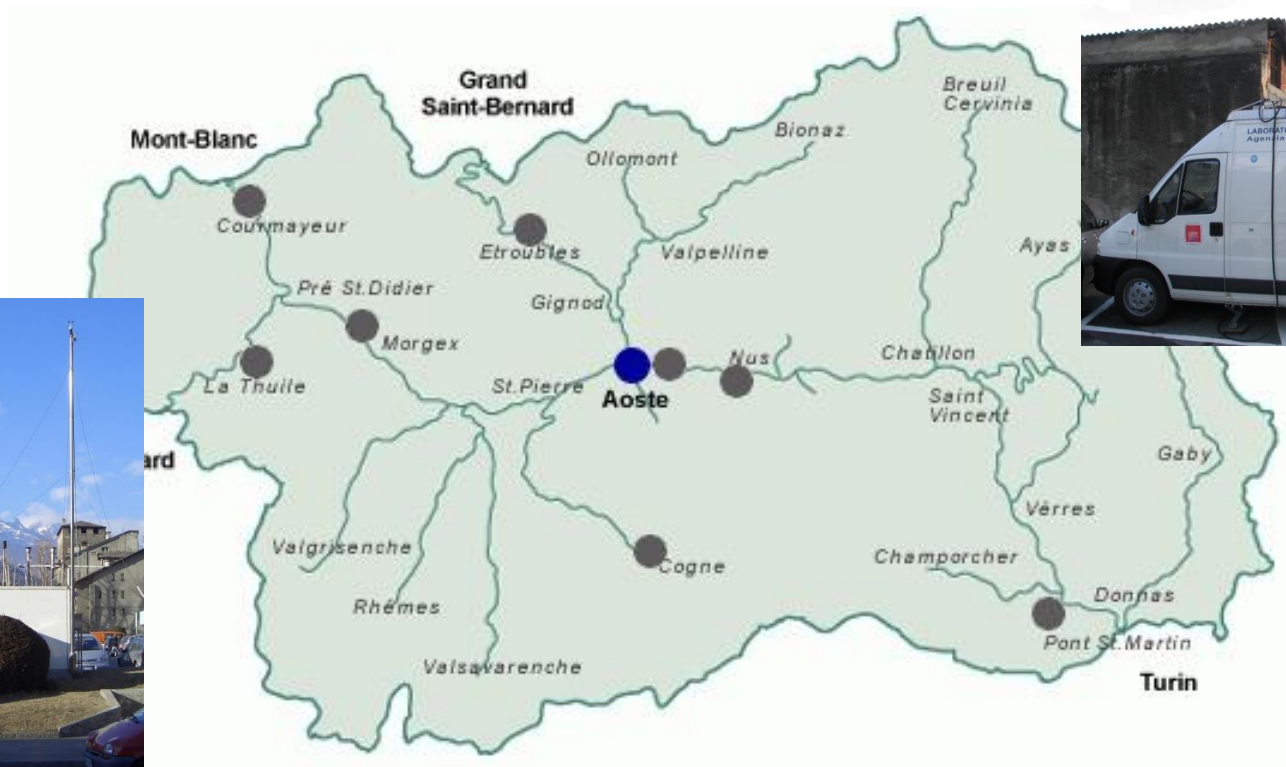
Air Quality Monitoring: an integrated approach

Air Quality Monitoring: an integrated approach

- The measurements of the Air Quality Monitoring Network;
- The knowledge of the pollutants sources;
- A numerical modelling system;

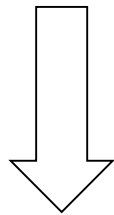
Air Quality Monitoring Network

10 monitoring stations for the pollutants



Air Quality Monitoring: tropospheric ozone

- The majority of tropospheric ozone formation occurs when nitrogen oxides (NO_x) and volatile organic compounds (VOCs), react in the atmosphere in the presence of sunlight

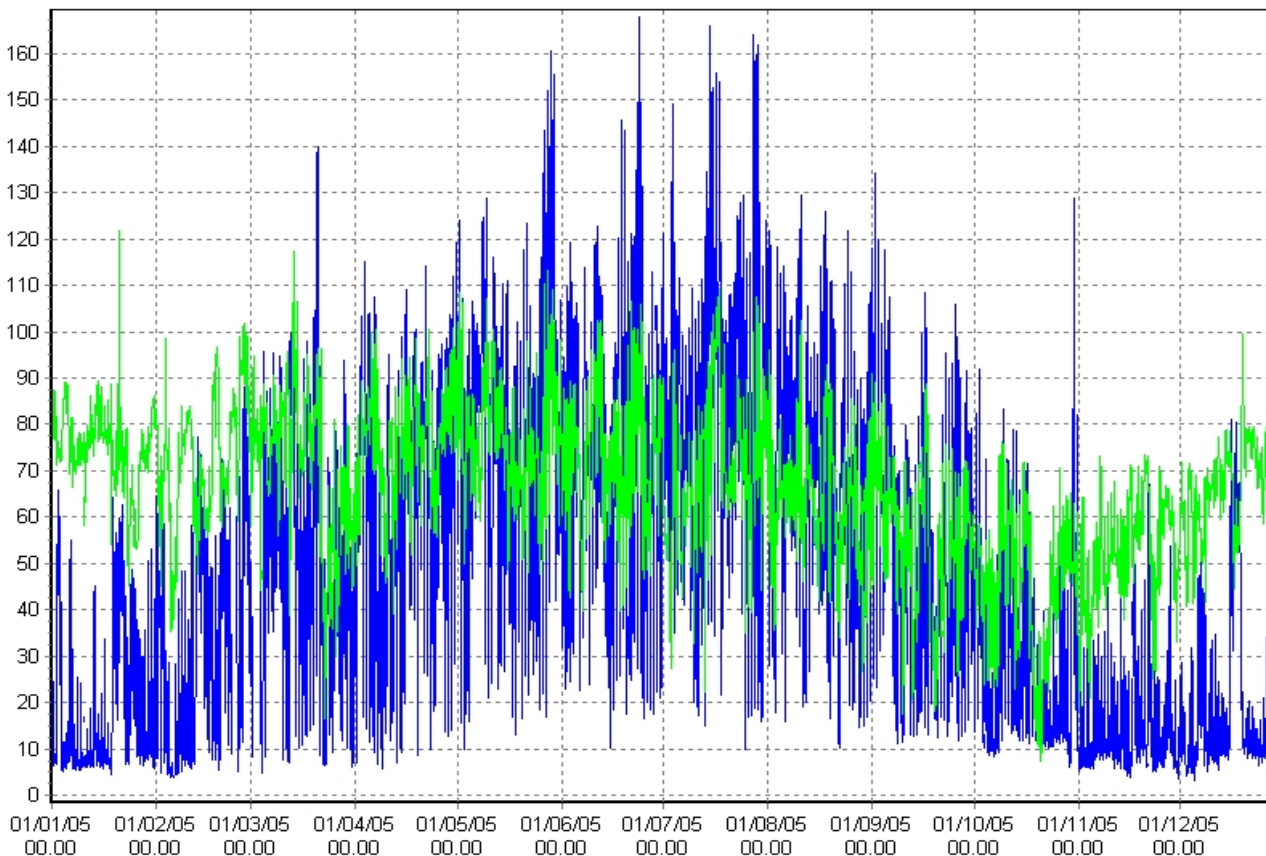


- Daily cycles and seasonal cycles;
- 5 sites : rural (2), urban, suburban and in altitude;

Air Quality Monitoring: tropospheric ozone

Data da 01/01/2005 a 29/12/2005 23.59.59 [Orari]

— Plouves O3 [$\mu\text{g}/\text{m}^3$] — La Thuile O3 [$\mu\text{g}/\text{m}^3$]



Dispersion pollutants modelling

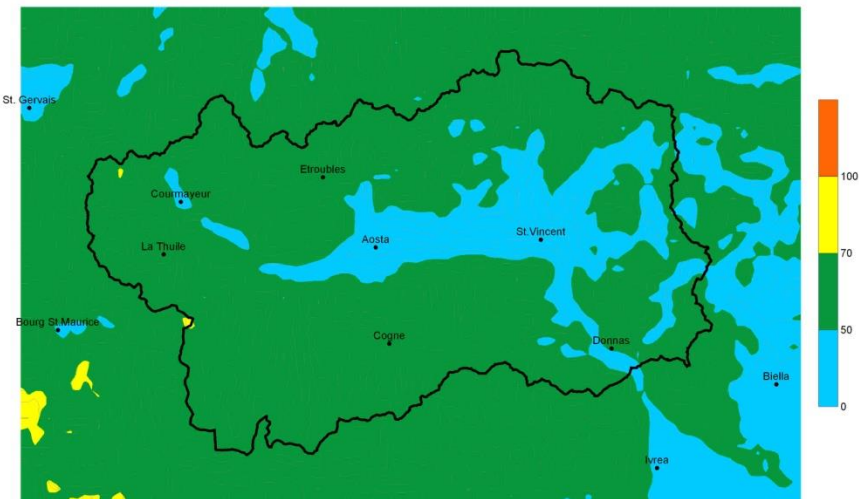
FARM (Flexible Air quality Regional Model): a three-dimensional Eulerian model that accounts for the transport, chemical conversion and deposition of atmospheric pollutants.

Inputs for the model:

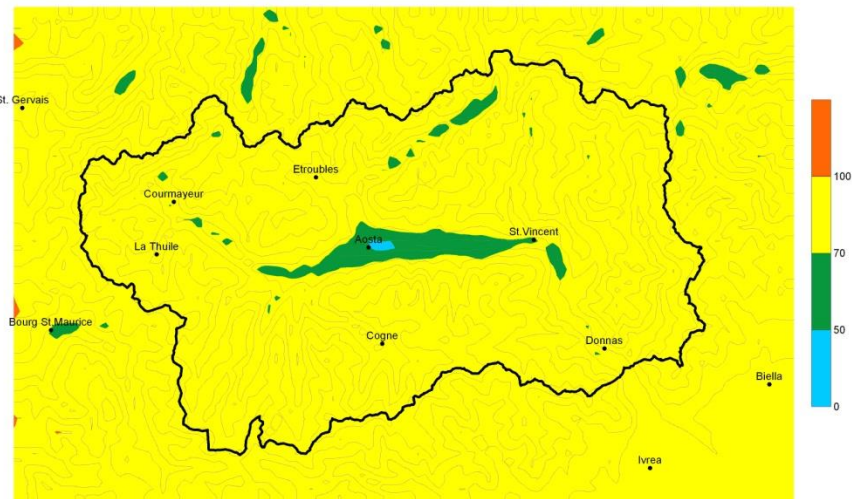
- Orography;
- Meteorology (data and interpolation);
- Emissions sources;
- Photochemical reactions set

Dispersion pollutants modelling :O₃

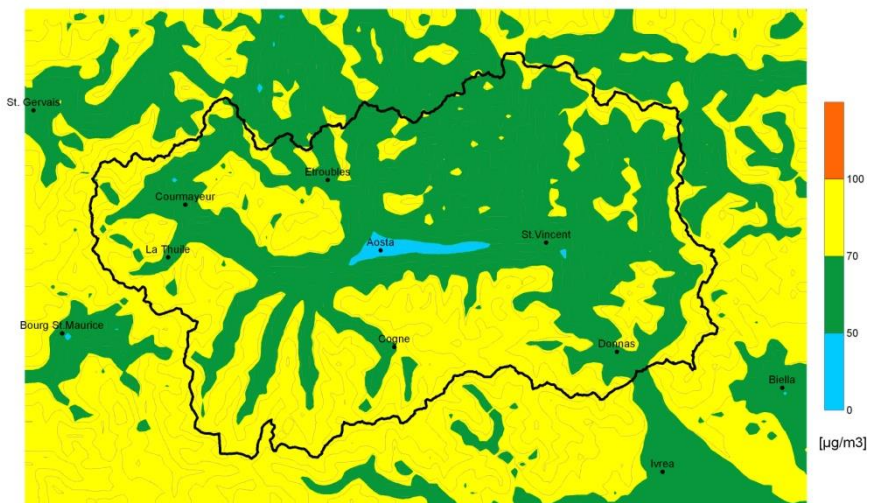
January mean



July mean

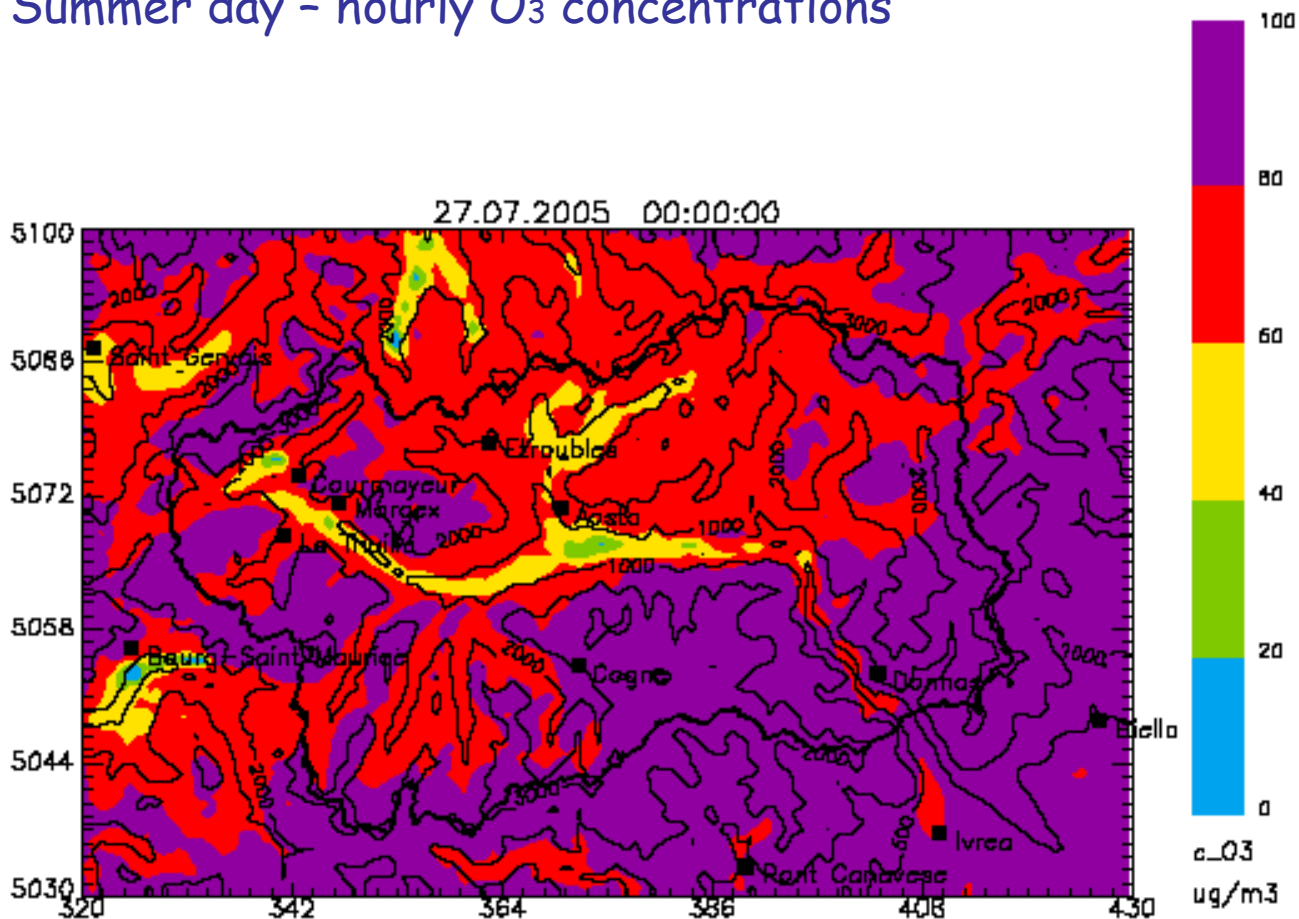


Yearly mean



Dispersion pollutants modelling

Summer day - hourly O₃ concentrations



Dispersion pollutants modelling

Good agreement with the measured values

