

An aerial photograph of a town, likely in the Alps, is shown from a high angle. The town is surrounded by green hills and is partially obscured by a thick layer of white clouds. Overlaid on the bottom left of the image is a white weather map showing isobars (lines of equal pressure) and wind vectors (arrows). The isobars are labeled with values such as 1010, 1015, 1020, 1025, 1030, 1035, 1040, and 1045. The wind vectors are represented by arrows of varying lengths and directions, indicating wind speed and direction. The background of the entire slide is a dark blue gradient with a stylized sun in the top left corner.

Surface observations

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Météo-France
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METEO FRANCE
Toujours un temps d'avance

From the first instruments to a dedicated observing system



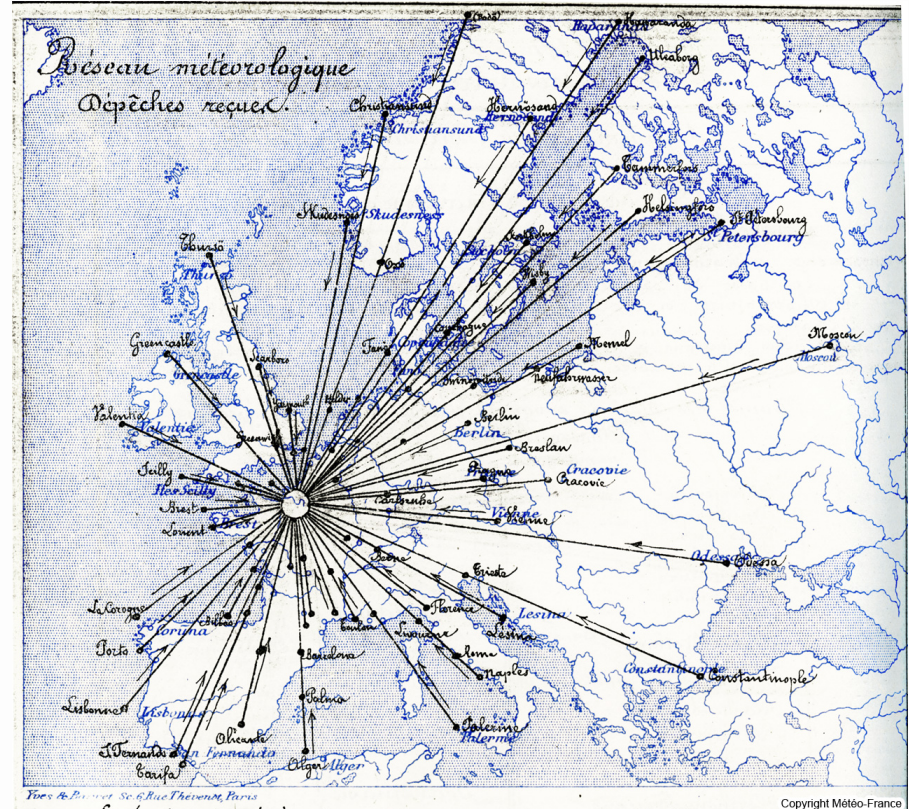
Torricelli ~1643



A network of observation : a first step toward forecast



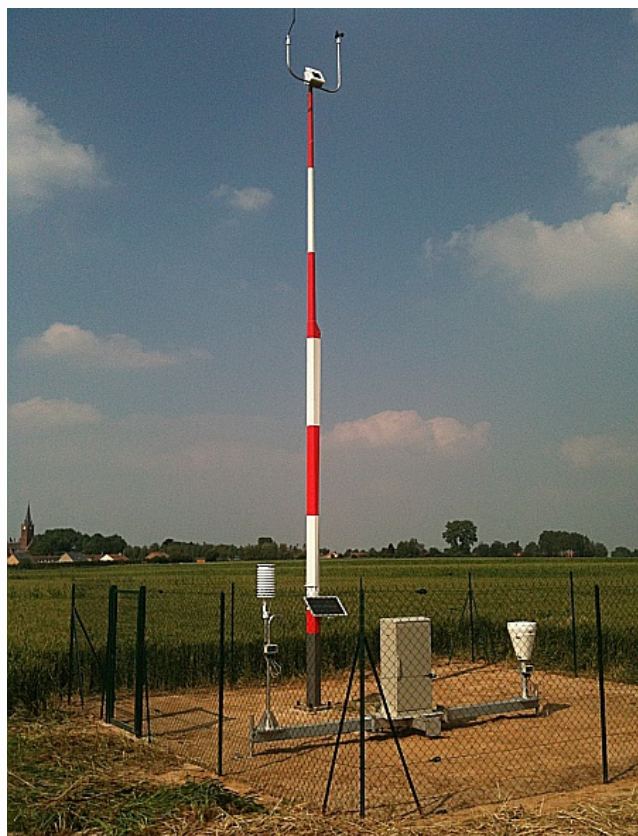
Urbain Le Verrier



Nice 1957 - 2013



Surface based measurements



Instruments



Précipitations



Température



Humidité



Abris



Pression



Vent



Rayonnement



Hauteur de neige



Hauteur de base des nuages



Visibilité

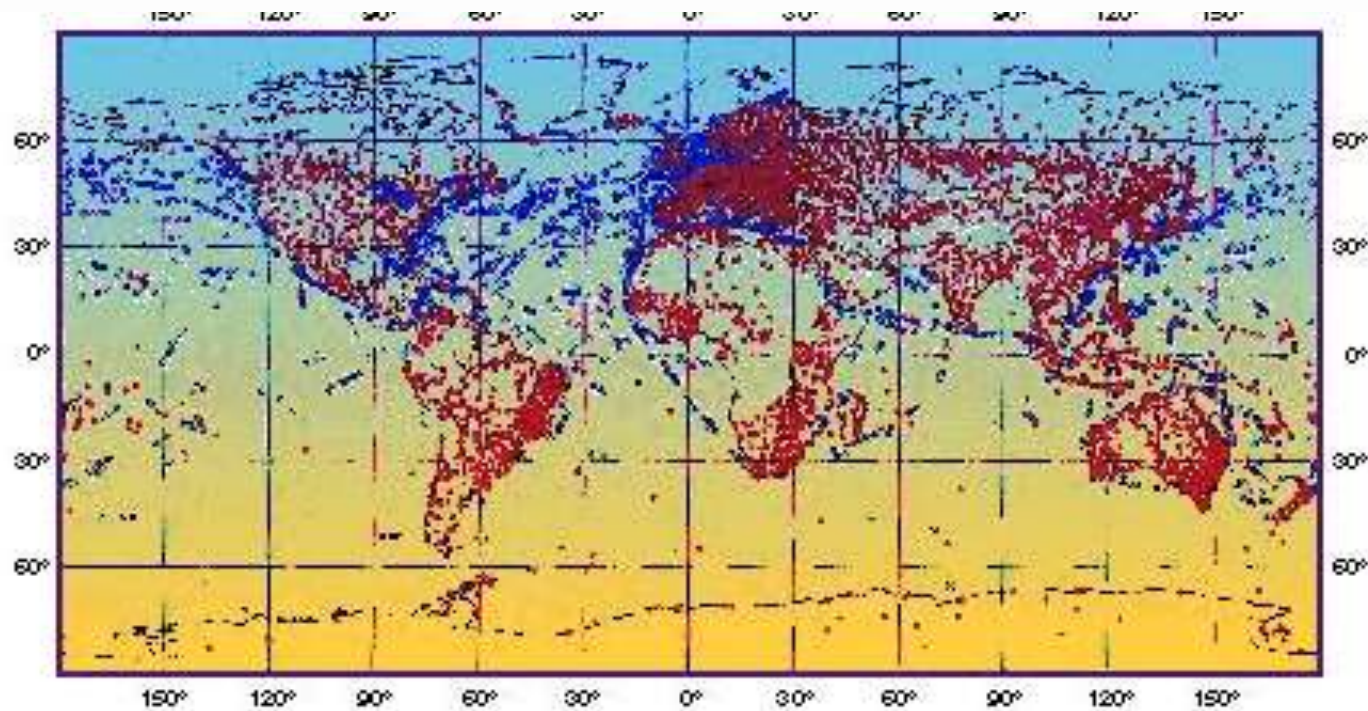


Temps présent



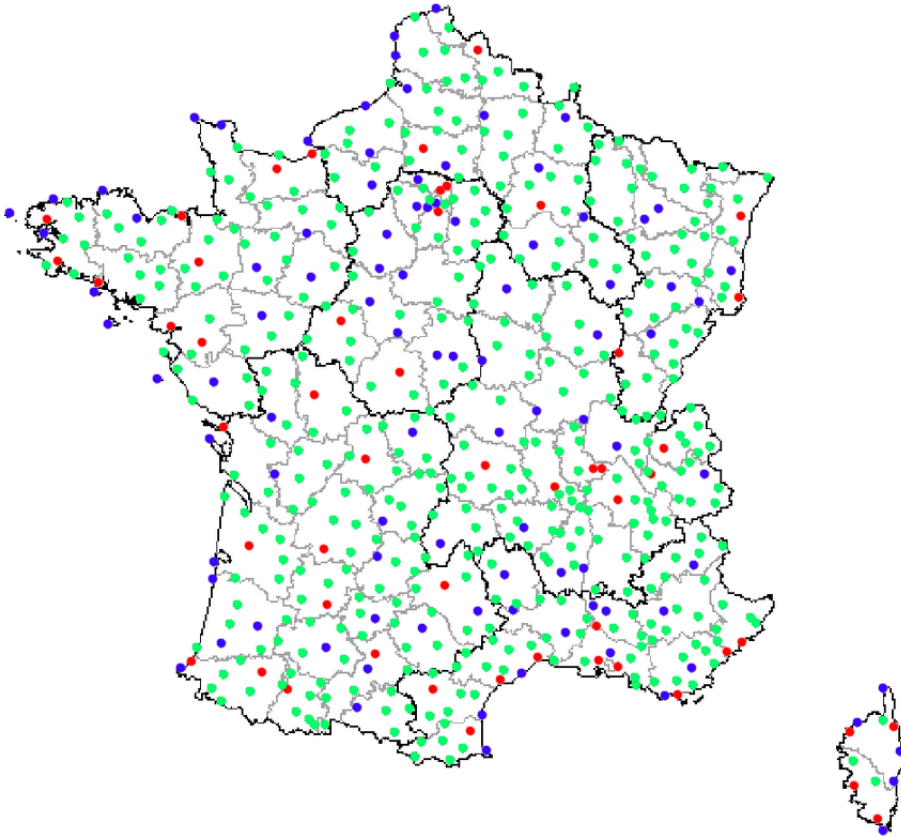
Etat du sol

Global Observing System : 11 000 stations vol A



France : main auto network

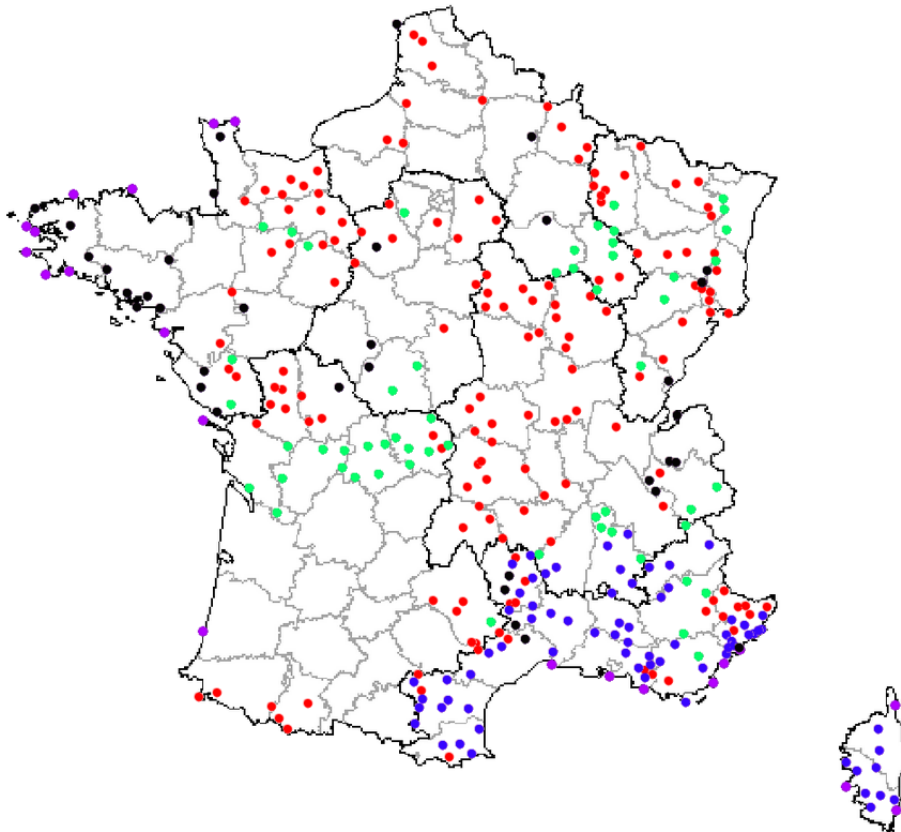
- RADOME_RESOME / SYNOP_NON_AERO
- RADOME_RESOME / SYNOP_AERO
- RADOME_RESOME / RRA



- 585 AWS
- Precipitation, Temperature, Wind speed and direction, Humidity
- Opt. : solar rad., UV, pressure, cloud height, snow depth, visibility, ...

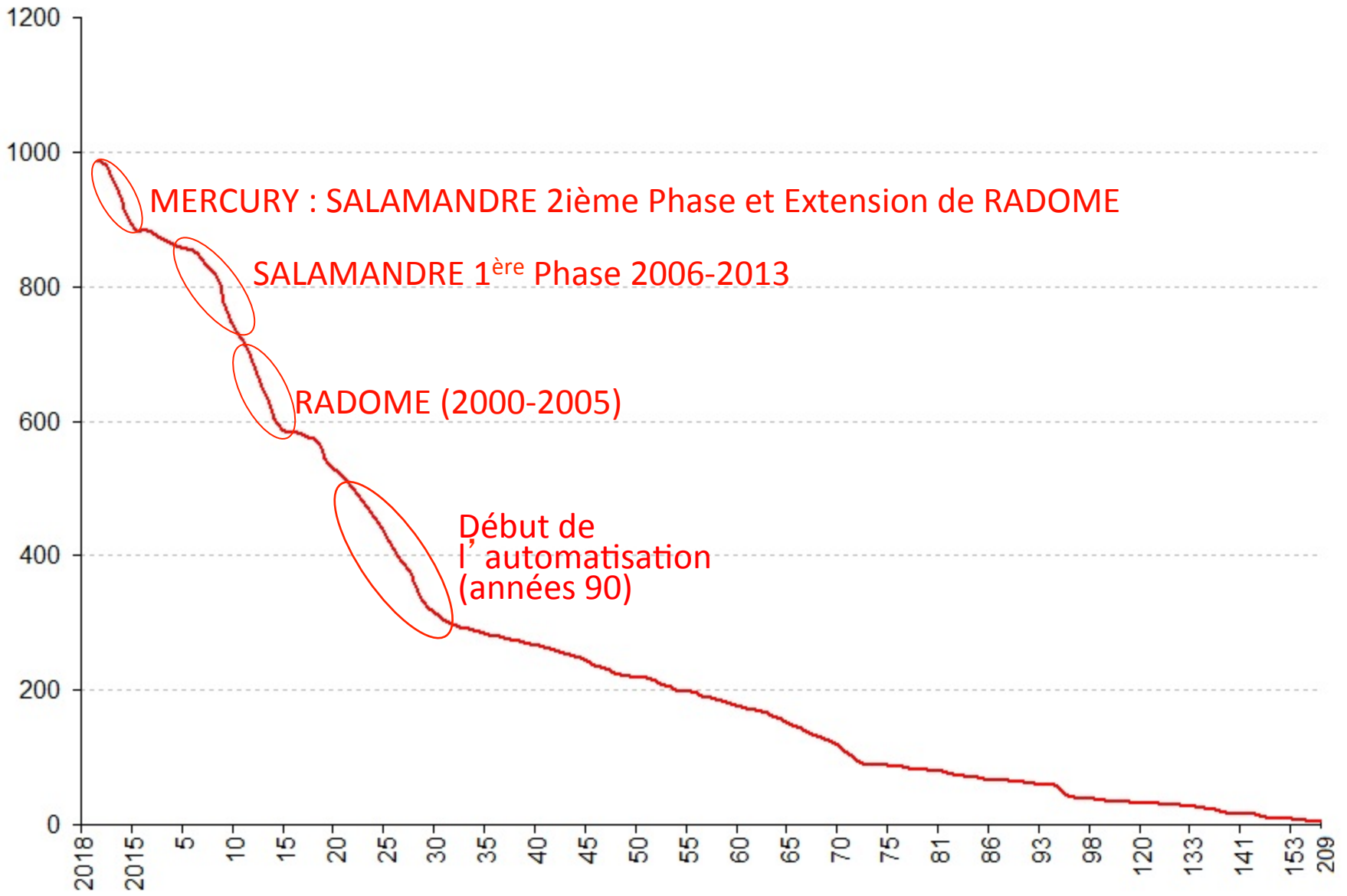
France : complementary auto networks

- OARA / DGPR_SALAMANDRE
- OARA / FEUX_FORET
- OARA / SEMAPHORES
- OARA / DGPR_AUTRES
- OARA / AUTRES



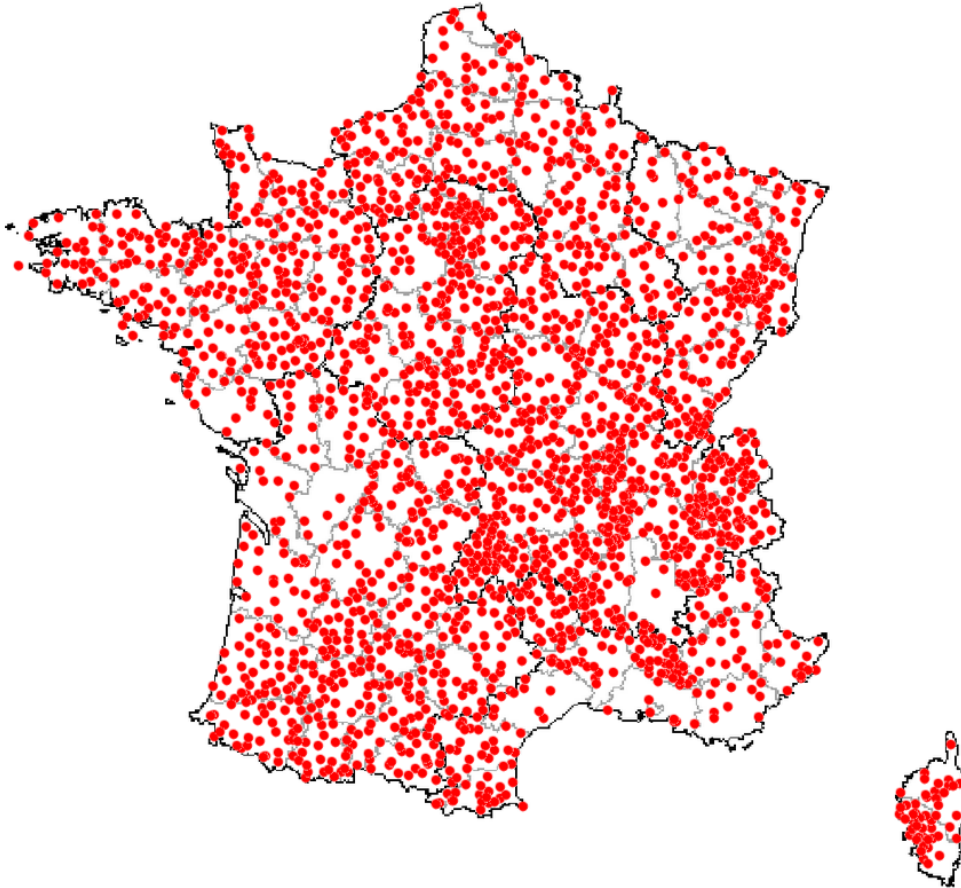
- Flood forecast, fire hazard, navy, ...
- Approx. 300 AWS
- + partnerships

France : sustainable auto. network



France : volonteurs

CLIMATOLOGIE_COMPLEMENTAIRE / CLIM_MANUEL_ROC



- 2350 volonteurs

France : overseas



Kerguelen

Operations and organisation

- *Not included sat.obs.*
- Around 100 000 equipments
- 39 maintenance teams, more than 300 engineers and field technicians (mainland and overseas)
- 15 M€ / y

