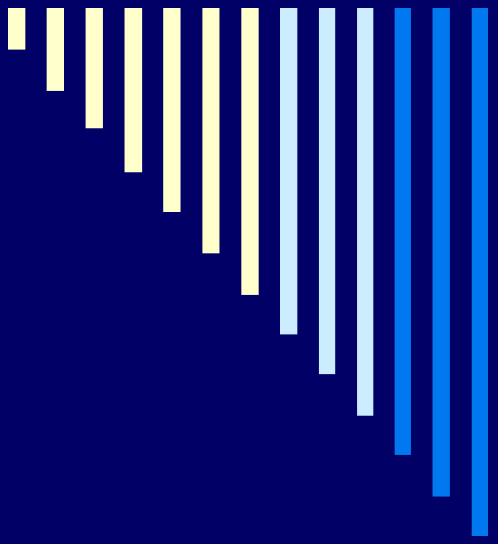


PS3B Sounding the atmosphere

Ulrich Corsmeier (KIT, Germany)
Olivier Bock (IGN, France)
Evelyne Richard (CNRS, France)

Our guidelines

- **Define TTO1 "Sounding the atmosphere"**
  - **A) RS**
  - **B) Balloons**
  - **C) Wind profilers**
  - **D) GPS + AERONET**
  - **E) Lidars (Backscattering + Raman) + MW radiometers**
  - **F) Radars**
  - **G) Microphysics + Aerosols**
  - **H) Lightening**
- ***Contribute to the definition of TTO3 " Surface fluxes over land"***
- **Contribute to the definition of TTO5 "Surface fluxes over the sea"**

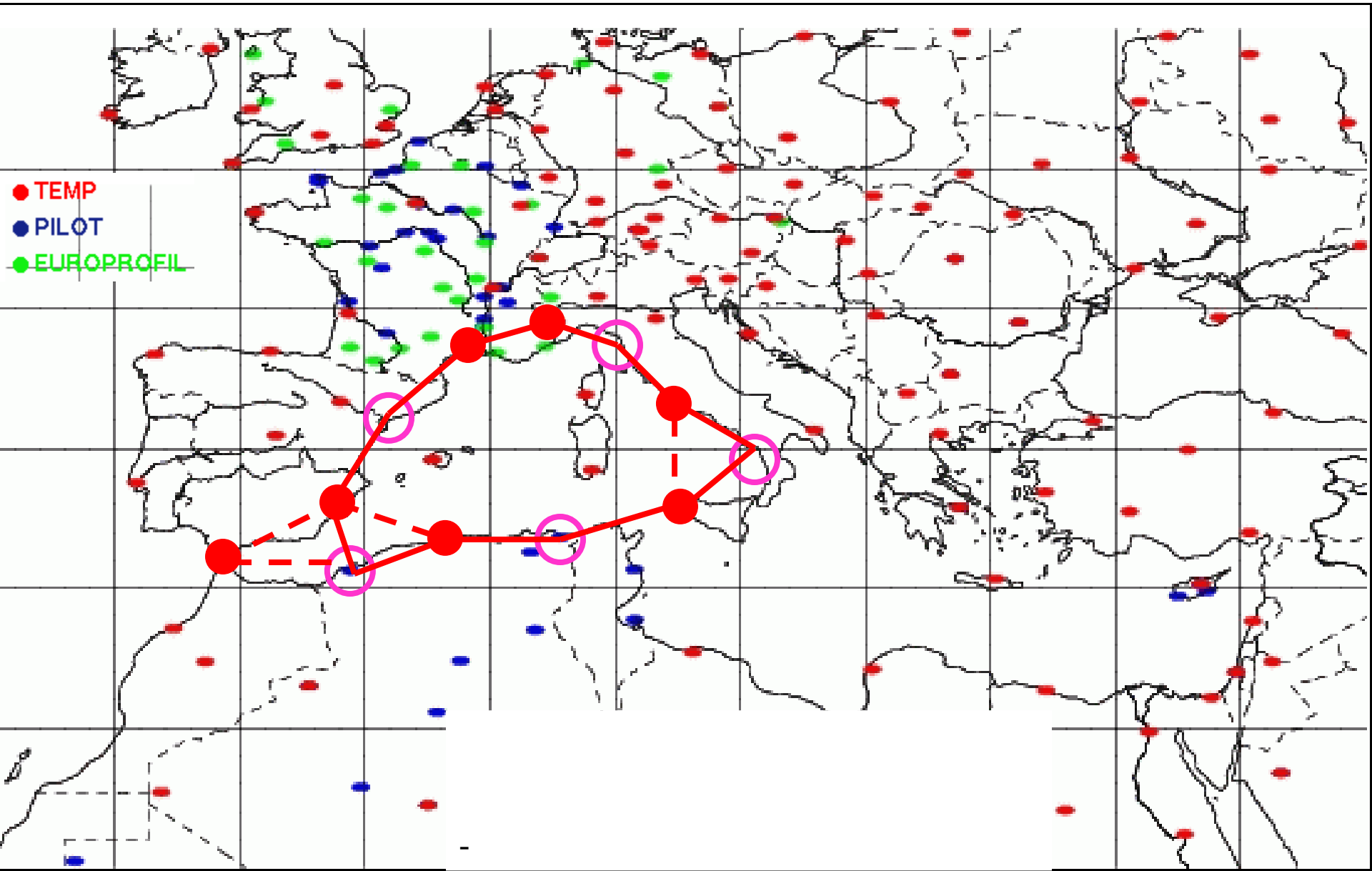
a) Radiosoundings

- Provide an exhaustive list of RS (location, frequency, reliability)
- Identify the gaps, optimize the network
- Provide maps with minimum and optimum network
- Distinguish the needs between LOP/EOP/SOP
- Investigate a potential support from EUCOS
- Adapt the AMMA system to monitor the input to the GTS
- Investigate solutions for storing High Res RS

- Potential leaders:

Radiosonde network

Courtesy O. Bock (IGN, France) & V. Ducrocq (Météo-France)



b) Balloons (SOP)

- Define a precise strategy for the different types of balloons (PBL ballons, aeroclippers, driftsondes)
- Select launching sites and frequencies according to prototype numerical studies
- Develop strong connection with T-NAWDEX for the driftsondes

- Potential leaders:

c) Wind profilers (UHF/VHF/ Wind lidar)(LOP/EOP)

- Provide an exhaustive list of available instruments
- Propose optimal location for each movable profiler
- Work on the real time transmission issues

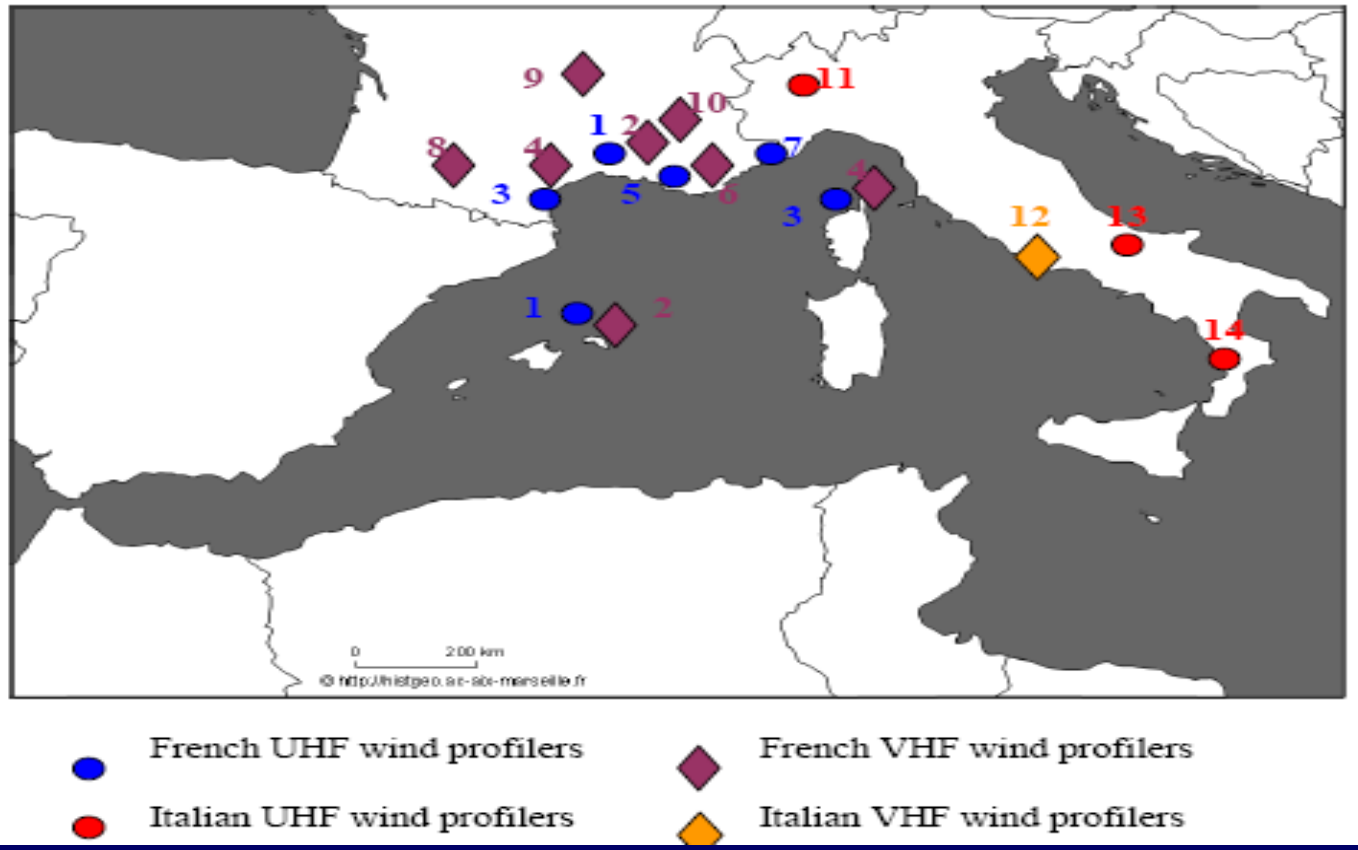
- Investigate the potential of WP network for 3D wind retrieval
- Investigate the potential of new techniques (e.g. water vapor)

- Include Wind lidars

- Potential leaders:

c) Wind profilers (to be updated)

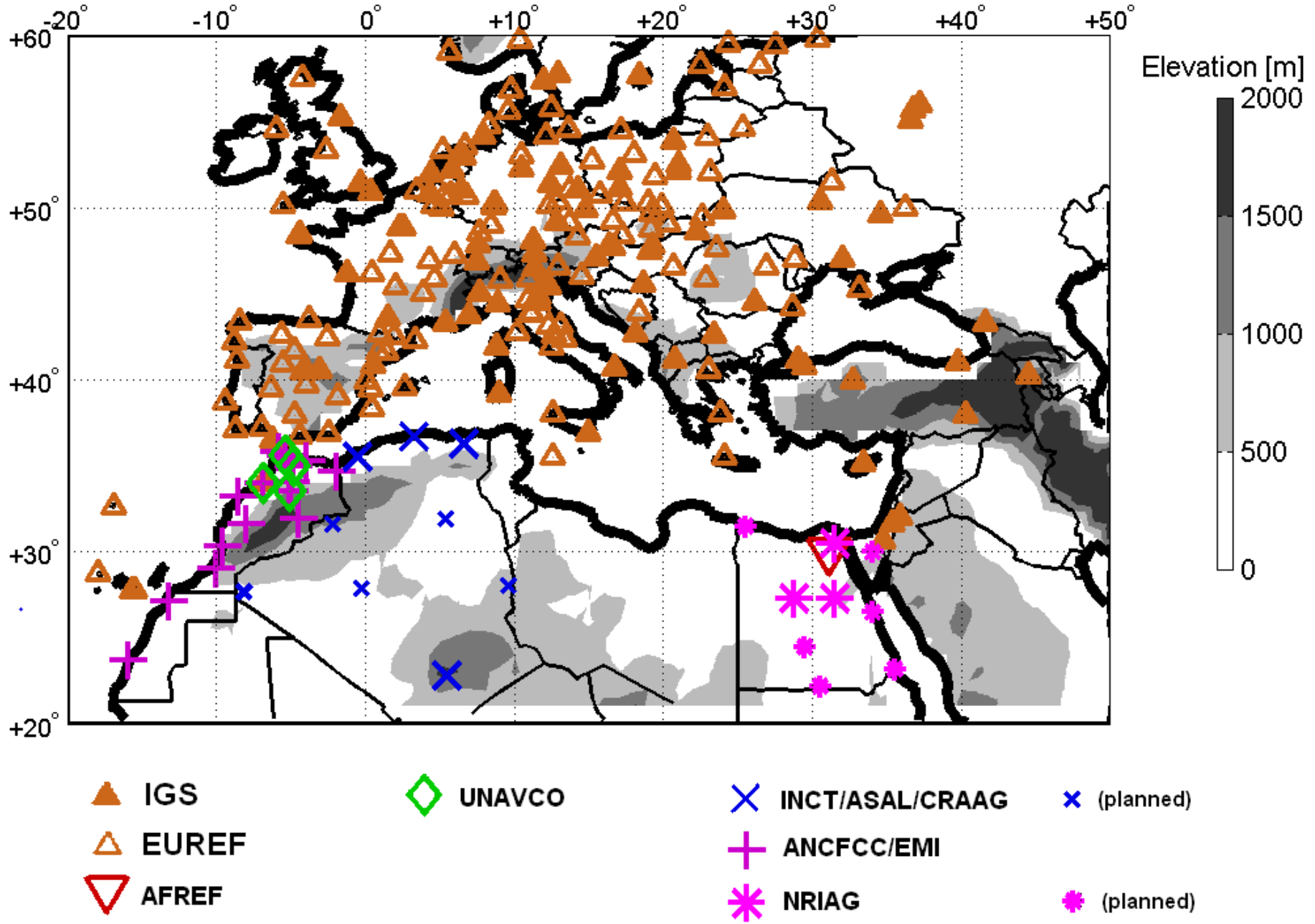
Figure 3 : Map of the wind profiler network



d) GPS (LOP/EOP/SOP)

- Provide an exhaustive map of the permanent stations
- Pursue the effort to collect North African data and to integrate them into the existing networks (EUREF, EGVAP)
- Propose a list of additional stations for SOPs (supersites and/or local network suited for tomographic analyses)
- Investigate the potential of shipborne stations
- Include AERONET photometer network (TCWV data)
- Potential leaders: O. Bock + X

GPS network


-20°
-10°
0°
+10°
+20°
+30°
+40°
+50°
+60°
+50°
+40°
+30°
+20°
Elevation [m]
2000
1500
1000
500
0
IGS
EUREF
AFREF
UNAVCO
INCT/ASAL/CRAAG
(planned)
ANCFCC/EMI
NRIAG
(planned)

e) Lidars (SOP/EOP/LOP)

Backscattering (aerosols) + Raman (T, q)

- Provide an exhaustive list of the available instruments (parameters, altitude range, performances)
- Provide a list of collocated instruments
- Optimize the network with the few transportable instruments

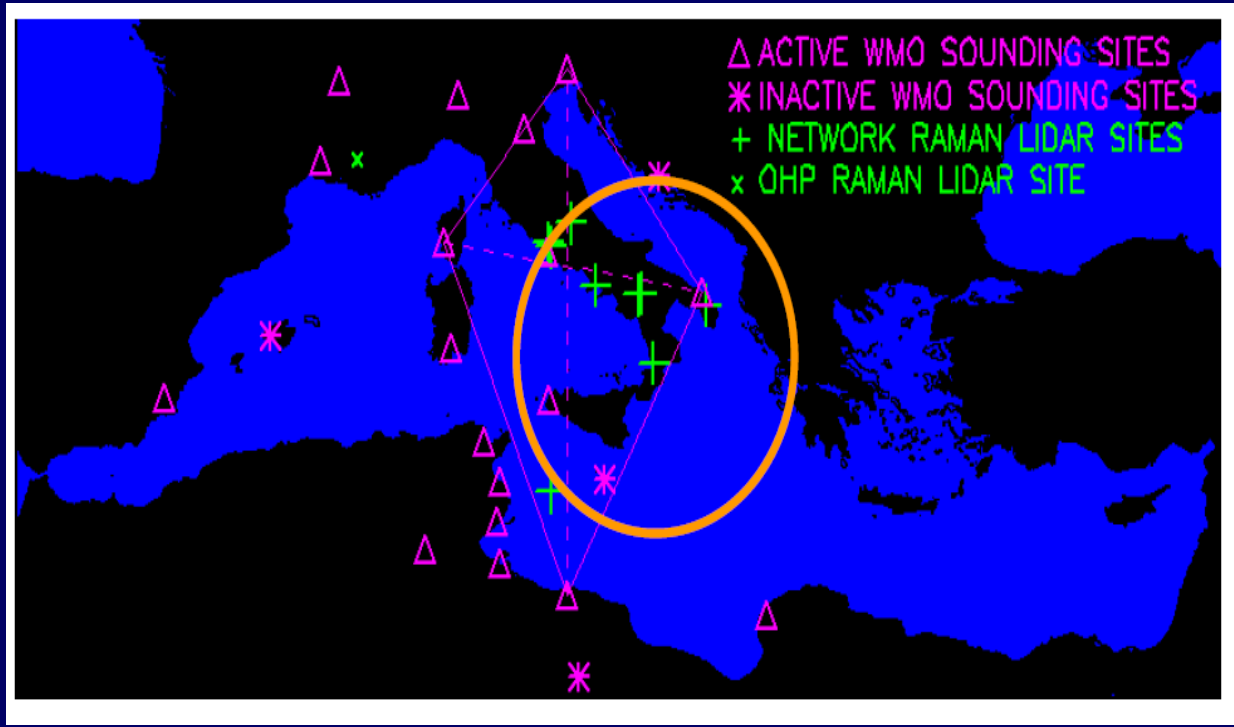
- Include MW radiometers & ceilometers

- Potential leaders: G. Liberti + X

e) Lidars

11 WV lidars
3 movable
Roma / Potenza
Hohenheim

Optimal location for SOPs?

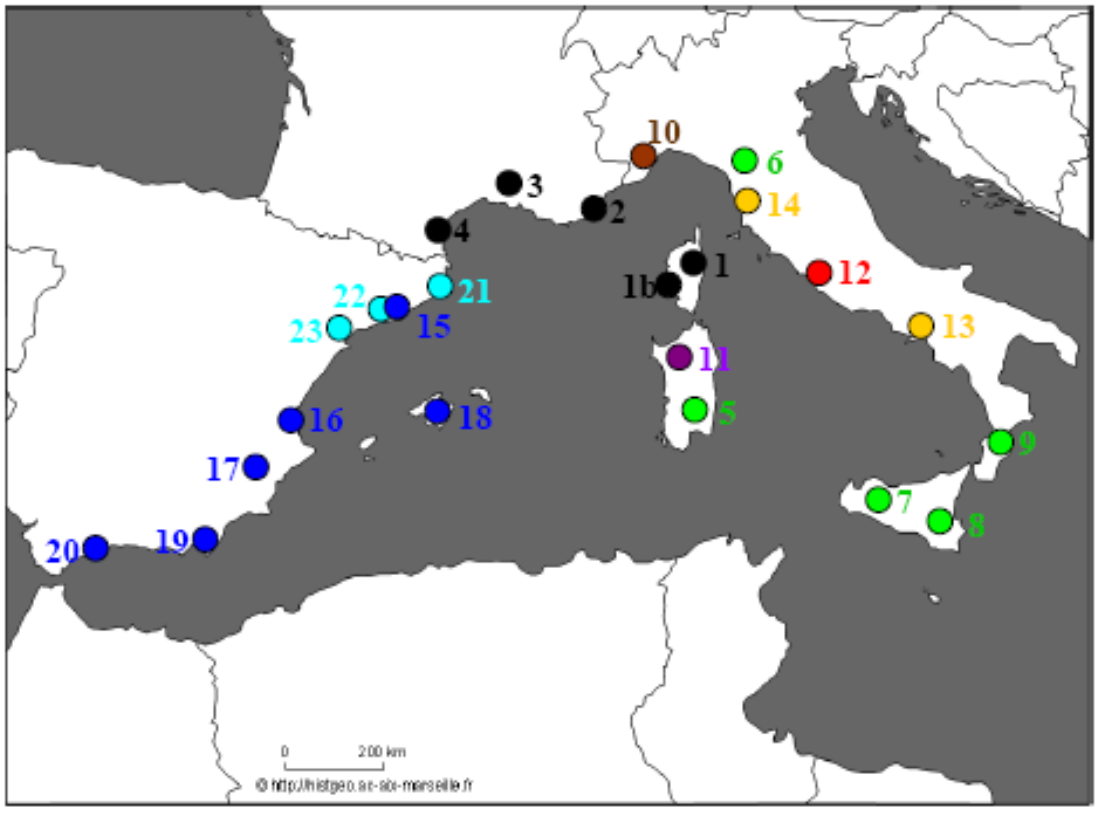


f) Radars (SOP/EOP/LOP)

- Provide an exhaustive list of the available instruments
- Provide a map with minimum/optimum radar coverage
- Provide a list of the mobile radars and propose their geographical distribution w/r sites and/or supersites
- Motivate the involvement of some major facilities (e.g POLDIRAD, S-POL, DOW → SOP))
- Potential leaders: O. Bousquet + X (Spain) + Y (Italy)

f) Radars

Figure 1 : Map of the weather radar network



g) Microphysics

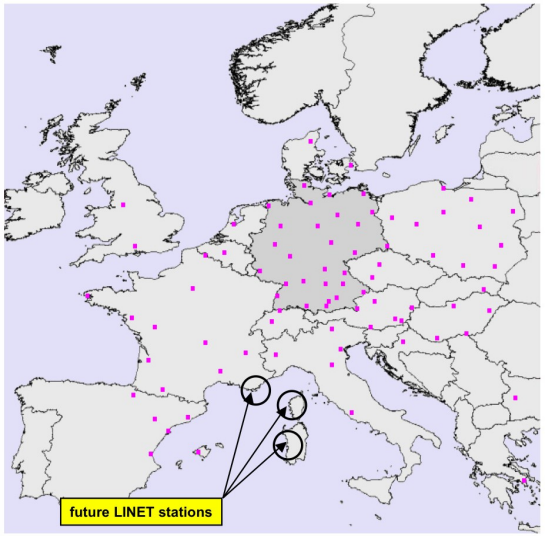
- Provide an exhaustive list of the available instruments
  - Disdrometers
  - Aircraft instrumentation
  - Radar retrieval products
  - Video-sondes
  - ….
- Include aerosols
  - Ground measurements
  - CCN chambers
- Potential leaders:

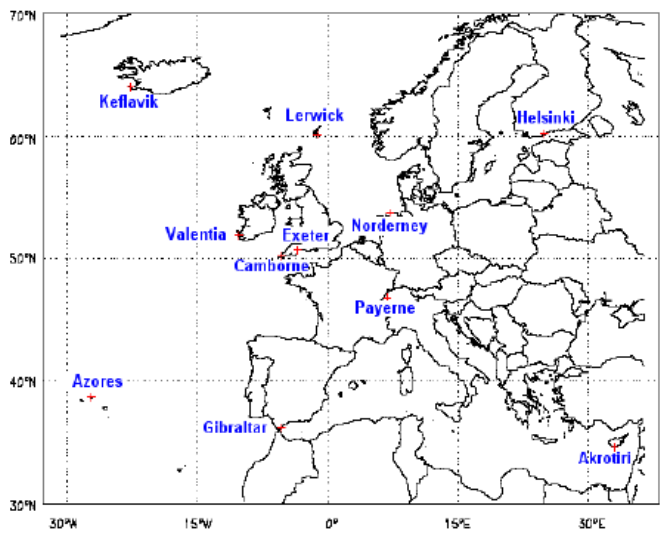
h) Lightening (LOP/EOP/SOP)

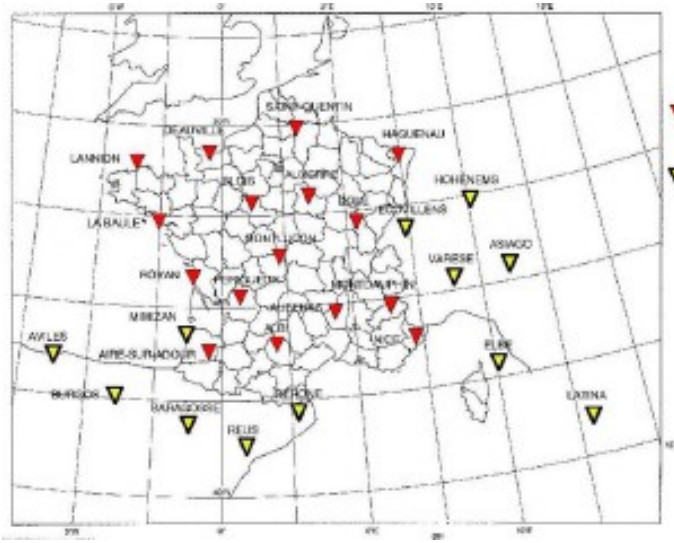
- Coordinate the two proposals
- Provide list of SOP specific deployments + costs
- Potential leaders: E. Defer, K. Lagouvardos, S. Coquillat

Proposal N°3: Lightning, obs/modeling

by E.Defer (LERMA, France) & coll.







Coupled approach: obs/models

Properties of storms, microphysics…