

# Round Tables **PS1a** & **PS2b**

- **PS1a** : Long-term hydrometeorological observatories over ocean (*M.-N. Bouin, K. Béranger & I. Taupier-Letage*)
- **PS2b** : Measuring air-sea fluxes and sounding the ocean (*I. Taupier-Letage & S. Belamari*)

# Main objectives

- **PS1a :**

- *Identify the long-term ocean observatories or observations that contribute to the LOP (exemple of such long term observatories are for example MOOSE or Lampedusa site)*
- *For each observatory, (i) describe the associated scientific aims, and (ii) identify some contact points for data access*

- **PS2b :**

- *Define the instruments that need to be deployed in sites/supersites or the research platforms needed*
- *For each instrument/platform (i) describe the scientific aim, (ii) describe how it includes in the overall program strategy, and (iii) identify the groups/persons in charge of deployment*

- **Both :**

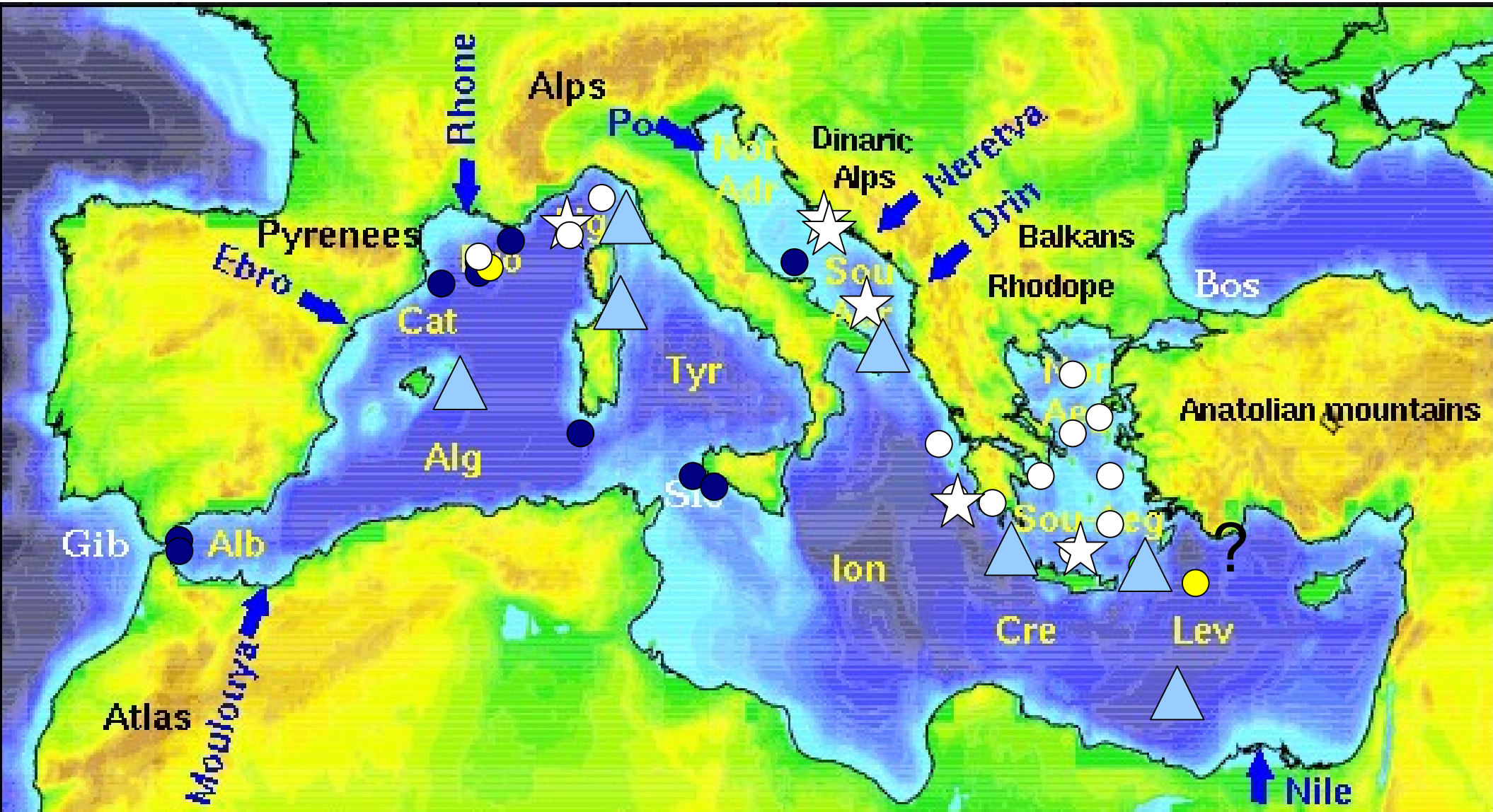
- *Establish a priority list*
- *Gather information about funding collected*

1. Oceanic deep convection
2. Waters masses circulation
3. OA boundary layer heat budgets
4. Ocean mixed layer salt budget
5. (Sub-) Meso-scale eddies

Instrument	Scientific issue	SOP	EOP	LOP	Depth	Spatial localisation	Potential leader
Time series of moored CTD profilers	1	✘	✘	✘	Subsurface → ~3000 m	See map « CTDs »	
Time series of sea bottom CTDs	1 - 2	✘	✘	✘	Bottom		
Time series of moored intermediate and deep layers CTDs	1 - 3 - 4	✘	✘	✘	Subsurface → bottom		
Time series of upper layer moored CTDs	1 - 3 - 4	✘	✘	✘	0 → 100s m		
Network of CTD (+O <sub>2</sub> ) profiles	1 - 2	✘			Surface → bottom		
Dedicated CTDs (+O <sub>2</sub> ) transects	1 - 2	✘			Surface → bottom	<i>Chimney of deep convection in February</i>	
			✘	✘		Cross-basin and cross straits yearly transects (see map 3)	
Dedicated XBTs/U-CTD transects	3	✘				Linked to heavy rain events	
Dedicated XBTs/U-CTD transects (if supported by MOON/MyOcean)	2		✘	✘			
Time series of SST/SSS along transects from ships of opportunity +XBTs (MOON, MyOcean contrib.)	1		✘	✘			
Currentmeters moorings (ADCP)	2		✘	✘		Deep Water Formation areas, south-eastern Mediterranean,	

# Moored CTDs

- sea bottom CTD
- ☆ mooring line equipped with CTDs
- upper layer moored CTD
- moored CTD profiler
- ▲ (needed)



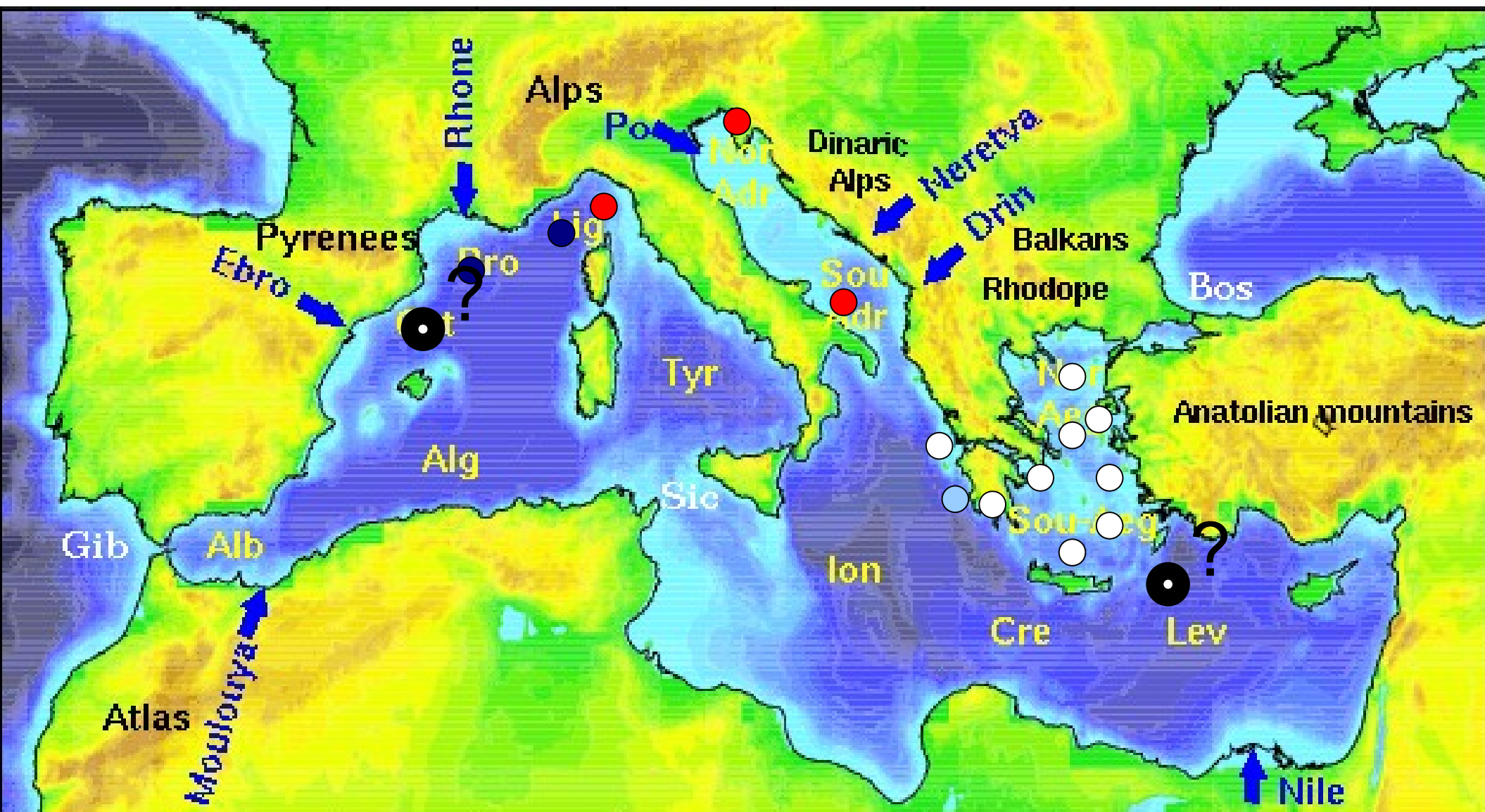
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<b>ARGO profilers</b>	1		×	×		Call to each country – DWF	
<b>Marisondes (~20)</b> (drifting buoys equipped with thermistors chain)	1 - 3	×			0 → 300m	Dense water spreading area	
<b>SVP</b> (drifting buoys equipped whether with thermistors or salinity)	4	×	×		0 → 150m	DWF + straits	
<b>Tow-yo</b> (sensoar, U-CTD) dedicated transects (to get T/S)	5	×			0 → 400m	DWF + north Balearic front	
<b>Autonomous floats</b> measuring the vertical velocities : - gliders in mooring mode - Pegasus floats ? Gascard floats ?	1	×	×		Water column		
<b>Moored surface buoys</b> measuring meteo-oceanic parameters (SST, Tair, RH, wind speed, Pair, LWR ?, SWR ?) ⇒ bulk turbulent + radiative heat fluxes	3 - 4	×	×	×		See map « Surface buoys »	
<b>Shipborne mast : direct (IDM/ECM) turbulent + radiative heat fluxes</b>	3 - 4	×	×	×		See map « TRANSMED »	
<b>Rain</b> measurements : - radars - PAL - moored surface buoys	4	×	×	×		See map « Rain »	

# Surface buoy observations : Tair, SST, P, RH, wind, SSS, (SWR, LWR)



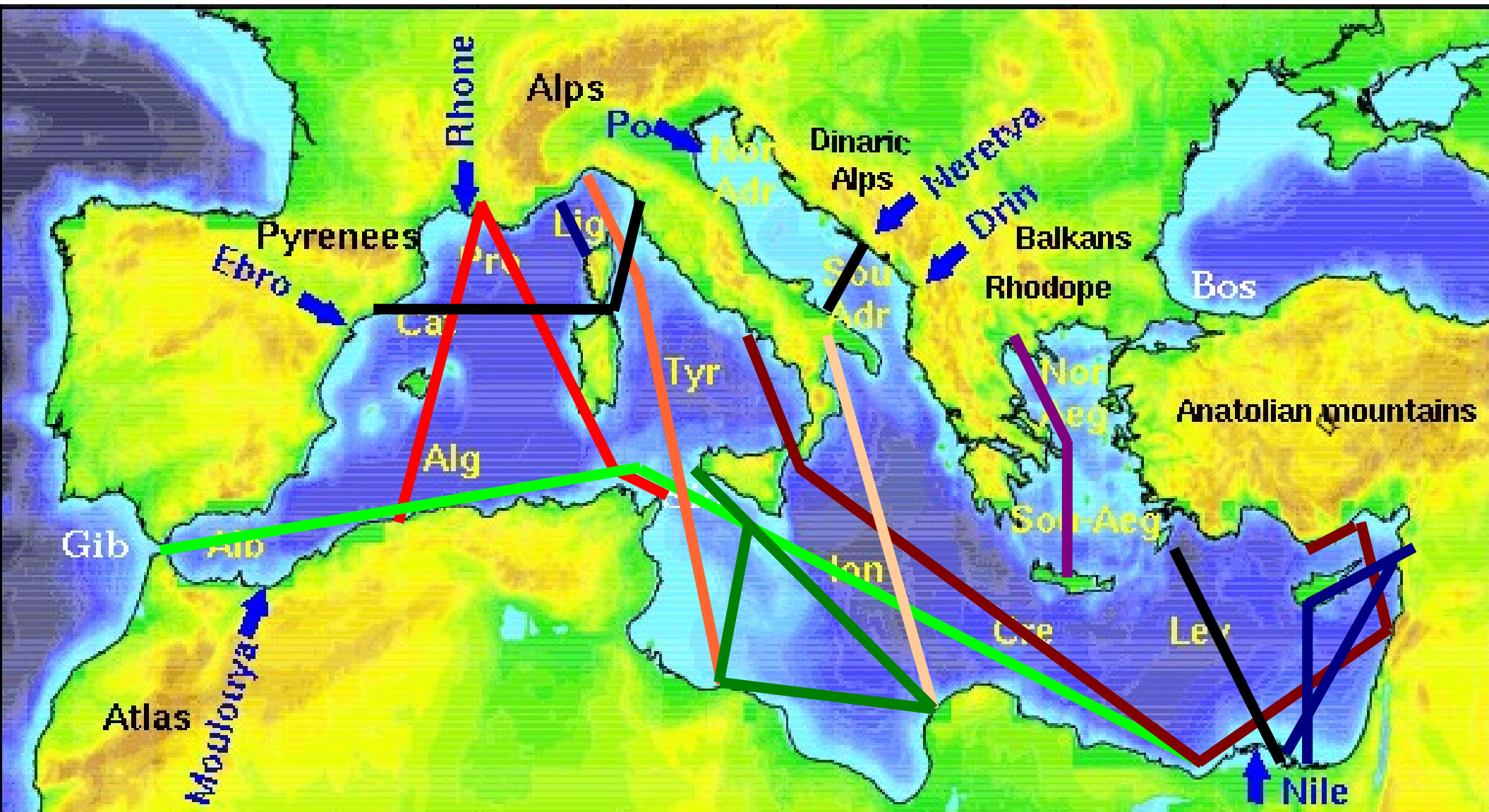
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# Transmed SOO surface measurements :

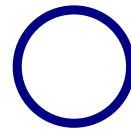
P, T, SSS, possibly XBTs, UCTDs, RH, wind, radiative and turbulent fluxes?  
Priorities to be defined



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# Sea rain measurements



Rain radars



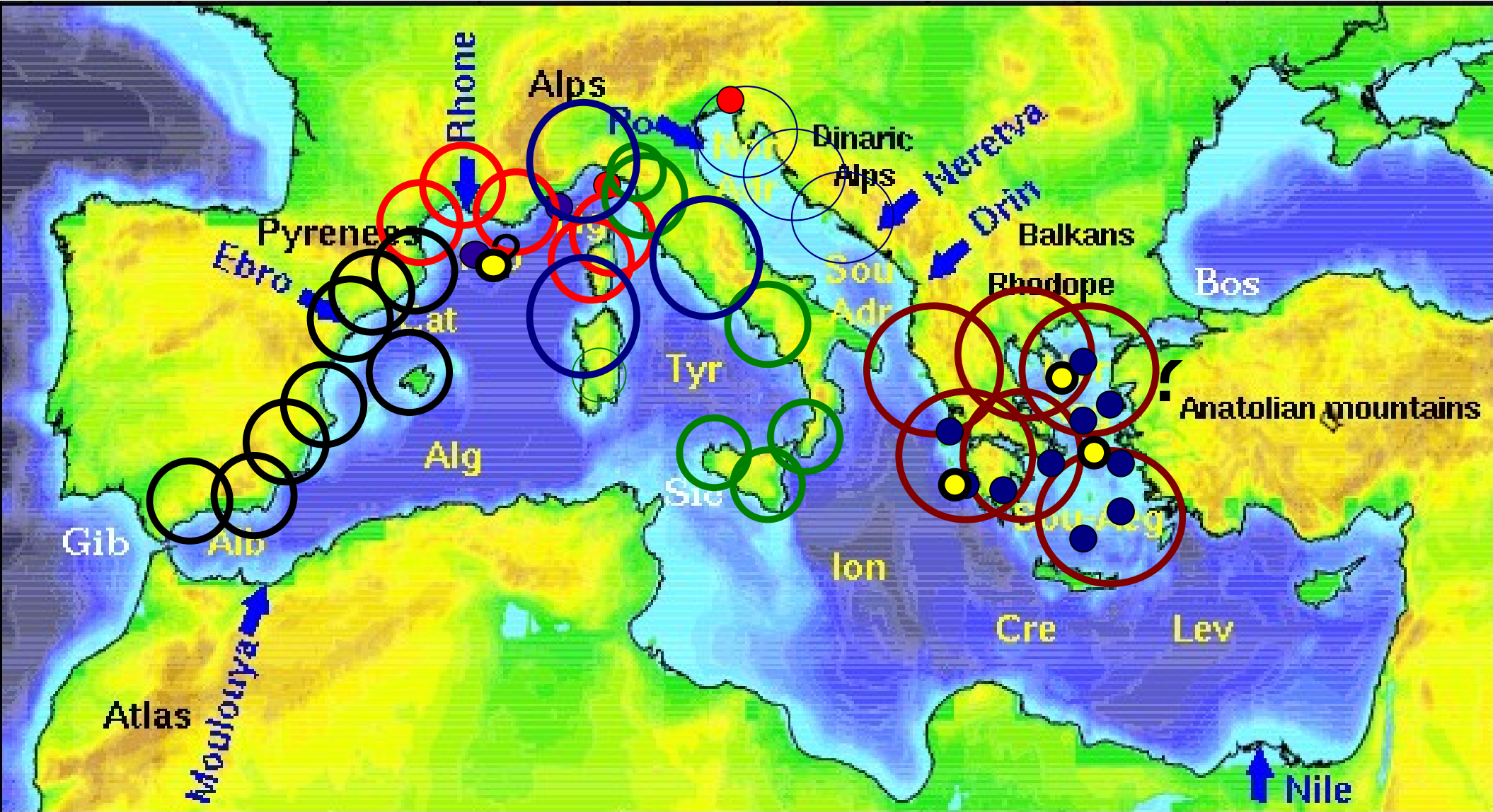
PALs moored rain listener



large buoys with RG



small buoys with RG



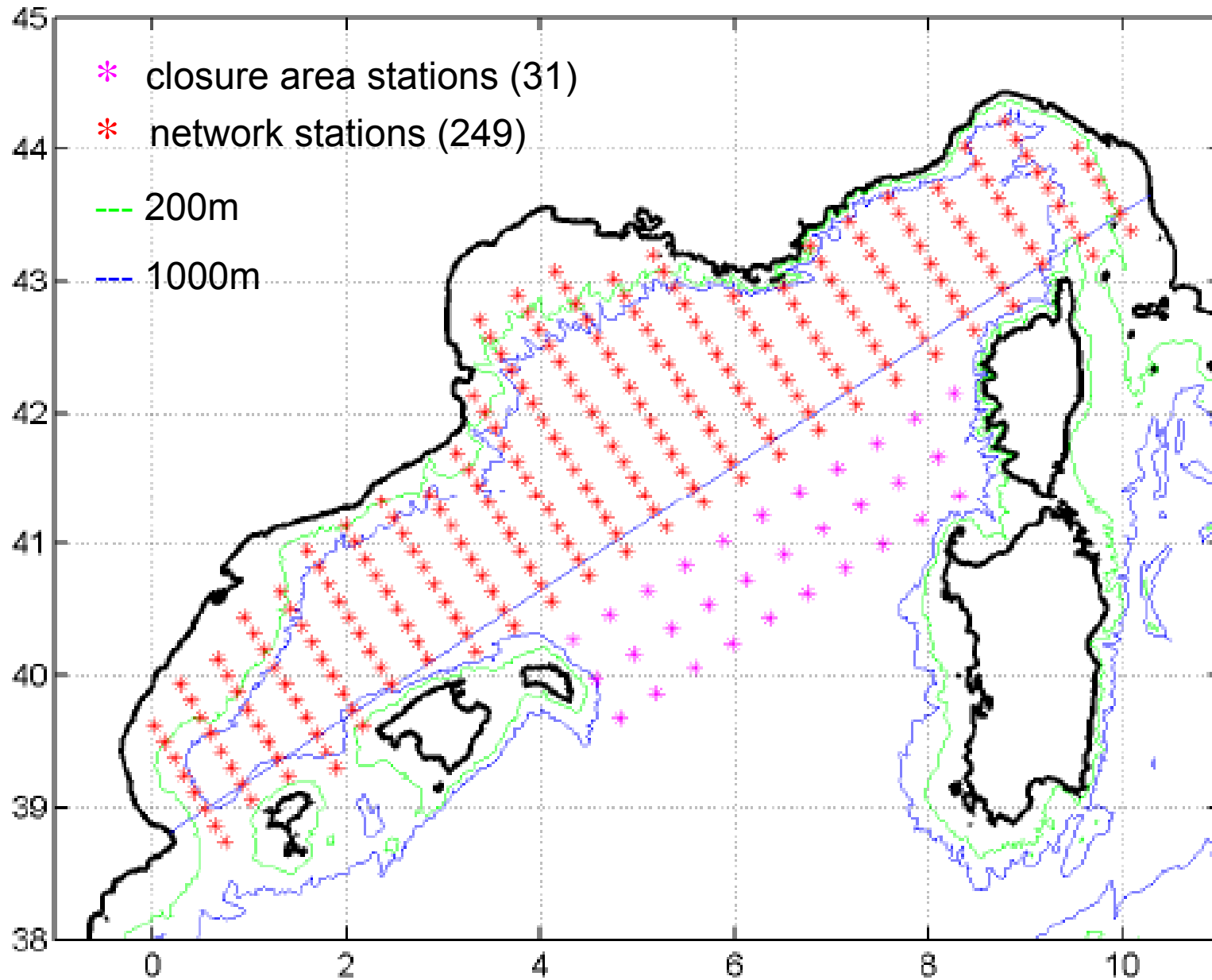
# LOP specificities (1/2)

- Sea rain
  - Shipborne rain radars ?? Technical challenge. Is it worthy ?
  - Rain on buoys : different technologies to be tested and compared.
- Evaporation over sea
  - Evaporation component is weak : Meteo-France, IOF Split, HCMR ?
  - IOF Split evaporation measurements (scintillometer) during EOP...

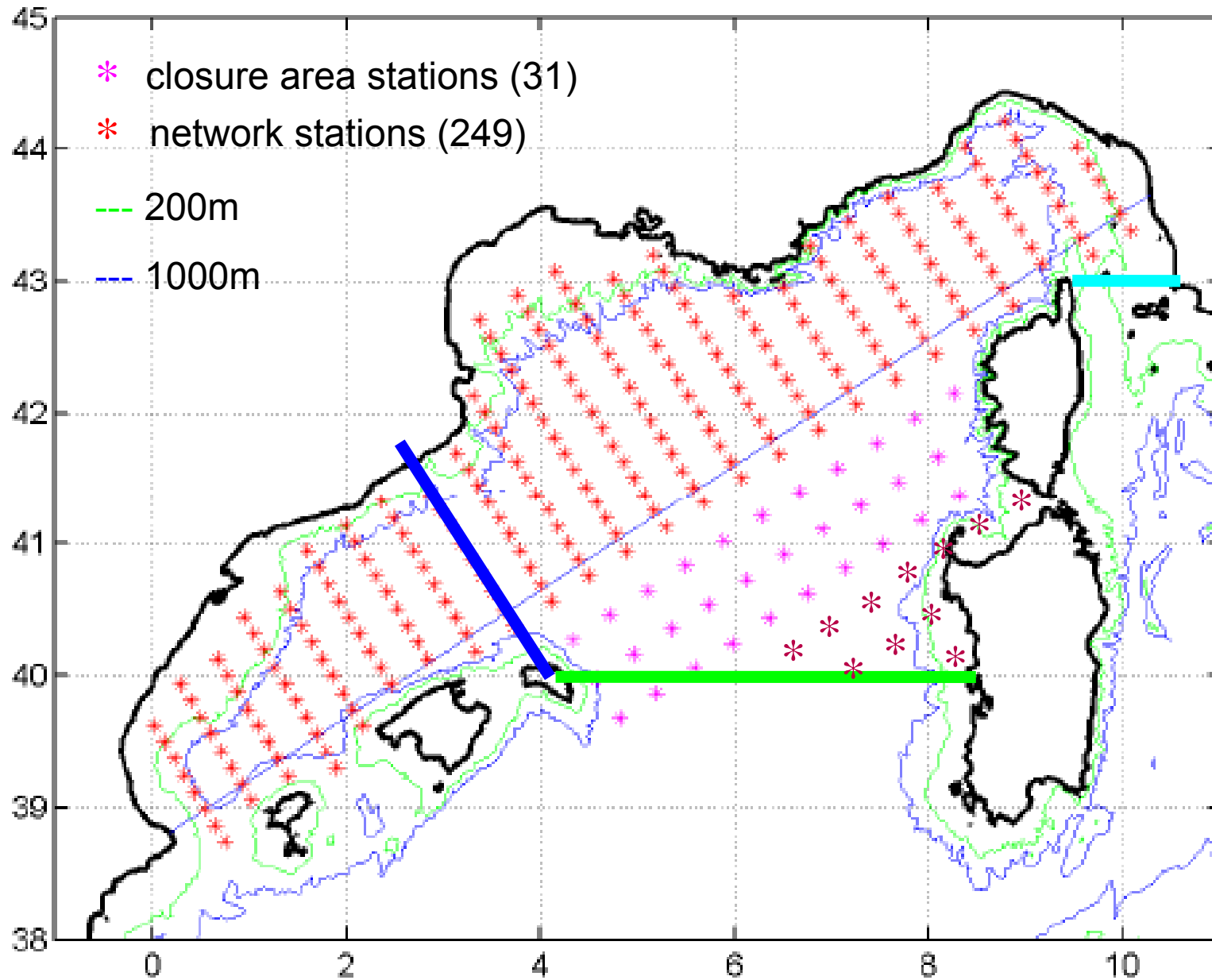
# LOP specificities (2/2)

- Ocean hydrological observations
  - As much as possible, interest to have same strategy and tools in both basins (Eastern, Southern...)
  - 1D network : deep moored CTDs, moored CTD profilers in the DWF zones
  - Argo profilers
  - Thermosalinometers on Ship Of Opportunity (SOO)
  - Yearly CTD (with O<sub>2</sub>) sections across (sub) basins
  - Better monitoring the straits (Dardanelles, Gibraltar, Crete missing...)  
:CTD+O<sub>2</sub>
  - Increase deep mooring network (Balearic Isl)
  - **Coordination of the SOO** (all HyMeX Wgs, then Mermex & Charmex) :
    - **Workshop to plan** •

# SOP specificities : HYMEReX network (1/2)



# SOP specificities : HYMEReX network (1/2)



# SOP specificities : HYMEReX network (2/2)

- This network is important not only for validation, but also to constrain high resolution ocean models (initial and boundary conditions provider)
- Proposal for a change in the **southern boundary**
- Proposal to suppress the south-western part of the network  $\Rightarrow$  implies a new **western boundary**
- Need to add a boundary in the **north-eastern** part of the domain
- Proposal to complete the network in the south-eastern part (\*)
- Why not a classical longitude-latitude network ? Link with modeling strategy ???
- Size of the mesh : need to have a simple ratio between the two main axis, for example 8 miles in the NW-SE direction and 16 miles in the SW-NE direction + in the closure area (16 miles should be sufficient to resolve the geostrophic synoptic ocean circulation geostrophic)

• **Workshop/forum to be organised** •



***Thank you for your attention !***