Round table PS2.2:

Enhanced Observation Period

Olivier Bock (IGN)

Guy Delrieu (LTHE)

Pierre Testor (LOCEAN)

Exercise:

- We have formulated the scientific questions
- We assume that we have the « routine data » (operational – in situ, remote sensing-, research observatories…) at our disposal.
- What are the observation systems we would like to implement additionnally during the 2010-2013 EOP to help answering the HyMeX scientific questions?
- 2 remarks:
  - This can hardly be done independently from the choice of observation sites
  - Strong link with modelling required

EOP or EOPs?

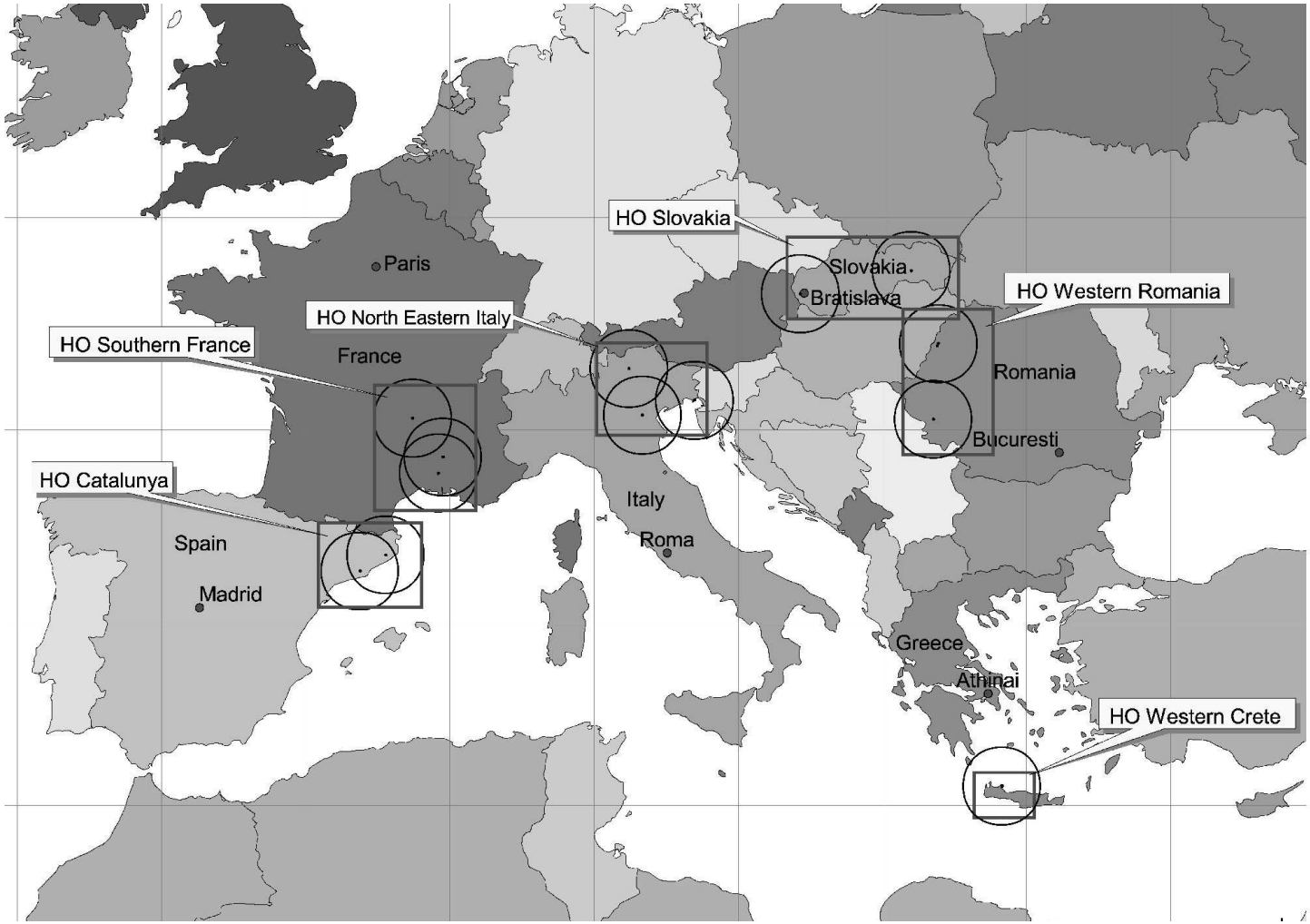
- 5 themes (+1):
  - MedWB and CHydC: budget studies at meso to regional scale, but also process studies
  - HP-FF, IA-SI, CD: local to mesoscale, processes
- Suggestion: consider the following 3 types of EOP
  - EOP1: CHydC + HP-FF + CD (processes)
  - EOP2: MedWB + IA-SI + CD (processes)
  - EOP3: MedWB + CHydC + CD (budget)

spend 2x20 min on each

« EOP1 »: High precipitations and flash floods in relation with CHydC and CD

- Highly localized events, still quite unpredictable: very tough observation requirements in terms of spatial coverage and space-time resolution
- Season: autumn… but not only
- EOP concept, i.e. multi-year enhanced observation with respect to operational observation systems: relevant for hydrology and coastal dynamics (more than SOP)

Network of hydrometeorological observatories (HYDRATE)



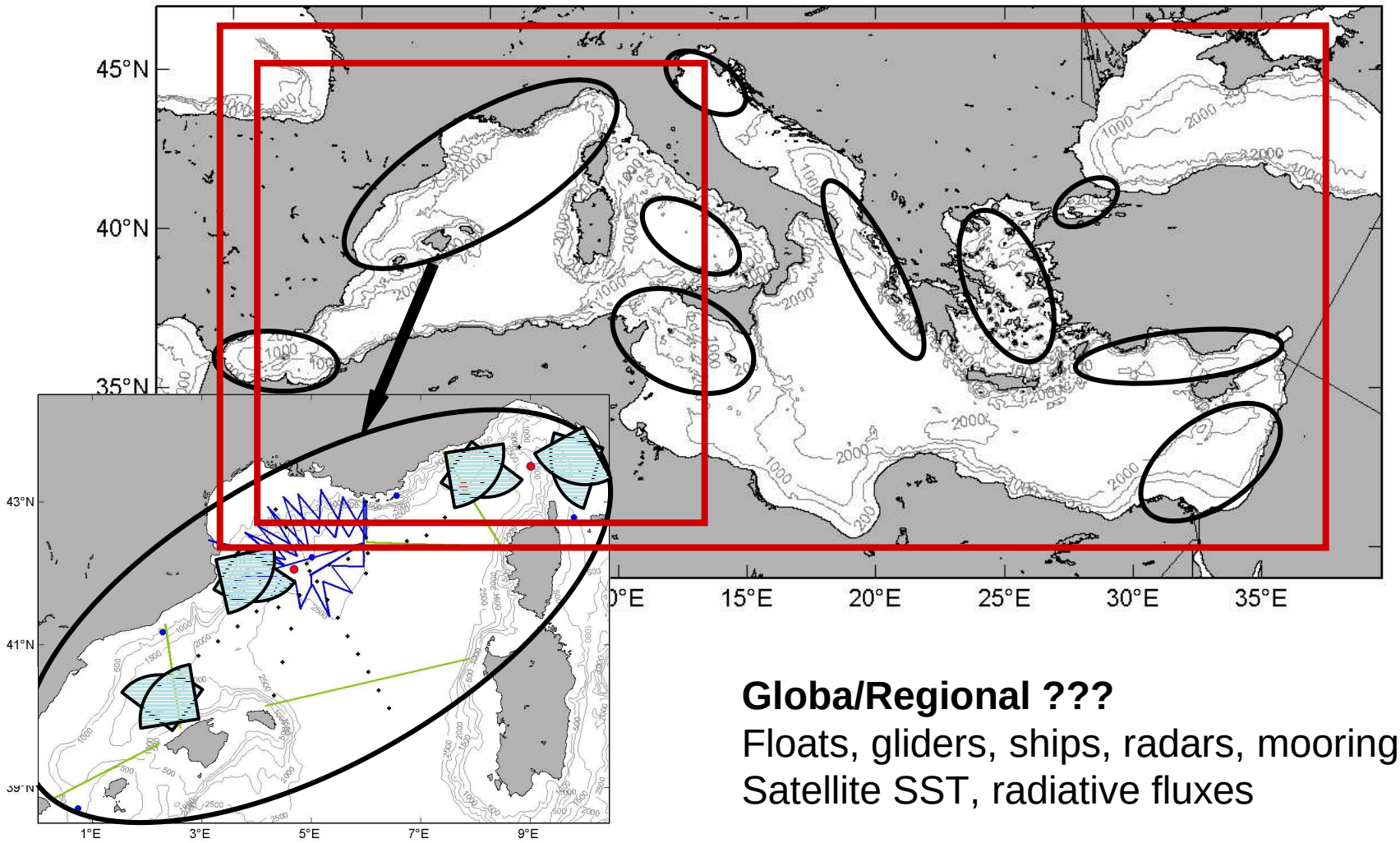
- Start with HYDRATE network
- OHM-CV: extend to Languedoc-Roussillon (include Hérault, Aude, …); relevant for HP+FF, CD, karst studies (MEDYCYS)
- Link with coastal observatories (Rhône, Hérault, Catalunya…)
- « Urban » HOs: Barcelona, Marseille?
- Alpine HOs: Adige, Tessin (MAP)?, Var (FRAMEA)?
- North-African and Eastern Med HOs: OMERE, others? To be developed with IRD

Hydrometeorological and coastal observatories:

EOP instrumentation« distributed », « super-sites »

- Social parameters
- Water vapour: GPS, enhanced radio-soundings (add sites and incr. frequency)
- Wind:
  - Network of wind profilers over the coastal Med
  - Operational Doppler radars
- Rainfall: operational polarimetry, X-pol radars, disdrometer network, lightning...
- Water and energy budgets (flux towers, scintillometry…), soil humidity (local, remote sensing…)
- Hillslope hydrological processes: inventory of sites, their complementarity?
- Karsts (MEDYCYS)
- Rivers and sea: (distributed) hydrometry, sediment transport
- Post-event analysis (hydromet and social)

« EOP2 »: Intense Air-Sea interactions, in relation with MeDWB and CD



Globa/Regional ???

Floats, gliders, ships, radars, moorings

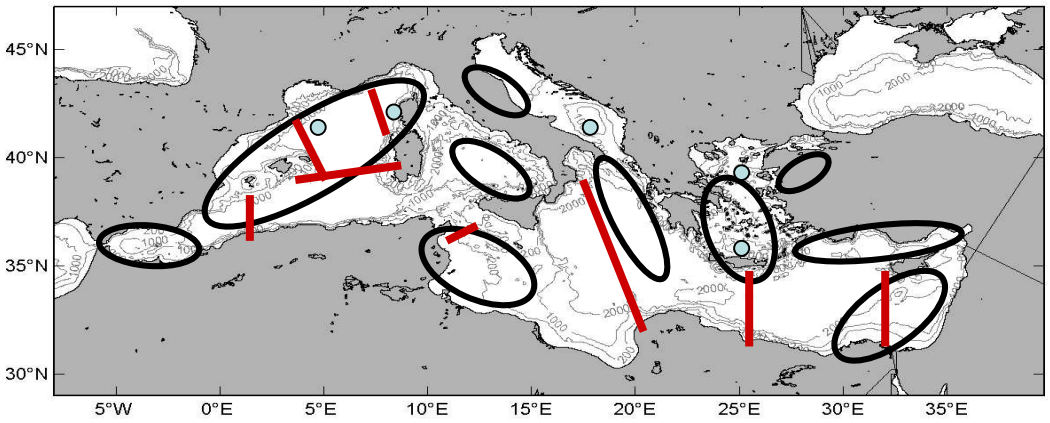
Satellite SST, radiative fluxes

- Focus on the evolution of the mixed layer (T,S >fluxes evaluation)– mapping 4D during 2010-2013 and strait transports (simultaneous).

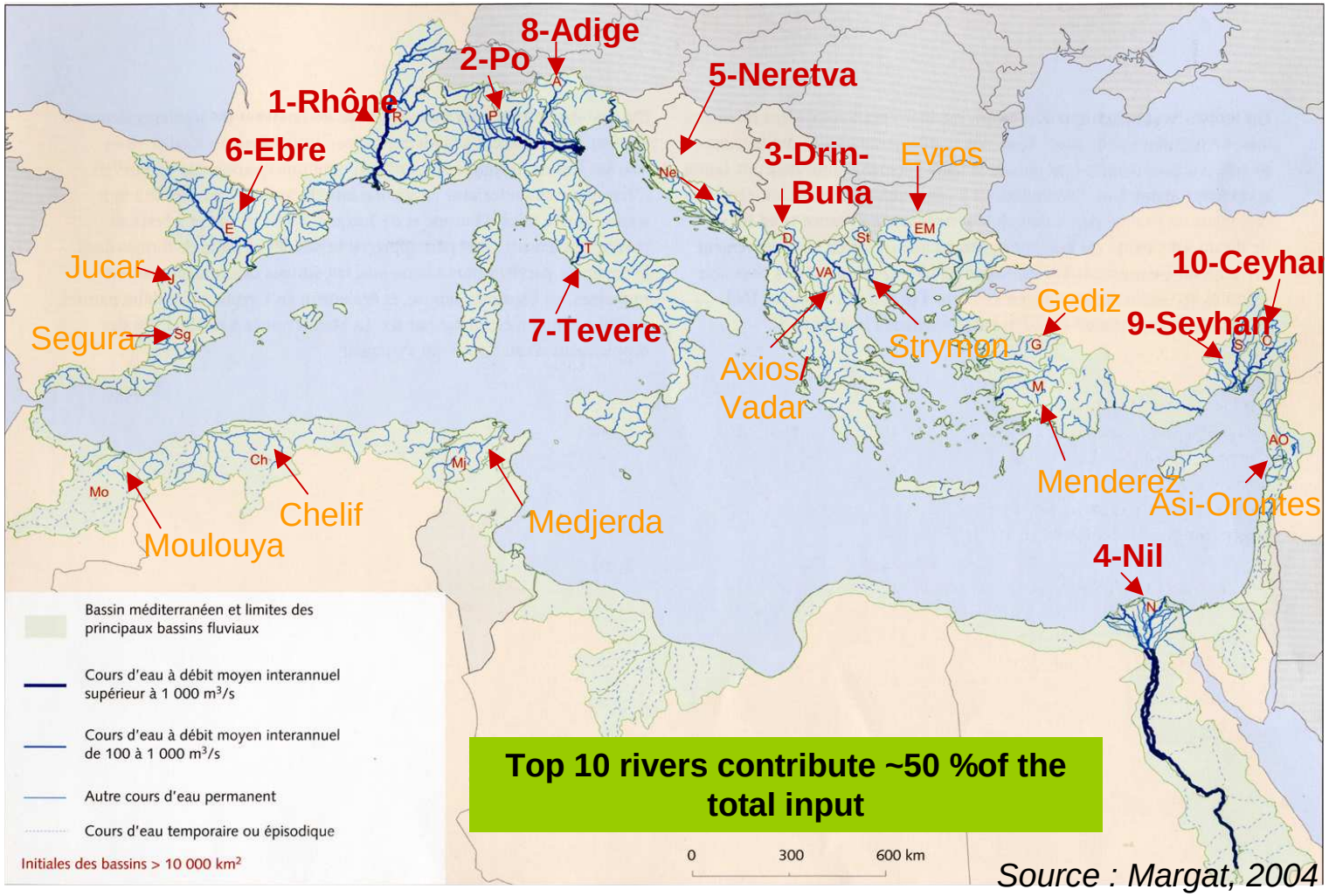
- Extend international collaboration (Greece, Cyprus, Italy)

- R/V cruises (2010) Italy, UK, Turkey, France

Existing moorings (France, Greece, Italy) + floats (basin interior)+ gliders (straits)



« EOP3 »: Mediterranean and Continental hydrological cycles + CD (budget)



Source : Margat, 2004

Instrumentation

- Water vapour: GPS + radio sounding + LIDAR
- Wind: profiles over (is)land only in the coastal area
- Rainfall over the Sea: operational radar networks (islands? North-Africa?)+ satellite
- Continental hydrological budgets for nested catchments flowing into the Med Sea (SIM Rhône? Others?)
- River discharge: big rivers and coastal rivers, are operational discharge products enough?
- Groundwater discharge to the sea: a selection of aquifers (karstic or not) on the N and S; geometry characterisation; geochemical tracers…
- Air-sea fluxes, mixed layer depth (T, S): floats; cruises; gliders ; moorings ; radars ; satellite
- Straits transport : cruises, moorings, floats, gliders

MedWB, cont.

- Which box?