

Round Table PS 2.1

« **Special Observing Period** »

SOP : period during which dedicated instruments, research vessels and aircraft are deployed to fulfill specific scientific objectives

Organization : a series of successive periods in the Mediterranean (Fall-Winter 2011-12 + Summer 2012)

Coordination with EOP & LOP

Round Table PS 2.1

« **Special Observing Period** »

- Heavy Precipitation Events
- Air-sea interactions
- Oceanography
- Hydrology

!! Only an overview !!

Modeling and predictability : constraints on data

- **Data assimilation (atmosphere & ocean) :**
 - Data transmission in real time :
assimilation
- **OSSEs :**
 - Which data are the most important ?
 - Targeting : where and how to sample ?

LOP-EOP links

- Radar composite over W Mediterranean (France, Spain, Italy, + *Algeria ?*, ...)
- *Oceanographic + meteorological (incl. small radar ?) + ... equipements on trans-Med VOS ? (incl. technical developments)*
- *Survey of the straits at Mediterranean scale*
oceanic pre-conditionning phase survey
(fall 2010 ?)

Heavy Precipitation Events

(Fall 2011 ?)

& Cyclogenesis

(Winter 2012 ?)

- **Upper-level dynamics** (synoptic scale, upstream : mid- or subtropical Atlantic) from enhanced RS network and targetted aircraft observations
- **4D humidity fields** feeding HPEs from wind, temperature & humidity profilers (Balearic isl. to Corsica / Sardinia), Soil moisture (→ hydrology)
- **Rainfall mechanisms** : in situ microphysics, raingauge and disdrometer networks, polarimetric radars

- **HPE space-time structure** : operational (+research ?) Doppler radars, dedicated K- or X-band radars in specific regions , airborne Doppler radar over the sea & complex terrains, lightning detection network
- **Mesocale « hot spots »**: Hydrological observatories, radiosounding stations for mesoscale budgets, surface & boundary layer measurements
- **Rôle of aerosols** : CCN & IN, rain efficiency

Air-sea interactions

- High resolution satellite observations :
SST, OHC, surface wind, fluxes ...
- RV measurements of surface and mixed layer, sea state, wave spectrum
- **Fluxes of sensible and latent heat, momentum** (friction) and **precipitation** (fresh water) from buoys, RV and/or aircraft
- Constant level **balloons, Aeroclippers**
- **Marine atmospheric boundary layer** structure and evolution

Oceanography

- **3 SOPs** / 1 year 2011-2012
- **DWF** : fall, winter (Feb-Mar, link with MERMEX ?), summer (link with CHARMEX ?)
- **Air-sea fluxes** : fall, winter
- **Areas** : NW Med., Aegean/Rhodos , Adriatic (SOP/XBT), Black sea/Turkish straits
- Need for **pre-conditions** (2010) (EOP?)
- Simultaneous CTD **monitoring of the straits** (hydrological monitoring : LOP)

Hydrology

- **EOP** : long term series at « high » spatial & temporal resolutions for selected catchments, SOP = 1st EOP phase
- **SOP** :
 - **QP estimates** from radars, and multi-sensors (incl. satellites)
 - Verification of **QP forecasts** over specific regions
 - Appropriate **resolution** ?

- **Hydrologic experiment at the hillslope scale :**
 - Selected catchment(s)
 - *Rhône river basin*
- **Landscape characteristics :**
 - High-resolution topography, geology, soil, land use, vegetation, ...
 - Intensive « post-flood » campaigns
 - Unified methodology

- **Remote sensing techniques :**
 - Discharge from height, velocity, bathymetry
 - MW L-band observations
 - Light and mobile hydrometry equipment
 - Geophysics (electric & magnetic fields)
- ***Distributed hydrometry :***
 - *Discharge measurements at many places*
 - *spatial characterization during HPE & FF*
- **Karst and flooding river interactions**
- **Sediment yield and pollutant fluxes**

Recommendations

- Authorizations (dropsondes, oceanographic work, autonomous instruments)
- Fundings & authorizations for real-time data transmission, assimilation
- Training workshops
- Strategies, Ocean-Atmosphere-Hydrology coordination, Pis
- ...