HyMeX

http://www.hymex.org/

SOP/EOP Implementation Plan
Overview for the NW Med

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--- Target Areas of the first EOP/SOP series

- Hydrometeorological sites
- Key regions for dense water formation and ocean convection

SOP1 in order to document:
- Heavy precipitation and Flash-flooding
- Ocean state prior the formation of dense water

SOP2 in order to document:
- Dense Water Formation and Ocean convection
- Cyclogenesis and local winds

Observation Strategy (NW Med TA)

Feb. Apr. 2013
Feb. Apr. 2014

EOP
SOP1.1 SOP2.1 SOP1.2 SOP2.2

Sept. 2011 Mar. 2015
As initial development of MCS usually occurs offshore in areas which are basically void of observations, fulfilling these observational gaps will be one of the most challenging tasks of HyMeX. For that, several observational platforms will be operated during the SOPs/EOP:

✓ **Instrumented balloons** (boundary layer pressurized balloons and aeroclippers) launched from upstream sites (Balearic islands) to complement the documentation of low-level inflow. *(TTO1b)*

✓ Two **island supersites** (Corsica and Balearic Islands) will be used to characterize the far upstream conditions for continental HPE, partially based on wind profiler, lidars network. *(TTO1c,TTO1e)*

✓ Increase the operational RS to **4/day** in sensitive areas during SOP, and to **8/day** during IOP *(TTO1a)*
**Upstream monitoring**

- Characterization of the Mediterranean inflow (structure, dynamics, thermodynamics) with the SAFIRE ATR42 (dropsondes, Water vapor DiAL LEANDRE 2, aerosol, Turbulent fluxes, …) aircraft (TS5a)

**Air-sea interaction and monitoring of water masses and marine/ocean boundary layers**

- Documentation of the air-sea fluxes with the KIT DO128 aircraft (TS5b)

- The R/V Le Suroit could be positioned in the upstream area of the atmospheric event in order to document the ocean (CTD, XBT) and the atmosphere (RS, vertical profiles of T,q,U,P)(TS6a)

- An array of ~ 300 CTD stations during a 30-day cruise with the R/V L’Atalante during a whole year (TS6a)

- Gliders (TT04b)
Description of the structure of the low-level inflow coming from the Mediterranean Sea a low-level upstream super-site near Montpellier, GPS transects (TS4b)

Special RS, Doppler and backscatter lidars, GPS, UHF wind profiler, ceilometer and surface station

The microphysical processes within clouds and precipitation systems

Research aircraft

NRL/P3-ELDORA

SAFIRE F20
The microphysical and electrification processes within clouds and precipitation systems

For some of mobile radars, positioning in other sites (CA, LG) prior to the precipitating event envisaged.

Lightning instrument
- VHF mapper
- DLR-LINET
- Field mills
- Induction rings
- Acoustic array

(TTO1f)

(TTO1h)
Observation Strategy (NW Med TA)

Real-time atmospheric models to guide observation deployment (available at the HOC)

(TS7a)
Enhancement of observations on Hydrometeorological observatories/sites, super-sites and pilot-sites

For the CV site (TS3c)

Hydrology and hydraulic response to HPE (TTO2b)

Karst aquifer (TTO2c)

coastal multi-layers sedimentary aquifers (TTO2c)

Erosion, sediment (TTO2b)

Med vegetation, irrigation (TTO2b)