PS2-4
Modelling strategy

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1- Identify the modeling platforms and products …

Climate models

- To build on the many Eu initiatives (CIRCE, ENSEMBLES, SESAME, ..)

- To use the HYMEX data set for specific and well focussed validation

- To write the implementation plan accordingly

1- Identify the modelling platforms …

Limited area models

- ☐ Amosphere
  - ■ 5/10 km : ALADIN – ALARO – BOLAM – COSMO / MED – ETA – LMD-Z – Reg-CM - PROMES
  - ■ 2km :   AROME – MESO-NH – MOLOCH –COSMO XX MM5 – WRF – COSMO / ART
- ☐ Ocean
  - ■ Med basin: OPA/NEMO, MIT, POM, OM
  - ■ Sub-basin: SYMPHONIE, POM, ROMS, MARS, NEMO
  - ■ Storm surge models
  - ■ Wave models (SWAN, WAM, WAVEWATCH)

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1- Identify the modelling platforms …

Hydrological / Land Surface Models

- Reg. Hydrological cycle, flood: SIM
- Flash flood: TOP MODEL, AF-DEF
- SVAT: SURFEX, ORCHIDEE, KIT
- Process Models : SEVE, LIQUID, MARTHE (karstic areas)

Lack of contribution from distributed hydrological modelling especially for flash floods

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1- Identify the modelling platforms …

Limited area Coupled /Integrated models

- ☐ Atmosphere/Ocean
    - ■ To be developed
- ☐ Atmosphere / Hydrology
    - ■ ALADIN / SURFEX / SIM (off line)
    - ■ MESO-NH / SURFEX / TOP MODEL (on line)
- ☐ Atmosphere /Ocean/ Hydrology
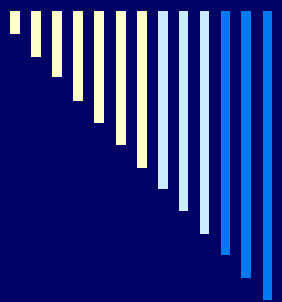   - ■ To be developed
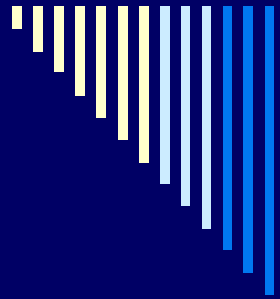
2. Identify real time systems … (limited area systems)

- ☐ Atmosphere
  Non_Hyd., 2/4 km : AROME MOLOCH COSMO? MM5? WRF ?
  Which group? Common geographical domain ?

- ☐ Ocean
  - ■ Basin scale, 5/10km :MERCATOR , MFS, HCMR
  - ■ Sub basin scale, 1/5km : 11 nested shelf models
  - ■ Wave models

- ☐ Hydrology
  - ■ SIM (France)
  - ■ TOP Model (Cévennes Area?)

- ☐ Ensemble Predicton Systems
  - ■ 10 days global Atmos: EPS : ECMWF, PARP, TIGGE
    Ocean : MFS Ens
  - ■ 72 h 10km :LEPS : COSMO ?
  - ■ 30 h 2km : SREPS : poor man ensemble

2. Identify real time systems ...

- ☐ Atmosphere
  Non_Hyd., 2/4 km : AROME MOLOCH COSMO? MM5? WRF ?
  Which group? Common geographical domain ? Leading time?

- ☐ Ocean
  - Basin scale, 5/10km :MERCATOR , MFS, HCMR
  - Sub basin scale, 1/5km : 11 nested shelf models
  - Wave models

- ☐ Hydrology (based on forecasted precip/soil moist.)
  - SIM (France)
  - TOP Model (Cévennes Area?)
  - BOL Univ. Contribution?

- ☐ Ensemble Predicton Systems
  - 10 days global Atmos: EPS : ECMWF, PARP, TIGGE
    Ocean : MFS Ens
  - 72 h 10km :LEPS : COSMO ?
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Real time … How to use the products to guide the exp.?

Atmos/Hydro:

Lessons from MAP-D-PHASE (COPS-ETREC)

Ocean:

No past experience

- Key variables
- Common format plots (grads)
- Visualisation platform (essential!)

Provides a good framework to start with !!

Needs to be adapted and extended to the ocean

3. Validation / Intercomparison

- Define Metrices for
  - Systematic validation with Standard Parameters (Precipitation, Runoff, SST, ...)
  - Case studies focussed on SOP golden days (Many parameters, case dependent, …)

- Modelling intercomparison
  - SOP/EOP for real time models and LOP for clim. models
  - Golden days for all models
  - Many technical pb (to be discussed later)

- Need of a specific effort for
  - surface fluxes parametrisations over the ocean and continent
  - Deep water formation
  - Water exchange at Gibraltar strait