PW3.2 - High-resolution modelling (incl. data assimilation) for intense events

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General frame

- HyMeX numerical approaches:
  - Hydrological
  - Atmospheric   Coupling (continuous & feedback)
  - Oceanic

HyMeX numerical plans

- Two basic participation modes:
  - Real-time availability of predictions (TS7a)
  - Research-mode operations (TTM)

- Needs of the (HMO) models:
  - Better parameterizations (HiRes)? (TTM1c)
  - New (oceanic non-hydrostatic) models ?
  - Adoption of HiRes: Better observacions. Is HyMeX "Observation Task Team".

MAIN DISCUSSION ISSUES

- Inventory of available models

- Specific spin-up plans.

- Predictability studies

- Verification

Inventory of available models

- A questionaire will be prepared to complement the information gathered by TS7a, specially for research mode models

- Raised hands: Meteo-hydro and Meteo-ocean models (TTM1b) already available

- Official request to access TIGGE products in real-time and specific request of parameters

- TIGGE-LAM products will be attempted

Specific spin-up plans

- HyMeX numerical D-Phase:
  - Hincast of relevant past events.
    - These should be as much as possible:
      - interesting for HMO
      - realistic in terms of available observational and DA/FC means

  - Useful to converge to common exchange:
    - parameters
    - data formats (EU agreements)
    - graphics (eg. MAP D-Phase)
    - (Discussion) grid
  - Strong need to coordinate with TTM4(a) on Data Assimilation

Predictability

- Real-time availability (targeted ensembles?)
- Research operations:
  - Quantify main sources of error in the prediction of HyMeX-relevant phenomena:
    - IC and BC error
    - Model error
    - Coupling between HMO. E.g., How to deal with overspread of EPS precipitation predictions over small catchments
  - Representativity of EPS findings: few extreme HyMeX SOP cases

Verification

- New task team?

- Use of common scores (and software?). Consider WMO recommendations

- Use of leading-edge gridded datasets (ECMWF regional obs analysis including non-GTS data).

SEND YOUR CONTRIBUTIONS FOR THE *IMPLEMENTATION PLAN*

3.2 Modelling task team (TTM)

TTM1 - High-resolution (coupled, ensemble) modelling platforms for intense events
- TTM1a - High resolution ensemble hydrometeorological modelling for quantification of uncertainties
- TTM1b - High-resolution coupled ocean-atmosphere modelling for process studies
- TTM1c - Improvement of parametrizations for high-resolution models using dedicated SOP/EOP observations

TTM2 - Multiscale modelling of the continental surfaces
- TTM2a - Whole Mediterranean basin hydro-meteorological modelling
- TTM2b - Distributed hydrological modelling over medium to large river basins
- TTM2c - Groundwater modelling

TTM3 - Regional Climate modelling (Atmosphere-Ocean-Land)
- TTM3a - Simulations of the SOP/EOP/LOP from year 2010 to YYYY with a focus on the SOP year (2012-2014) simulations using Regional Earth Model and their components
- TTM3b - Hindcast simulations 1960-2010(20)
- TTM3c - Regional climate change scenarios - MedCORDEX
- TTM3d - Diagnostics, indicators, pre/post-processing, integrated analysis
- TTM3e - Improvement of physical parametrizations for Regional Climate Model

TTM4 - Data assimilation
- TTM4a - Atmospheric data assimilation
- TTM4b - Ocean data assimilation
- TTM4c - Hydrological data assimilation