

# MAP FDP

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- What is an FDP?
- MAP specific issues
- Project status

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# What is an FDP?

Forecast **D**emonstration **P**roject

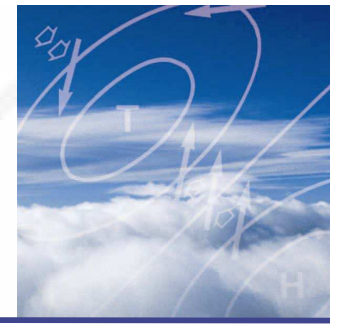
**WWRP** instrument

- > **Forecast** of weather of international relevance
  - high-impact weather
- > Clear evaluation protocols
- > Expectation of success
- > Clear advance in *operational* forecast.

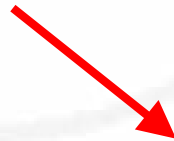
**4th Phase of MAP**

# MAP History

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Preparation Phase



Experimental Phase, 1999 SOP



Analysis Phase



Demonstration Phase

**MAP Forecast Demonstration Project**

# MAP specific issues



- ◆ *High impact weather in the Alps*
  - heavy precipitation
  - Storms
  - Avalanches
- ◆ No MAP-specific *operational* tools
  - ‘....demonstrate benefits from improved understanding and enabling technologies’

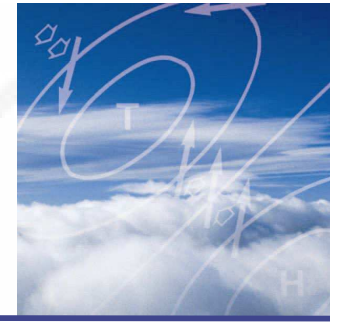
# MAP achievements

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- ◆ Operational use of high-resolution forecast model (MC-2)
- ◆ Radar composites to track the cells
- ◆ Mechanisms for heavy orographic precipitation
- ◆ Improved knowledge on BL processes
- ◆ Hydrological processes & models
- ◆ Ensemble modelling: selected cases

# General Goals



- ◆ Demonstrate ability for improved forecast of heavy precipitation in the alps
  - High-resolution atmospheric modelling
  - ensemble forecast technique
  - Radar data (assimilation)
  - Hydrological modeling
- ◆ End users involved (end user needs, e.g. probabilistic forecasts)
- ◆ Evaluation protocols (yet to be determined)

## D-PHASE....



# Demonstration of Probabilistic Hydrological and Atmospheric Simulation of Flooding Events in the Alps



# Project status

- ◆ Working group approved by MSC, Jan '04
- ◆ 1st workshop Zurich, May '04
- ◆ Participants
  - MeteoSwiss (CH), DWD (D), MeteoFrance (F), UK Met Office (UK), Env. Canada (CA), UGM (I), ARPA-Em.Rom (I), ARPA-Liguria (I)
  - Univ Paul Sabatier (F), IAC-ETH (CH), Univ Trento (I), ISAC-CNR (I), Univ Lublijana (SL), Univ Aquila (I), Univ Brescia (I), Univ of Vienna
  - DLR (D), EUCOS (EU)

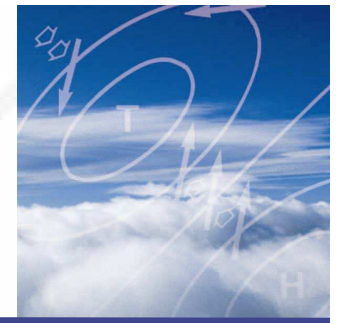


# Project status, ff



- ◆ First informal commitments, Aug '04
  - Atmospheric models (Arôme, LM-K, MOLOCH, Unified Model, GME, MM5 (WRF))
  - hydrological models
  - VERA analysis (incl. additional stations?)
  - EUCOS: extra soundings?
- ◆ End user workshop, Nov '04
  - raising interest
  - end user needs
  - prototype end users?
- ◆ Proposal WWRP, spring '05

# Time table



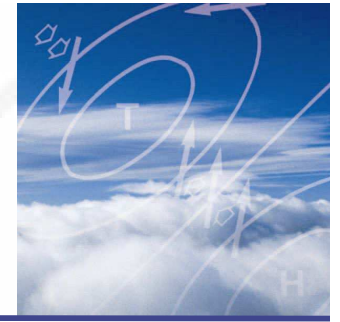
- ◆ Evaluation etc.
  - ◆ **Demonstration period:**
  - ◆ Test chain ready
  - ◆ High res. models tested:
  - ◆ Hydrol. Models tested:
  - ◆ Test cases defined:
  - ◆ Definition of user needs:
  - ◆ Set up of organisation
  - ◆ Financial resources:  
Start  
application
  - ◆ Proposal WWRP:
  - ◆ Start:
- 2007
- Aug to Nov 2006** (Jun/Jul desirable)
- summer 2006
- end 2005
- end 2005
- May 2005
- May 2005
- end 2005 (done)
- summer 2005
- asap (dependent on what/where/etc)
- spring 2005
- May 2004

Time



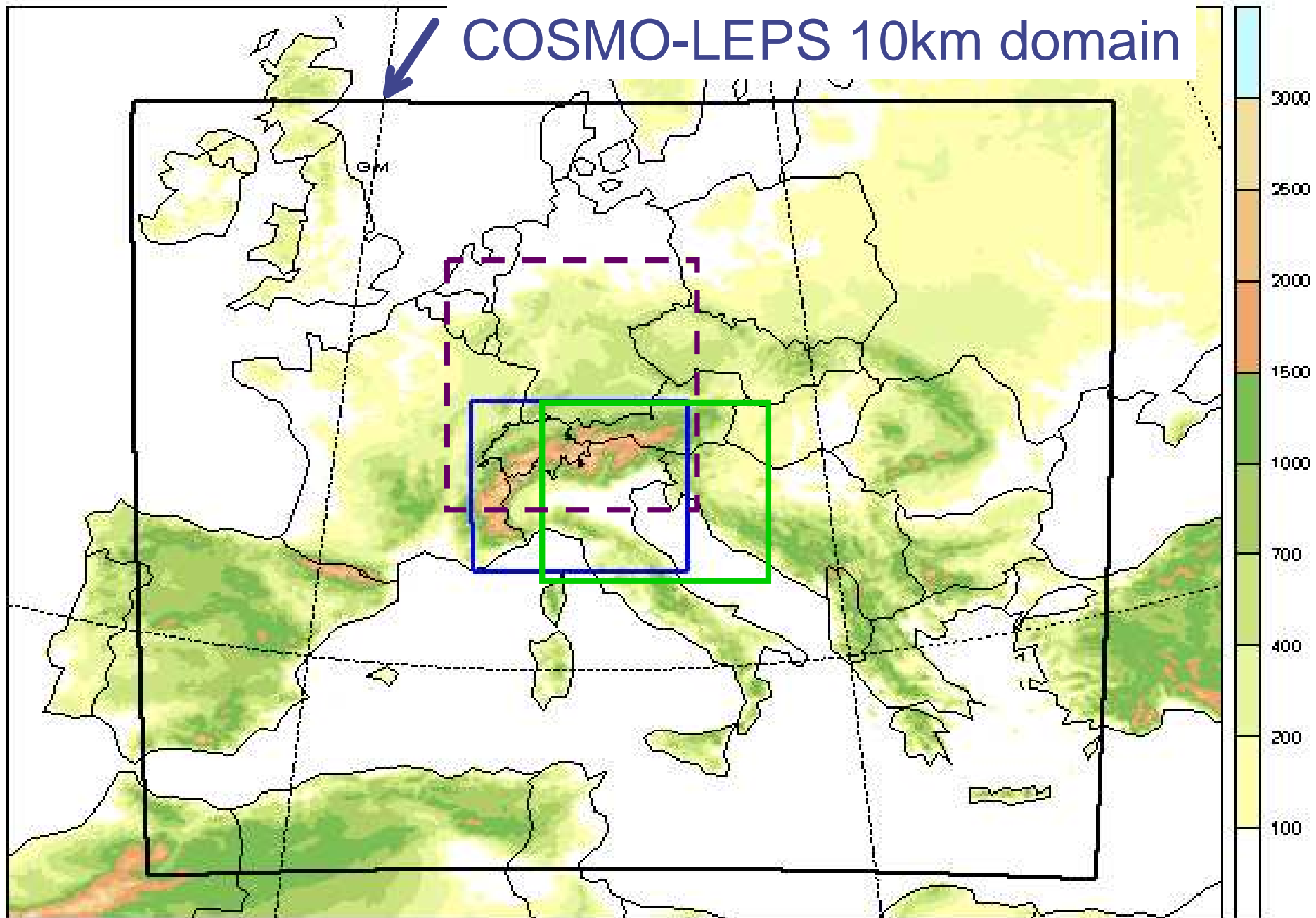
MeteoSchweiz

# Strategy for D-PHASE

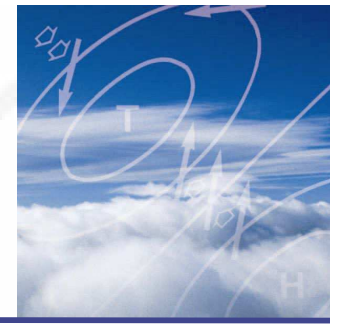


## Atmosphere - Multi-component approach:

1. Local EPS systems (COSMO-LEPS, LAMEPS, PEPS,..)
  - 3-5 days probabilistic forecast
  - likelihood of 'event'
2. 'standard' deterministic models at high resolution (1-3km)
  - short-range, targeted
  - coupled hydrological models
  - latest radar information assimilated
3. A possible 'micro-LEPS' made up as a poor man's EPS from the above
  - probabilistic information on hydrol. patterns.



# Strategy for D-PHASE

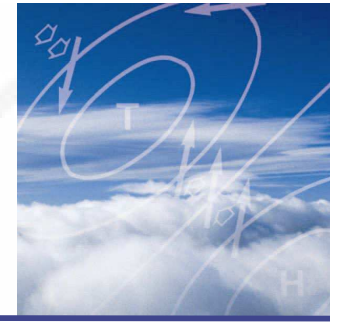


## Hydrosphere:

1. Hydrological models
  - distributed
  - coupled?
2. Assimilation of latest information
  - radar composites
  - rain gauges
3. Probabilistic forcing
  - from atmospheric models
  - from radar (obs) uncertainty

# Strategy for D-PHASE

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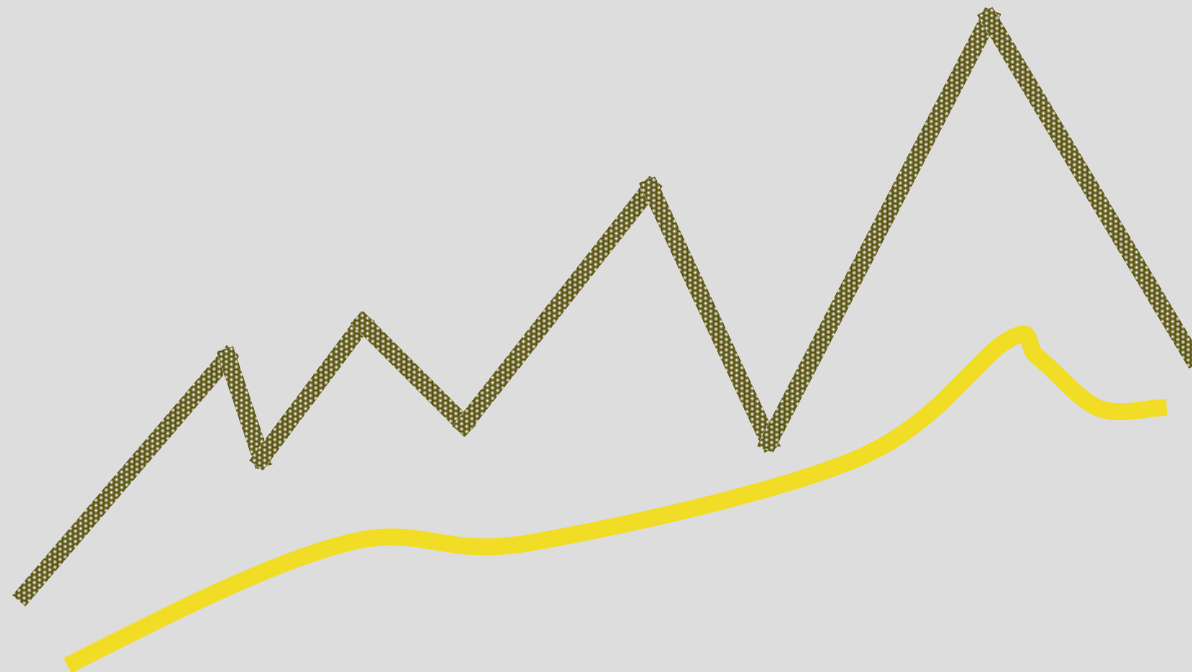


## End users:

1. Authorities
  - civil protection
  - river/lake management
2. THEIR needs
  - thresholds
  - cost/loss



# D-PHASE





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**Thank you...**