# Plans for convection permitting ensemble and DA in Italy

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# Outline

- KENDA/LETKF for ensemble and deterministic analysis

- COSMO-IT-EPS plan

  - A prototype for the development is tested in the Hymex Project (COSMO-H2-EPS)

# Plans for the ensemble

- Develop a 2.8 km ensemble over Italy (COSMO-IT-EPS)

- IC based on KENDA

  - Cooperation with MCH

  - Participation to the KENDA PP

- BCs from COSMO-LEPS/COSMO-HYBEPS and/or from CNMCA-EPS

- Physics perturbations:

  - test perturbed parameter, stochastic physics, …

- ARPA-SIMC: use the Hymex implementation for the first tests with KENDA

# Plans for KENDA

- Test the use of KENDA both for ensemble ICs and for the deterministic analysis
  - Participation to the KENDA PP
  - Cooperation with MCH
- Implementation of KENDA at ECMWF
- Tests on a dedicated Special Project
- Cooperation points:
  - Methods to generate LBC perturbations
  - Idealised cases with KENDA and tools development
  - Ensemble size
  - IC for deterministic analysis

# Hymex implementation – reference run

- Hymex SOP: 6th Sept – 5th Nov 2012

- Many models available, among which AROME-EPS 2.5km

- Many observations available (and many deployed on IOPs)

- COSMO-H2-EPS set-up:
  - 2.8 km, 50 levels
  - 10 members
  - IC and BC COSMO-LEPS
  - 1 run daily at 12 UTC
  - 36h forecast range
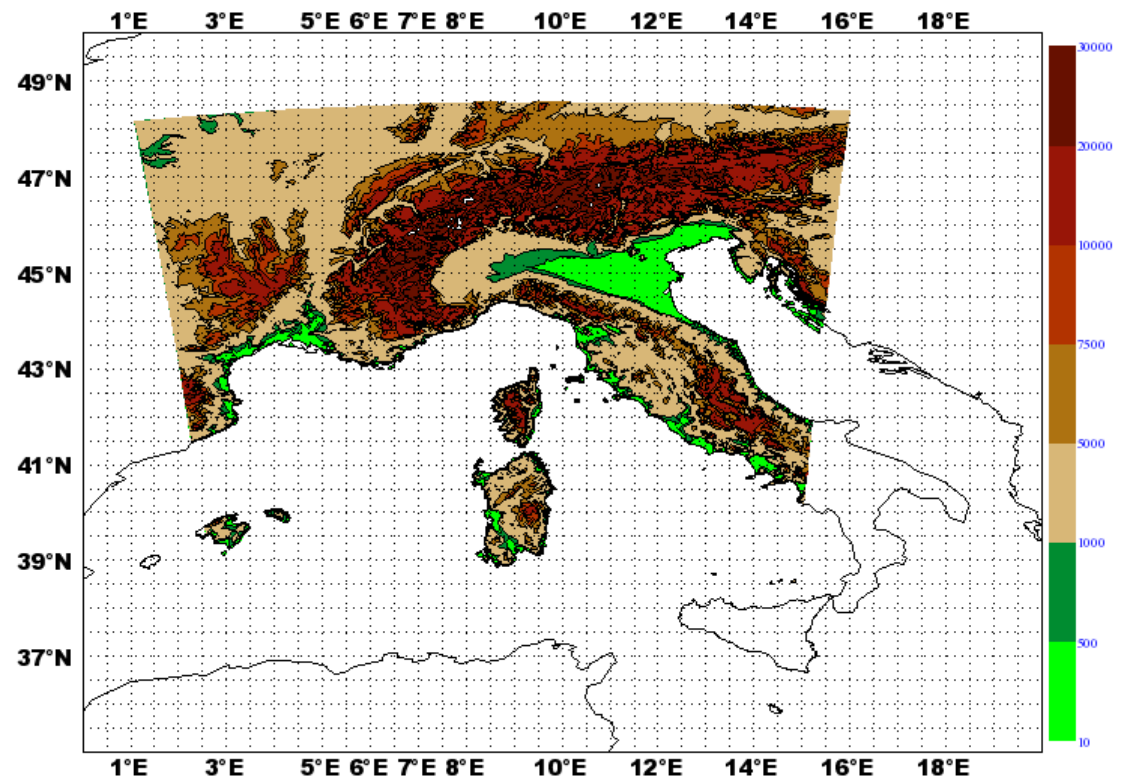
# Plans for the development in the Hymex framework

- Use KENDA to provide IC perturbations

- Re-run COSMO-H2-EPS on the Hymex period with the new set-up to assess the impact of the KENDA-based IC perturbations (cooperation with MeteoSwiss, Switzerland is fully included in the domain)

- Test the perturbation of the physics tendencies

- Compare with AROME-EPS 2.5km on the Hymex domain