

Summary of WG6 activities

**Massimo Milelli
&
all the group members**



Outline

- Web outlook
- Documentation
- PP CEL-ACCEL
- GitHub
- NWP Test Suite
- PP POMPA and PP IMPACT
(X. Lapillonne in a few minutes)
- PP C2I (D. Rieger tomorrow)



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Web outlook

- Approaching event pops-up in the top-right corner of the home page
- Info about licensees in “Operational” pages (also CLM partners ?)
- Operational pages to be updated (send the material to Bogdan Maco (NMA)):
 - 1) Italy – deterministic pages (latest update in 2013)
 - 2) Greece (latest update in 2015)
 - 3) Russia (latest update in 2015)



Web outlook

COSMO-LEPS meteograms page:

<http://www.cosmo-model.org/content/tasks/leps/boxgrams/default.htm>

File Modifica Visualizza Cronologia Segnalibri Strumenti Aiuto

Google Posta in arrivo - a x Idro-Meteo-Clima x Infomet 2.0 :: ARF x Google Hangouts x Google Calendar x Google Traduttore x LEPS ensemble m x +

cosmo-model.org/content/tasks/leps/boxgrams/default.htm Cerca

Più visitati Lookup New&Cool Infomet 2.0 :: ARPA SI... Google Calendar - Mes... La Repubblica.it - Home... Posta in arrivo - amonta... La Scuola del futuro, oggi

CONSORTIUM FOR SMALL SCALE MODELING

Work Groups Priority Projects Priority Tasks Model Management Operational Home

LEPS Ensemble-Meteograms

Last updated: as of last analysis

Available Ensemble meteograms ENSEMBLE METEGRAMS (?) based on COSMO-LEPS for COSMO countries major cities. Each date shown is the analysis date. The forecast is up to 132 hours from the analysis.

ATHENS	BERLIN	BERN	BOLOGNA	BUCHAREST	FRANKFURT	MOSCOW	ROMA	SALONIKA	TORINO
29/1/2018:00h	29/1/2018:00h	29/1/2018:00h	29/1/2018:00h	29/1/2018:00h	29/1/2018:00h	29/1/2018:00h	29/1/2018:00h	29/1/2018:00h	29/1/2018:00h
28/1/2018:12h	28/1/2018:12h	28/1/2018:12h	28/1/2018:12h	28/1/2018:12h	28/1/2018:12h	28/1/2018:12h	28/1/2018:12h	28/1/2018:12h	28/1/2018:12h
28/1/2018:00h	28/1/2018:00h	28/1/2018:00h	28/1/2018:00h	28/1/2018:00h	28/1/2018:00h	28/1/2018:00h	28/1/2018:00h	28/1/2018:00h	28/1/2018:00h

WARSAW	ZURICH
29/1/2018:00h	29/1/2018:00h
28/1/2018:12h	28/1/2018:12h
28/1/2018:00h	28/1/2018:00h

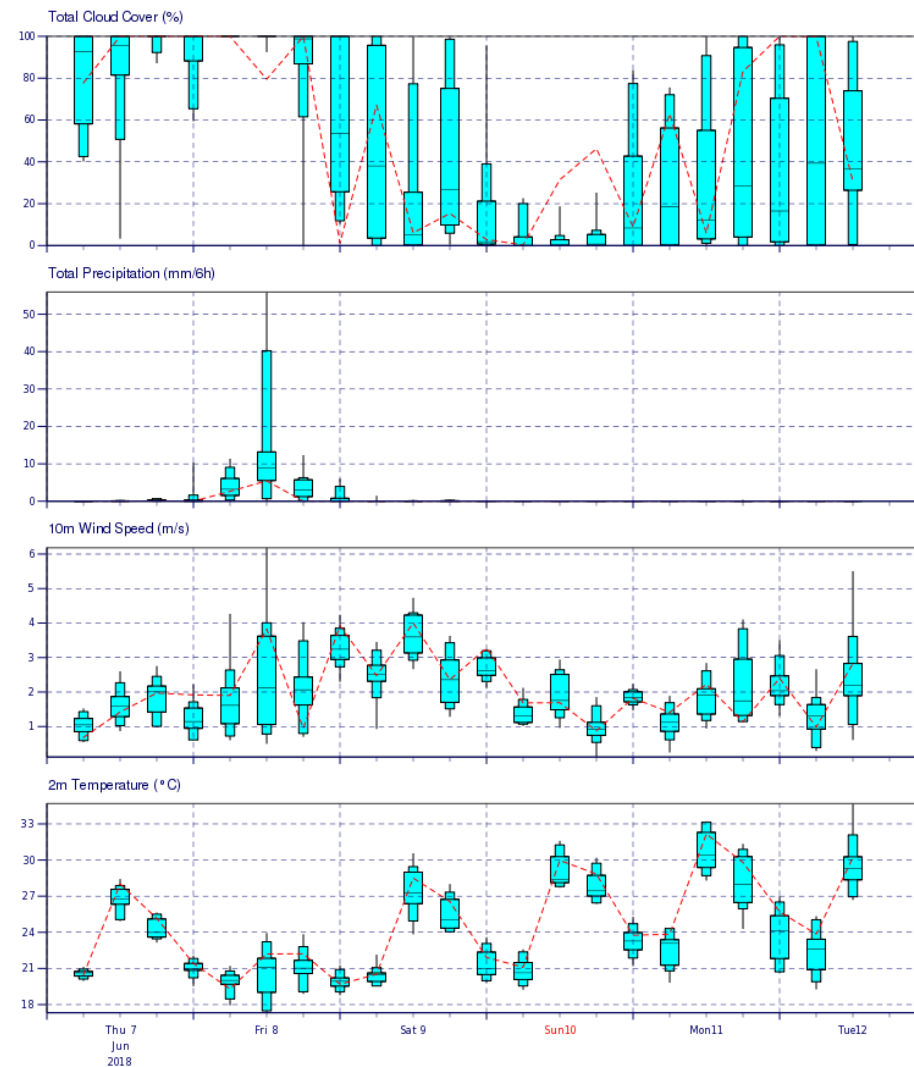
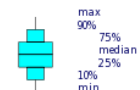
Organization
Model System
Documentation
COSMO Tasks
User Support
COSMO Places
COSMO LEPS Meteograms
Observations
Search
Home



COSMO-LEPS Meteogram

Bologna 44.53°N 11.3°E (ENS land point)

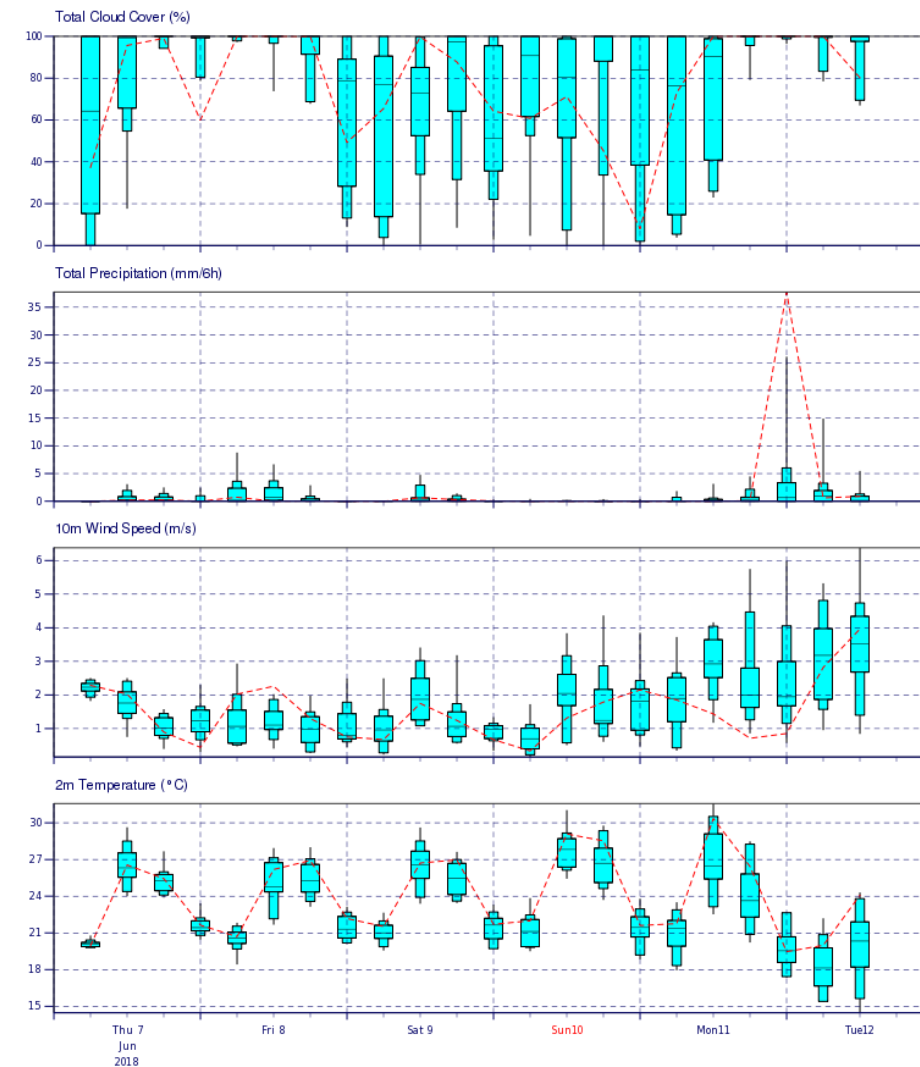
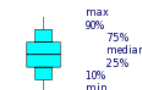
Deterministic run (red) and COSMO-LEPS Distribution - Thursday 7 June 2018 00 UTC



COSMO-LEPS Meteogram

Frankfurt 50.12°N 8.68°E (ENS land point)

Deterministic run (red) and COSMO-LEPS Distribution - Thursday 7 June 2018 00 UTC





Web outlook

Requests on meteogram locations:

- Frankfurth or Offenbach ?
- Add Locarno and Geneva
- Add sites from Croatia (still need feedback from STC)
- Add European capitals (...)

Probability maps for total precipitation, snowfall, temperature, gust:

- Work still to start (lack of resources)
- Agree on thresholds, accumulation times,



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Documentation

- Technical Reports:
 - 1) COsmo Towards Ensembles at the Km-scale IN Our countries” (COTEKINO), Priority Project final report. Marsigli et al.
 - 2) The COSMO Priority Project CORSO Final Report. G. Rivin et al.
- NWP Test Suite Report (v5.5 vs v5.3)
- Scientific doc updated:
 - 1) Part I (Dyn and Num): added sections about spectral nudging and the new Bott tracer advection scheme
 - 2) Part V (Preprocessing): int2lm v2.5
 - 3) Part VII (User Guide): cosmo v5.5



Documentation

- Common plot activity 2017-2018
- Newsletter: September 2018, to be published in September (slight delay...) with 3 contributions...
- DOI request for TRs and Newsletter (maybe) on the shoulders of SPM. To be discussed during the SMC meeting.
- Expected TRs during next COSMO year: PP KENDA, PP POMPA, PP SPREAD, PP CDIC, PP CELO, **PP CORSO-A, PP INSPECT**

The Documentation and the whole web site have to be revisited in consideration of the transition to ICON-LAM



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PP CEL-ACCEL

This is a PP about COSMO-EULAG on accelerators (PP CEL-ACCEL) by Z. Piotrowski.

The aim is to implement consistent anelastic/compressible COSMO-EULAG dynamical core (DC) within the C++ dynamical core framework of COSMO (the main deliverable being the high-resolution forecasting system ready for pre-operational testing on modern supercomputing architectures, viz., GPU and manycore CPUs).

The duration is 2.5y (03.17-09.19) and the participants are IMGW and MCH.



PP CEL-ACCEL

- The project experiences delay, in large part due to the delays in delivery of stable GridTools version and Cosmo 5.05 version
- In spite of the above, the quality and computational performance of the COSMO-EULAG Fortran codebase improves constantly and hopefully will facilitate final approach to COSMO-EULAG in GridTools



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GitHub

- Transition from trial basis (C2SM-RCM organization) to more permanent basis (COSMO-ORG organization)

github.com/COSMO-ORG

- COSMO-ORG organization is administrated by Xavier Lapillonne from MeteoSwiss
- Already contains official version of Int2Im, CALMO-MM, and terra-standalone
- Plans to move Fieldextra and Extpar after their next releases
- Cosmo - TBD



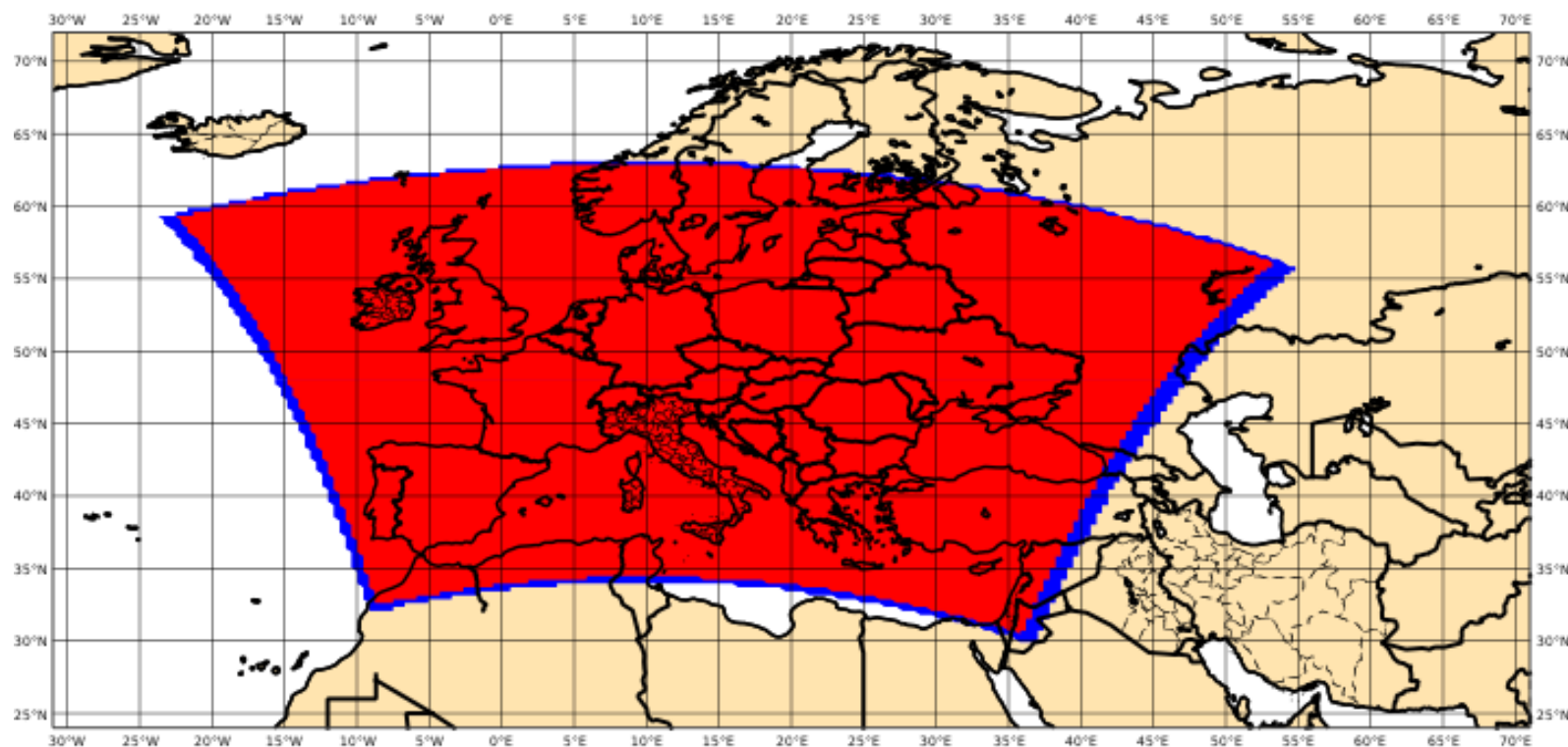
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NWP Test Suite

giovedì 02 febbraio 2017 00 UTC edzw t=0 VT
giovedì 02 febbraio 2017 00 UTC 2 m 2 metre temperature
giovedì 02 febbraio 2017 00 UTC edzw t=0 VT
giovedì 02 febbraio 2017 00 UTC 2 m 2 metre temperature



**7p0 (661x471x40 =
12.453.240 grid points)**

**2p8 (1587x1147x50 =
91.014.450 grid points)**

- 
- Old version of COSMO (v5.03) and the new one (v5.05) for 2 months (**January 2017 and July 2017**) at both 7 km (40 ML, fc+72h) and 2.8 km (50 ML, fc+48h), always starting at 00UTC
 - As for 7km, COSMO_v5.05 both DoublePrecision and SinglePrecision (only DP @2.8 km)
 - ICs and 3h BCs provided by ECMWF HRES analysis and forecast fields (no nudging):

HRES to COSMO@7p0 to COSMO@2p8

- **COSMO@7p0:** as for the first day of integration (1 January and 1 July) the soil is interpolated from ICON-EU. For the other days, the soil fields are 24h forecasts of the previous run, properly merged with SST from ECMWF analysis.
- **COSMO@2p8:** as for the first day of integration (1 January and 1 July) the soil is interpolated from COSMO@7p0. For the other days, the soil fields are 24h forecasts of the previous run, properly merged with SST from ECMWF analysis.
- Observations: synop reports from Europe and the Middle East (about 3600 stations x day).
- Output fields are stored at ecfs and provided to Versus and Rfdbk (both at ECMWF) for the comparison of the 2 model versions **and for the intercomparison of the verification tools.**



- The future versions will be tested for 2 months (**January 2017 and July 2017**) at both 7 km (40 ML) and 2.8 km (50 ML), always starting at 00UTC
- As for 7km, COSMO will be tested in both DoublePrecision and SinglePrecision (only DP @2.8 km)
- 6-hourly analyses from ECMWF HRES will provide ICs/BCs for 24h runs at both resolutions

HRES to COSMO@7p0

HRES to COSMO@2p8

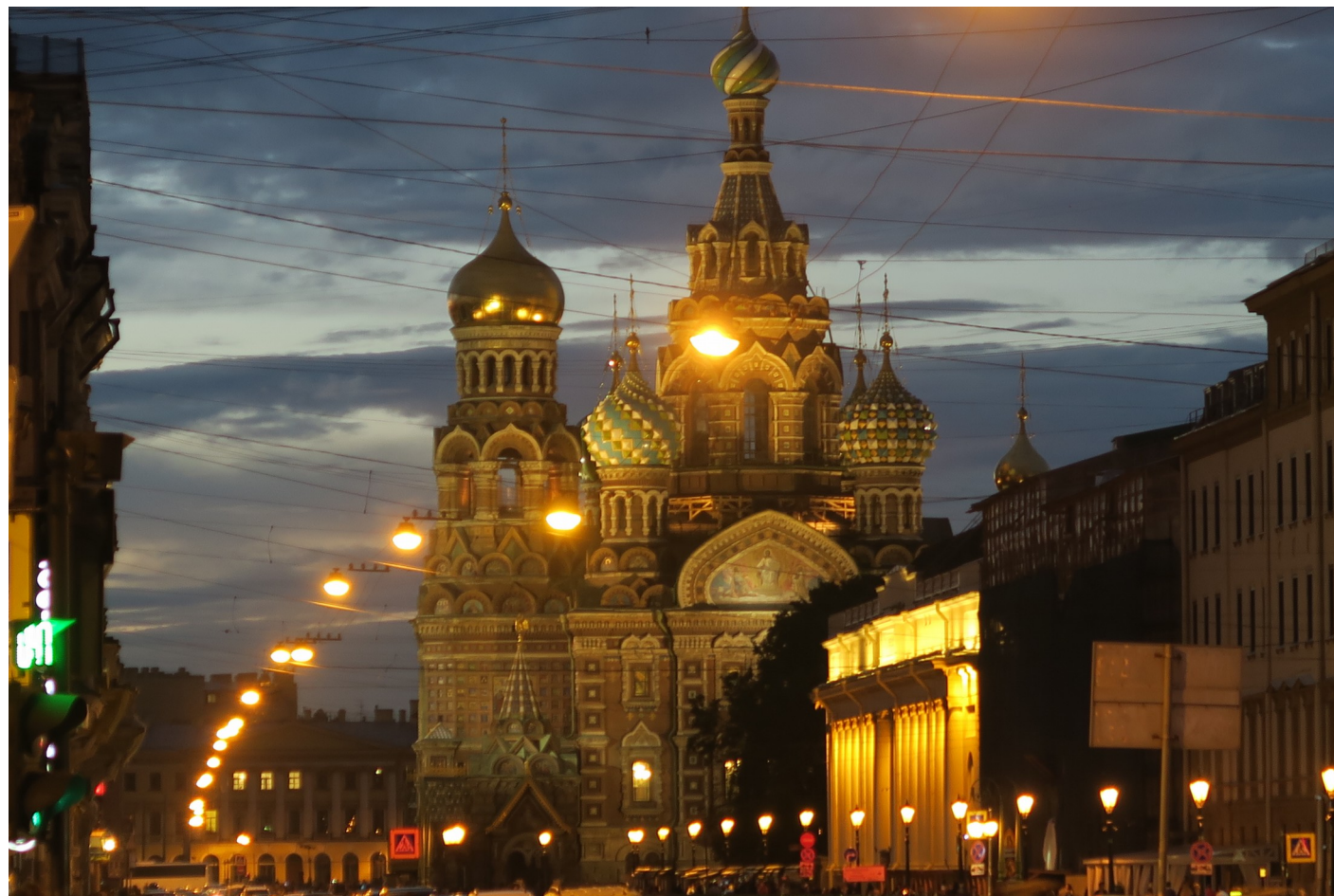
was preferred (simpler and faster) to

HRES to COSMO@7p0 to COSMO@2p8



NWP Test Suite

- The results, at 7km and at 2.8km, indicated that v5.05 is generally better than v5.03 (sometimes with neutral impact), particularly in DP
- In SP the 7km version has some peculiar behaviour for some parameter (CC, T2m and TD2m) in winter, while in summer things are better (this brought to the definition of SP as “**Summer Precision**”, cit. A. Montani). This point has to be still investigated, by running again the model with the latest patch and by checking the verification
- The MEC+FF vs VERSUS comparison shows that the softwares are equivalent, meaning that VERSUS won't be used any longer in this context
- Hindcast runs still to be performed (asap)



Thanks for your attention and for your work !