Working Group 5:

Verification and Case Studies Overview

COSMO General Meeting 21-24.09.2004

Francis Schubiger, MeteoSwiss

MeteoSwiss

Verification Working Packages

- verification of surface weather parameters
- verification of vertical profiles

francis.schubiger@meteoswiss.ch

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Verification of surface weather parameters

Main results

- 2m-temperature:
  - during evening and nighttime quite large cold bias (especially in winter), but less pronounced with TKE scheme and SMA
  - too large amplitude of diurnal cycle, max too early (at noon)
- 2m-dewpoint:
  - diurnal cycle not well captured without TKE scheme
- 10m-wind:
  - overestimated (especially during nighttime), on mountain gridpoints strong underestimation
- total cloudiness:
  - mean daily cycle not well represented
- precipitation:
  - low amounts overestimated
  - mean daily cycle of convection (in summer): max ~ 4 - 6 too early

Verification of vertical profiles

Main results

- cold bias from surface up to 750 hPa (mainly in summer)
- mean error in windspeed small, with positive bias in PBL (at least during cold season) and small negative bias above 800 hPa

Verification of surface weather parameters and vertical profiles

Presentations

- *Ulrich Damrath, DWD:*

  Verification of the diurnal cycle for surface weather elements

- *Pirmin Kaufmann, MeteoSwiss:*

  Verification with SYNOP, TEMP and GPS data

- *Katarzyna Starosta, Joanna Linkowska, IMGW*:

  Verification against data from synoptic stations and local meteorological posts

Verification of surface weather parameters and vertical profiles

Posters

- *Maria Stefania Tesini, ARPA-SIM:*
  Verification of surface weather parameter at ARPA-SIM
- *Claus Jürgen Lenz and Ulrich Damrath, DWD:*
  Overview on verification of LMK results
- *Patrizio Emiliani, Alessandro Galliani, UGM:*
  SYNOP and TEMP verification at UGM
- *Andrzej Mazur, IMGW:*
  LM results - verification against vertical soundings
- *Ulrich Pflüger, DWD:*
  Some results of LM Verification with aircraft data

Verification Working Packages

- verification of surface weather parameters
- verification of vertical profiles
- high resolution verification and special aspects

francis.schubiger@meteoswiss.ch

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High resolution verification (precipitation)

Main results

- windward shift of maximum precipitation over mountain ranges and too less precipitation over the leeside
- prognostic precipitation gives better representation over steep topography

Posters

- *Ulrich Damrath, DWD:*

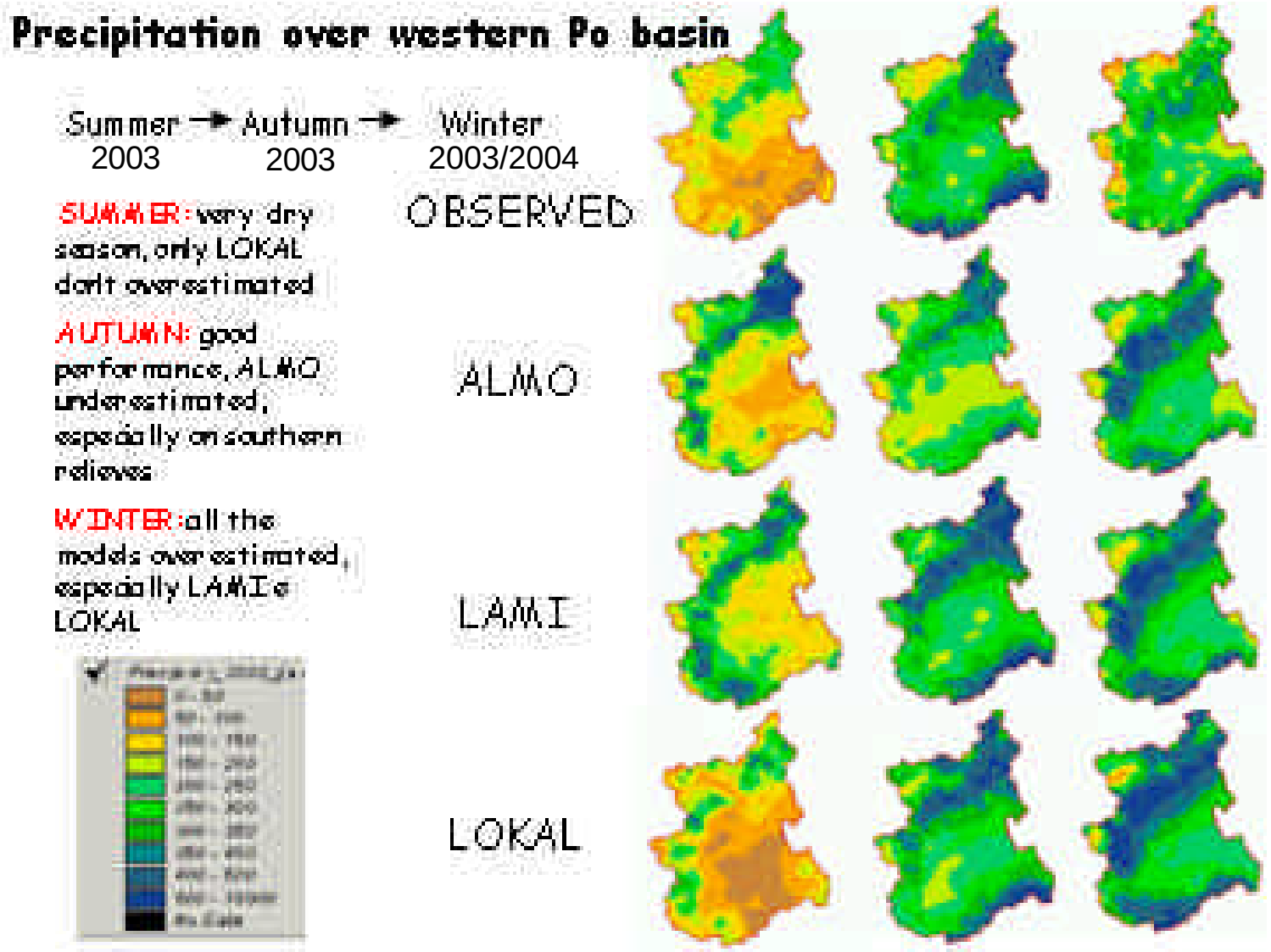
  The effect of drifting precipitation on quality of QPF
- *Ulrich Pflüger, DWD:*

  First results of LM QPF Verification with CRA method

  (CRA = contiguous rain area)
- *Elena Oberto, Marco Turco, Daniele Cane, ARPA Piedmont:*

  Recent developments in LM verification process

WP 5.3.1: High resolution verification of precipitation over NW-Italy



E. Oberto, ARPA-Piedmont, WG4/WG5 workshop 5-6 May 2004

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JJA 2003

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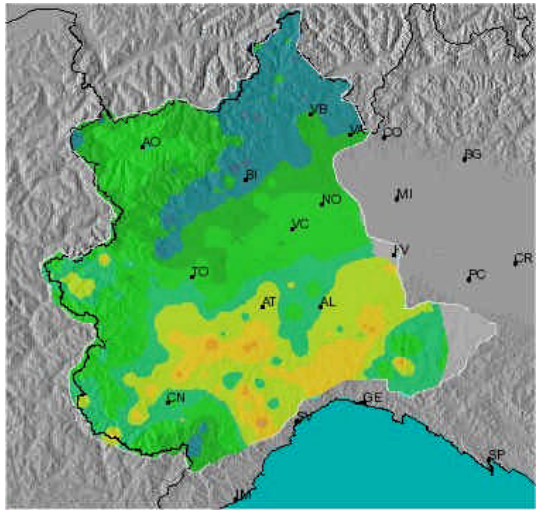
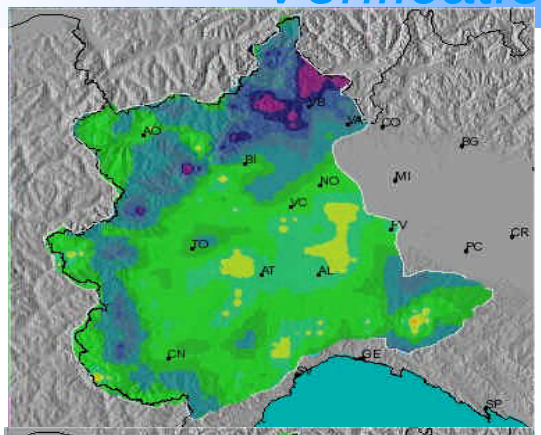
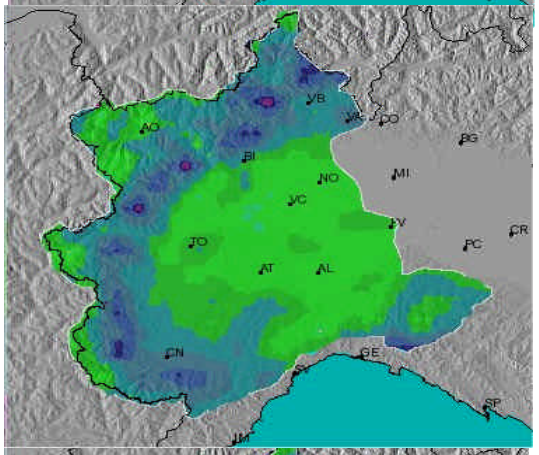


ALMO



LAMI



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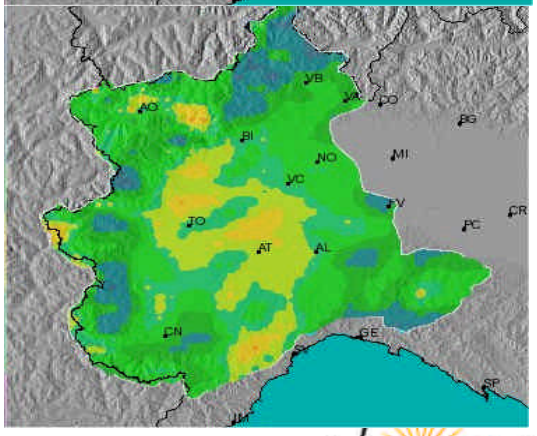

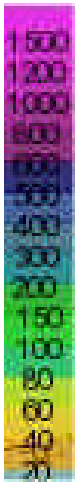

Prec (mm)

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francis.schubiger@meteoswiss.ch

MAM 2004

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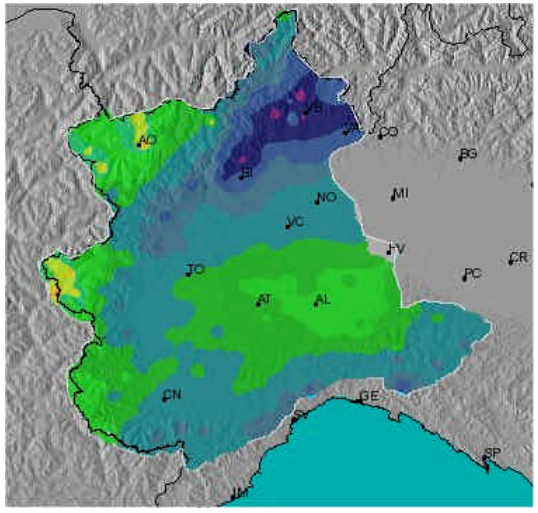

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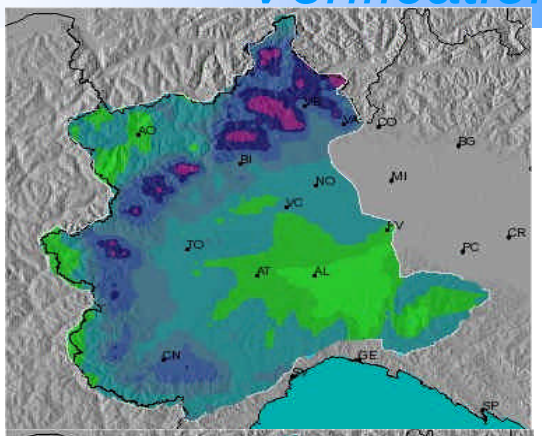

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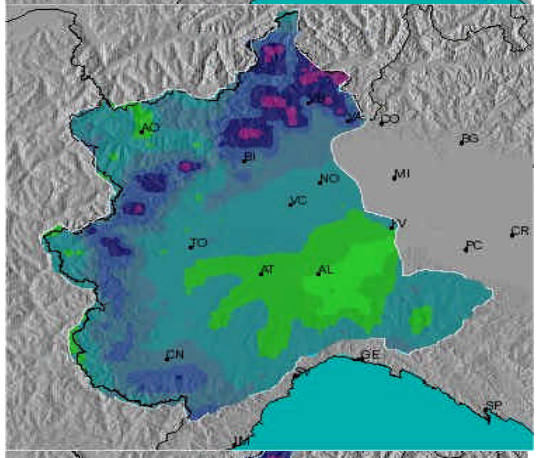

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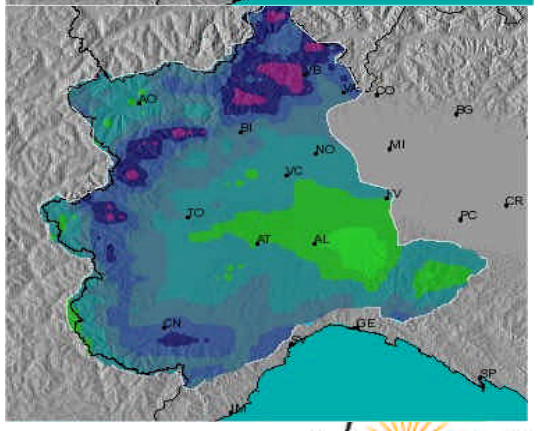

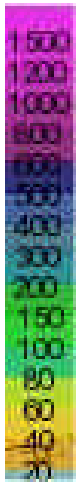

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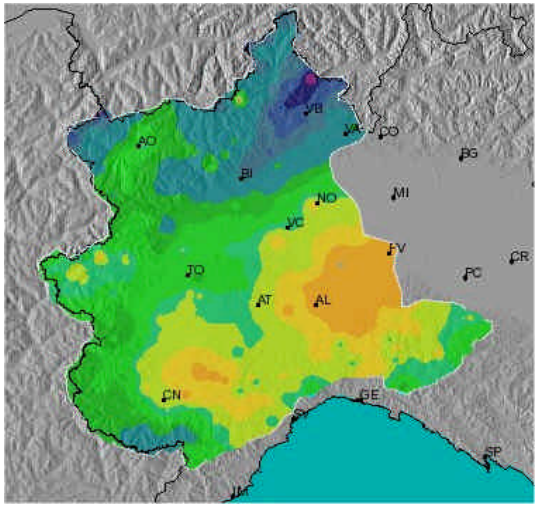

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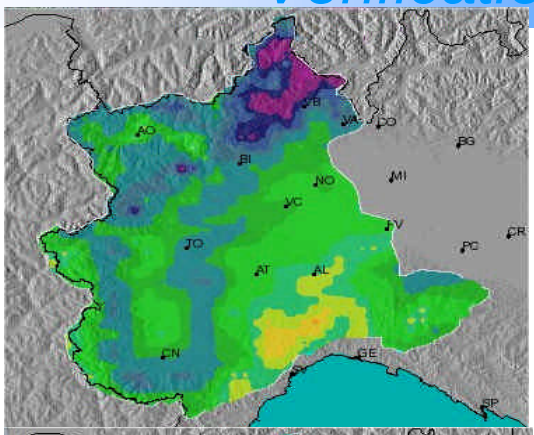

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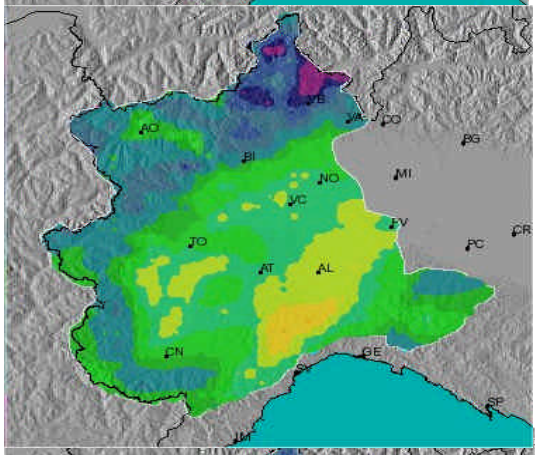

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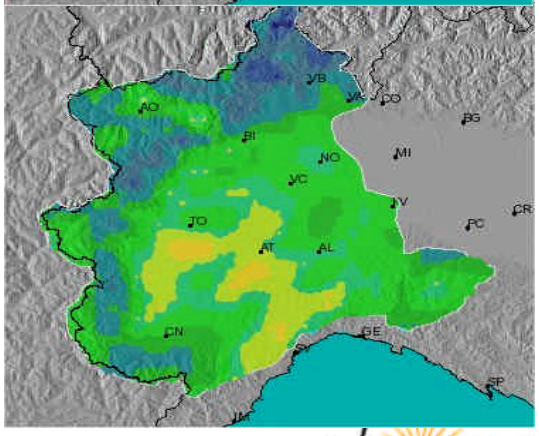

Prec (mm)

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francis.schubiger@meteoswiss.ch

Verification with remote sensing data

Main results

- cloud cover overestimated (as compared to METEOSAT VIS channel): overestimation of high clouds (as verified with surface observations)
- integrated water vapor content underestimated

Posters

- *Andrea Rossa, Marco Arpagaus, Emanuele Zala, MeteoSwiss:*

  Weather situation-dependent stratification of radar-based precipitation verification of the Alpine Model (aLMo)

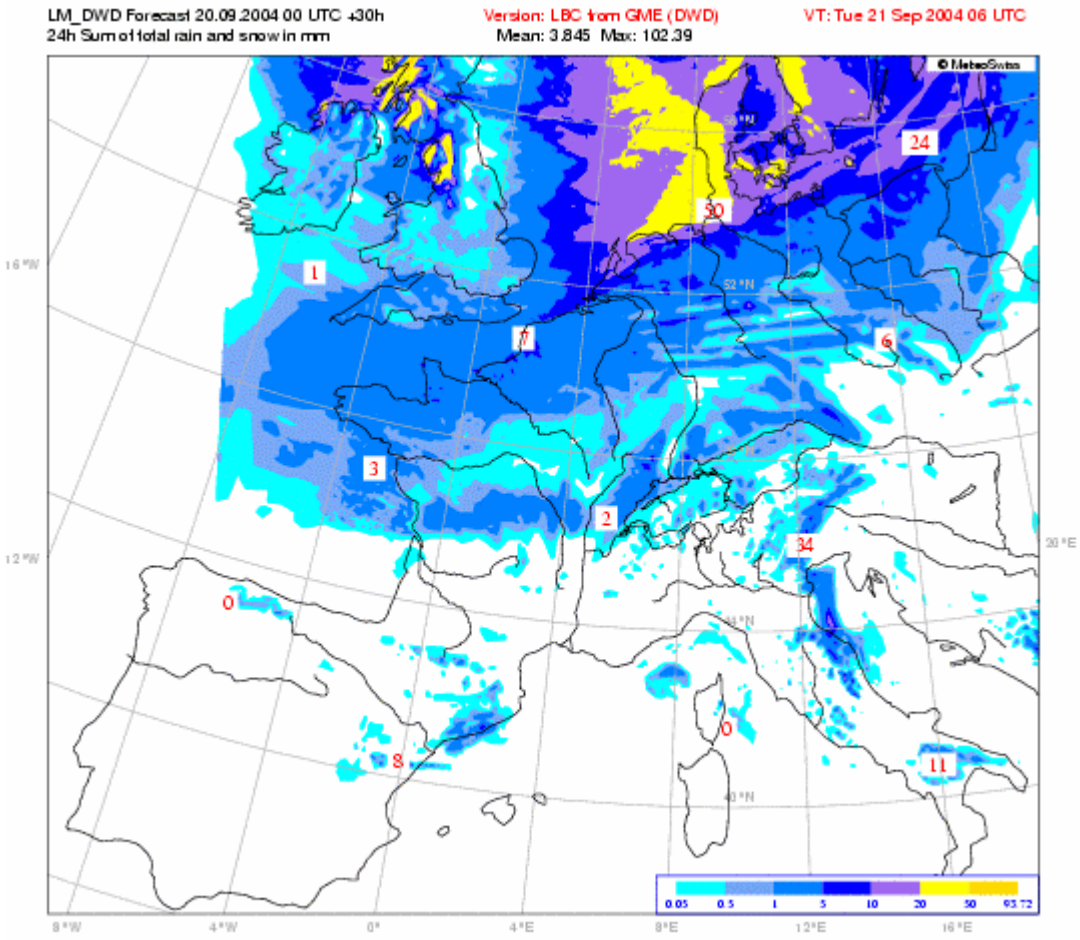
Verification Working Packages

- verification of surface weather parameters
- verification of vertical profiles
- high resolution verification and special aspects
- verification based on data from remote sensing
- other:
  - weather regime verification
  - verification of runoff river basins
  - consolidation of a common dataset of non-GTS data
  - exchange of LM maps at the COSMO website
  - workshop with forecasters (5-6 May 2004, Geneva)
- new packages in 2004 (presentations)
  - installation of a common verification package at ECMWF
  - validation of near-surface boundary layer processes

Exchange of GRIB-data at the COSMO website and use of a common graphics package

24h-precipitation sum 20.09.2004 00 UTC +6 to+30h

LM



francis.schubiger@meteoswiss.ch
COSMO General Meeting, Milano, 22-24.09.2004

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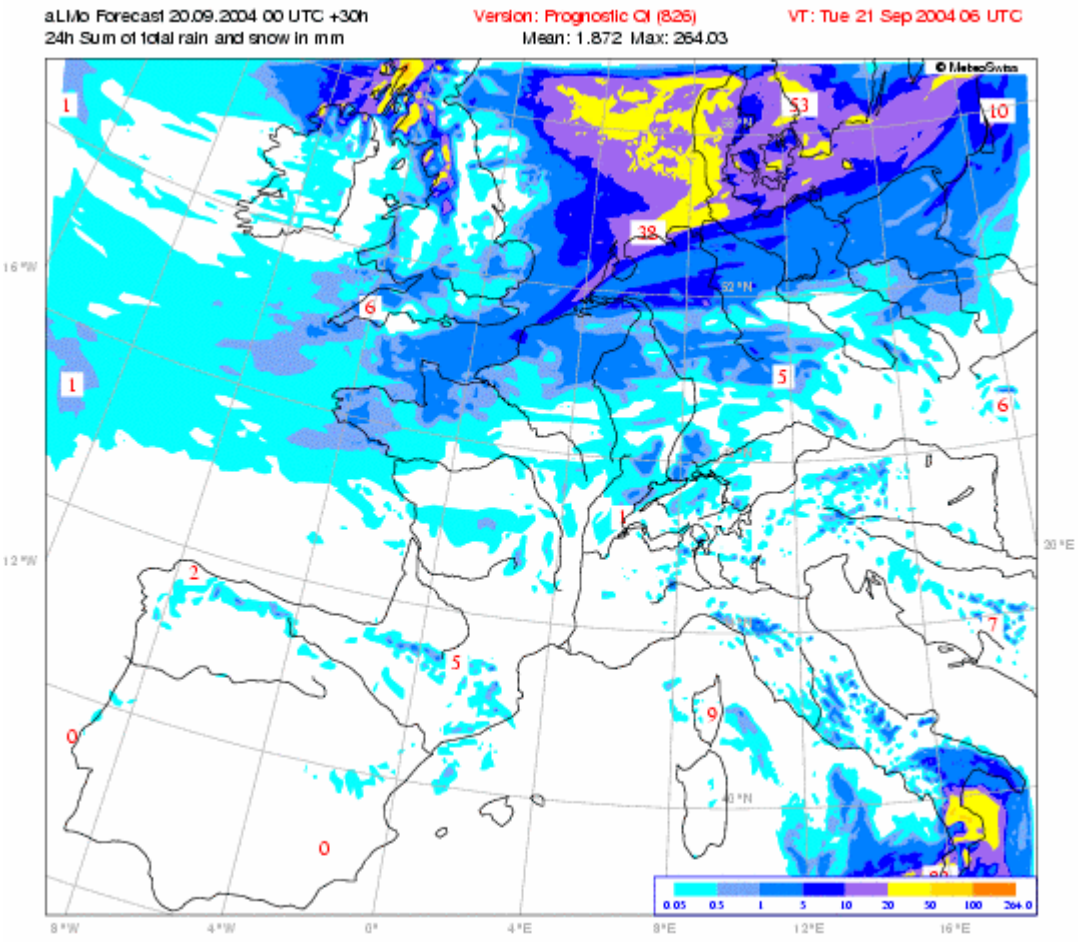
aLMo



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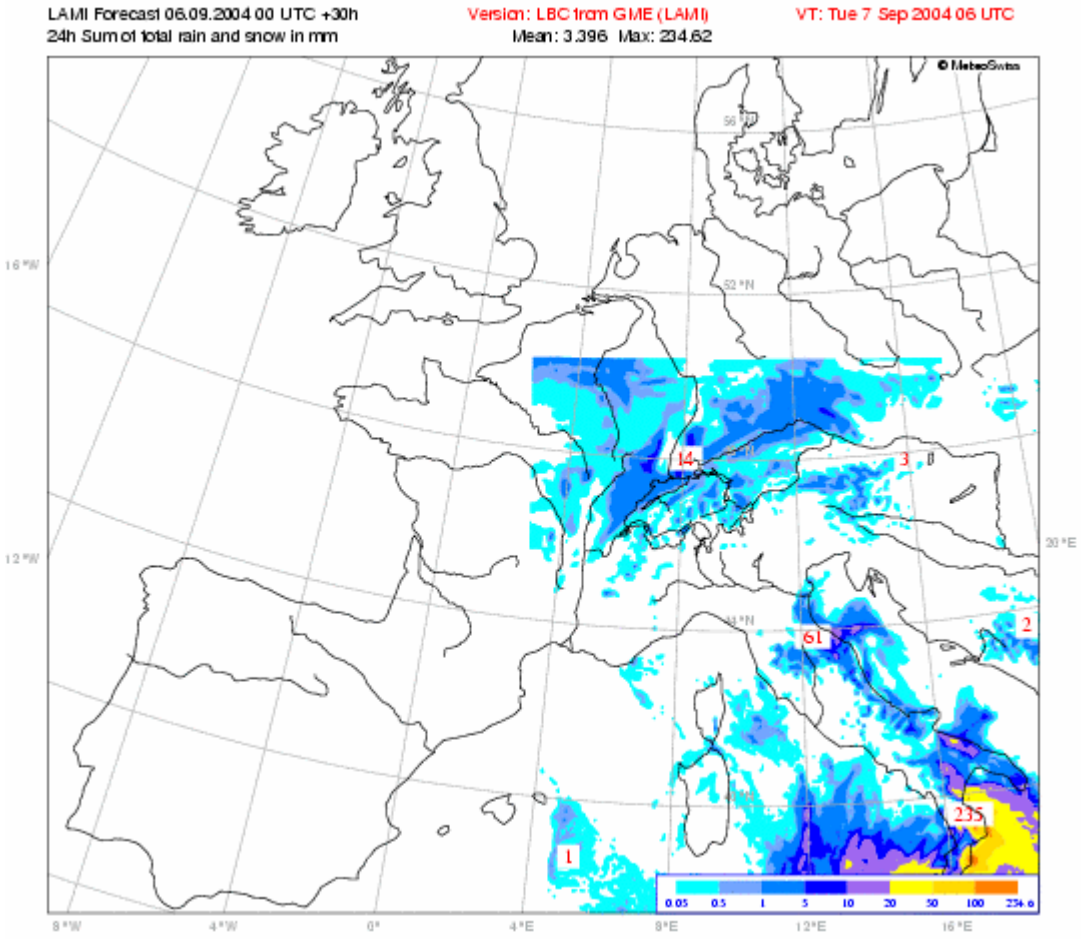

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