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Swiss Confederation

Federal Department of Home Affairs FDHA
Federal Office of Meteorology and Climatology MeteoSwiss

Slides of COSMO-activities in verification in 2009

compiled by Francis Schubiger (MeteoSwiss)

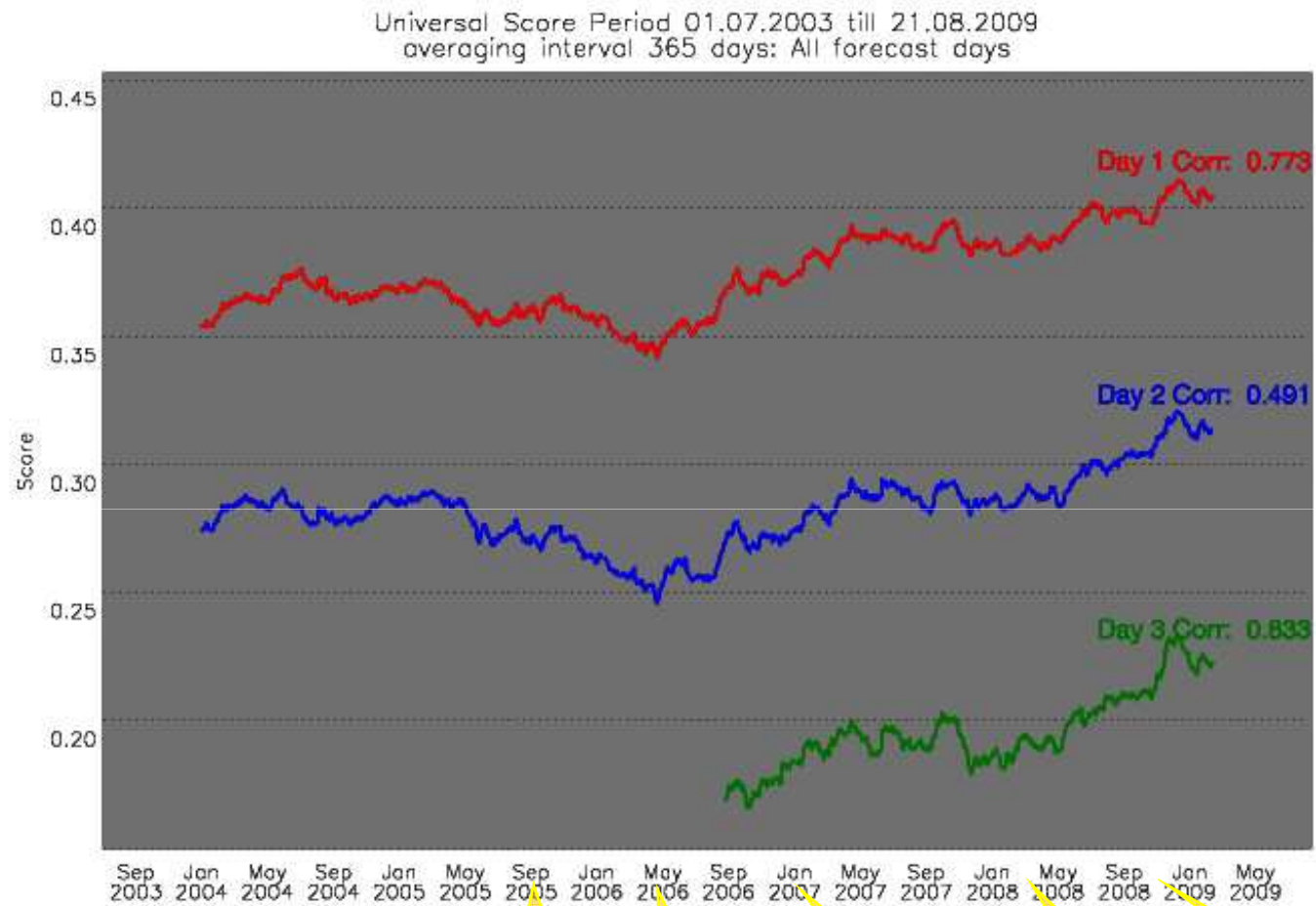


Verification activities in COSMO (1)

VERSUS : the VERification System Unified Survey

- Installation of VERSUS (the verification package inside COSMO) version 1 at the different centres:
already operational in Italy, Greece, Poland and Romania
-> presentation of Adriano Raspanti
- Further studies in fuzzy verification at DWD and MeteoSwiss
-> presentation of Adriano Raspanti
 - start of pre-operational fuzzy verification in 2010
with Fractions Skill Score, Upscaling and Intensity-Scale
at DWD and MeteoSwiss
- COSI-index (based on the UK Index):
 - total cloud cover, 2m-temperature, 10m-windvector, precipitation
 - implementation in VERSUS 2 in Autumn 2009
 - first results from DWD: 2003-2009 -> next 2 slides

COSI@DWD



DWD, U. Damrath

COSMO-EU

V3.19

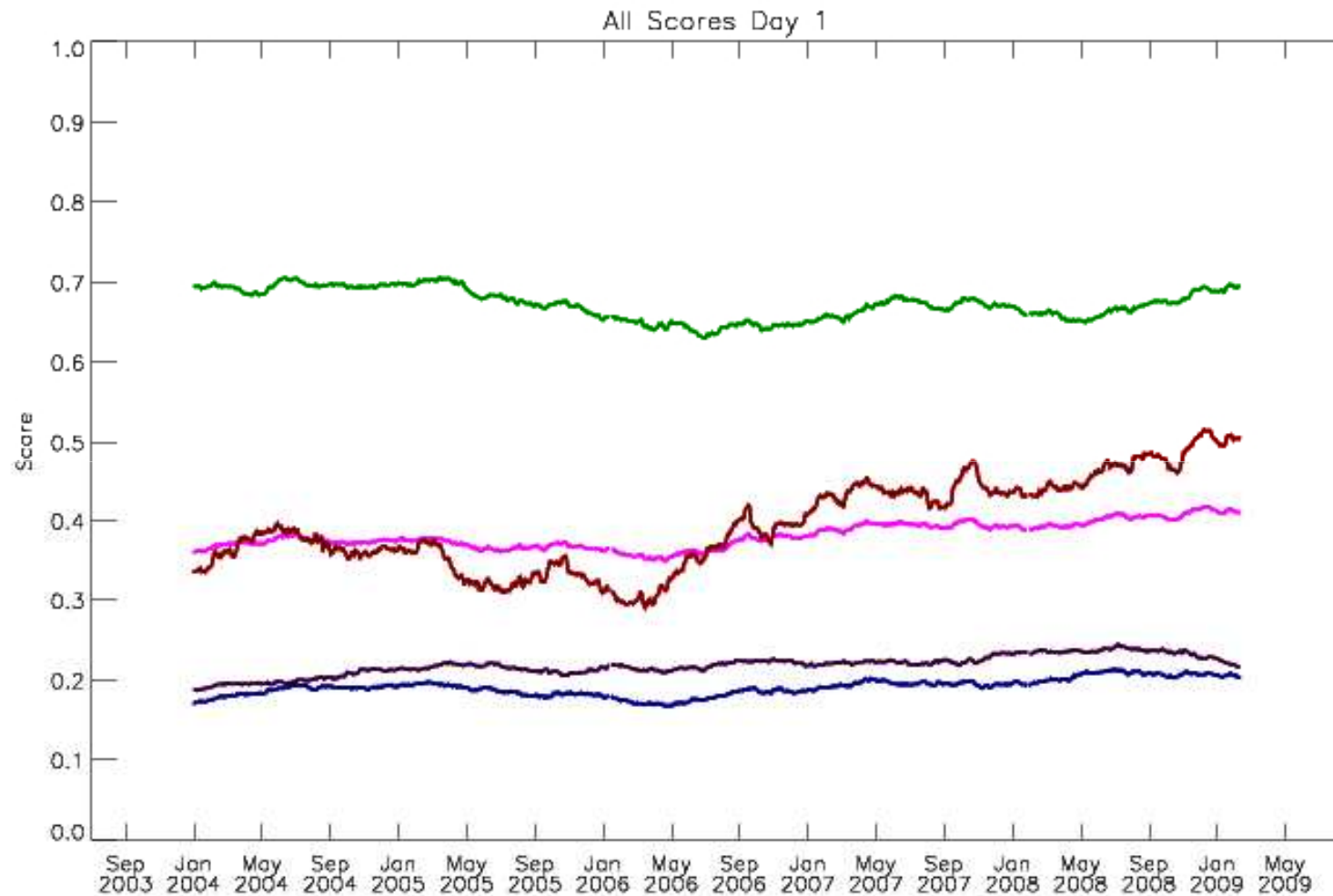
V 3.22

T 2m

SSO

27.08.2009 16:09:17 MESZ

COSI@DWD - Scores for day 1



Universal Score Cloud cover Vector wind Temperature Precipitation

DWD, U. Damrath

27.08.2009 16:09:36 MESZ



Verification activities in COSMO (2)

Verification of precipitation at the regional centres (ARPA's) of Italy

- QPF statistical properties and verification of COSMO:
Day-by-day behaviour: qualitative description -> 3 slides
- precipitation verification comparison in 2008/2009 among
the several COSMO-Model versions -> 2 slides



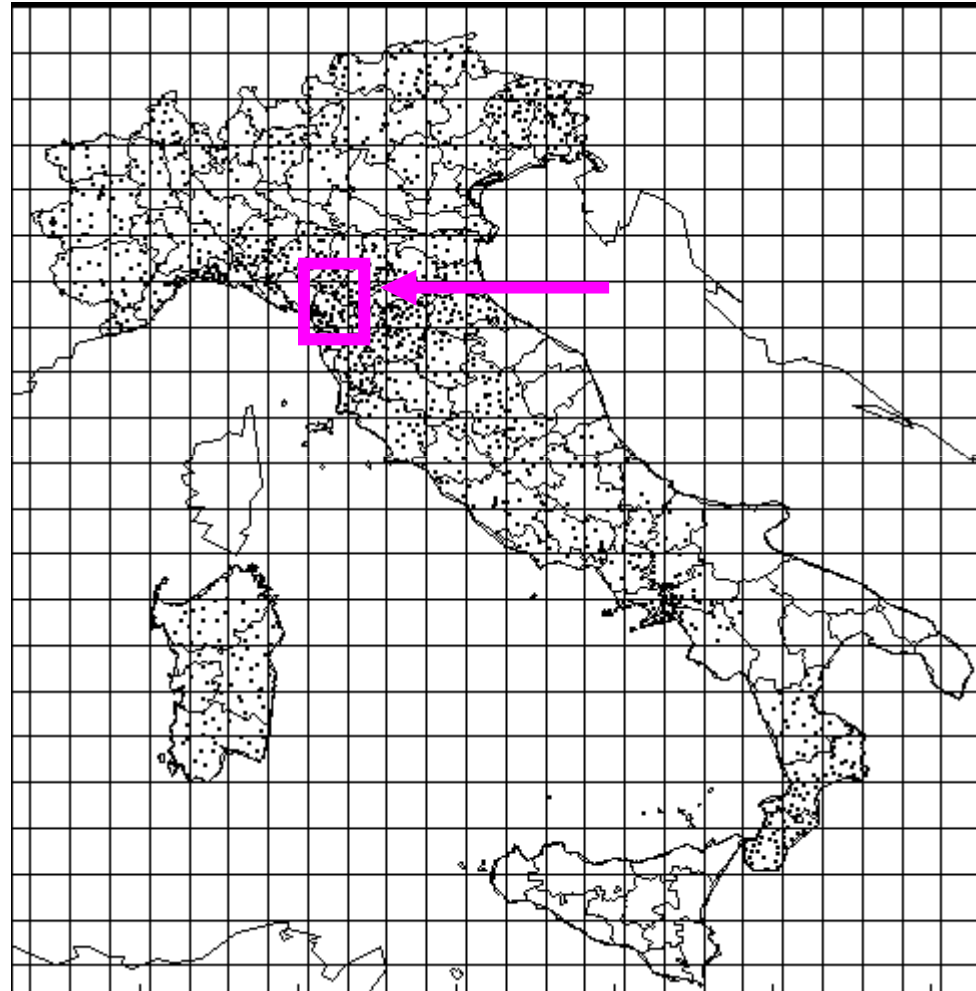
Day-by-day behaviour: qualitative description

ARPA-SIMC [M.S. Tesini, C. Cacciamani, T. Paccagnella]

- Investigation of models ability in reproducing the day-by-day variability of the precipitation field inside a selected area
- The precipitation values of all model grid-points and of all rain-gauges that fall within the chosen area are taken into account to evaluate the respective distribution functions
- Size of the selected areas: $0.5^\circ \times 0.5^\circ$



APRIL 2009 - Daily distribution



Verification in COSMO in the year 2009

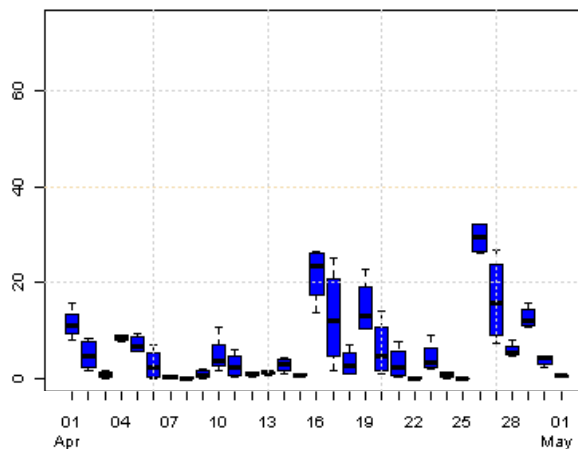
ARPA-SIMC [M.S. Tesini, C. Cacciamani, T. Paccagnella]



APRIL 2009 - Daily distribution

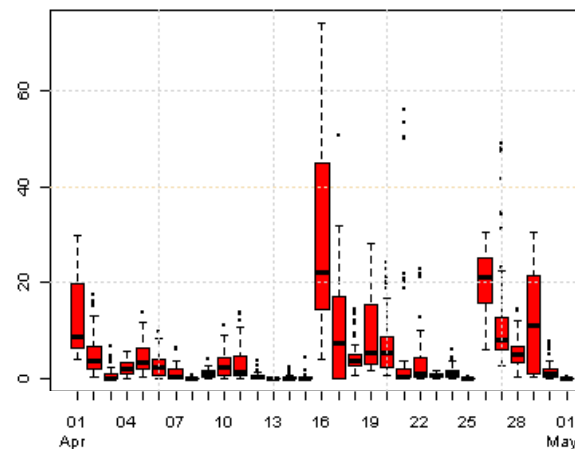
ECMWF

AREA 399 - ECMWF



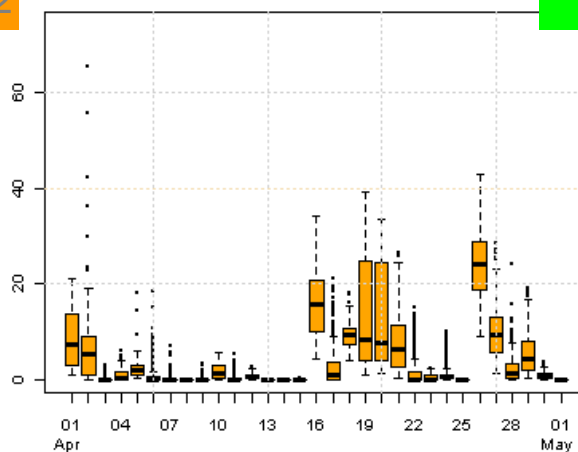
COSMO-I7

AREA 399 - COSMO-I7



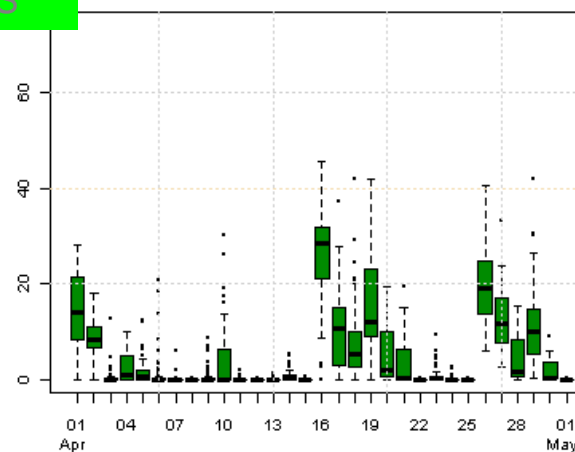
COSMO-I2

AREA 399 - COSMO-I2



OBS

AREA 399 - HR OBSERVATIONS



Verification in COSMO in the year 2009

ARPA-SIMC [M.S. Tesini, C. Cacciamani, T. Paccagnella]

Precipitation verification comparison in 2008/2009 among the several COSMO-Model versions

(Elena Oberto, Massimo Milelli - ARPA Piemonte)

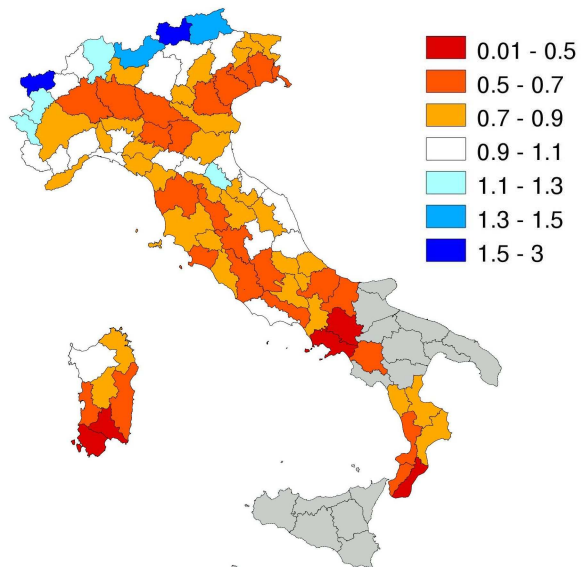
QPF verification of the 4 model versions
at 7 km res. (**COSMO-I7, COSMO-7,
COSMO-EU, COSMO-ME**) with the 2
model versions at 2.8 km res. (**COSMO-
I2, COSMO-IT**)

Specifications:

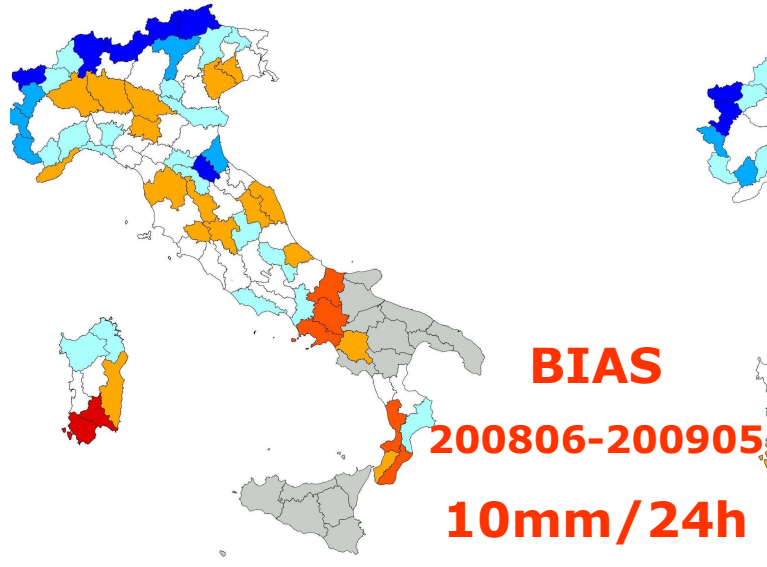
- Dataset: high resolution network of rain gauges coming from COSMO dataset and Civil Protection Department → 1300 stations
- Method: 24h/6h averaged cumulated precipitation value over 90 meteo-hydrological basins
- Model selection: run 00UTC, D+1



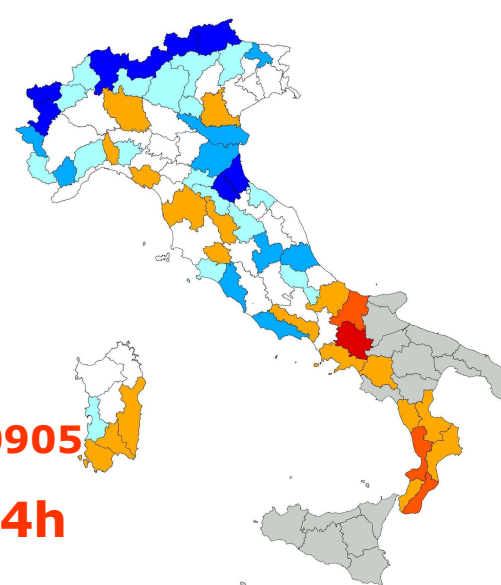
COSMO-7



COSMO-ME



COSMO-I7

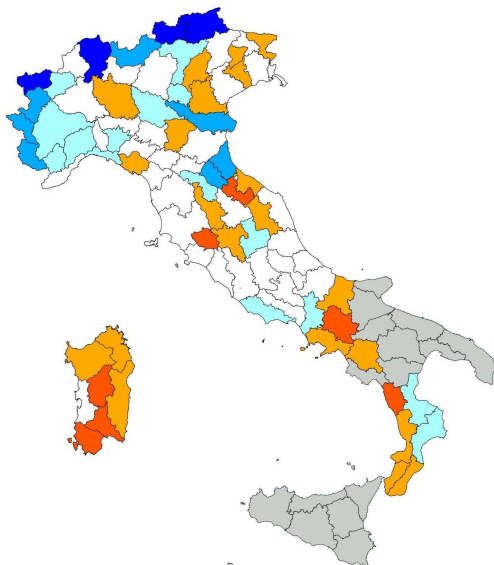


BIAS

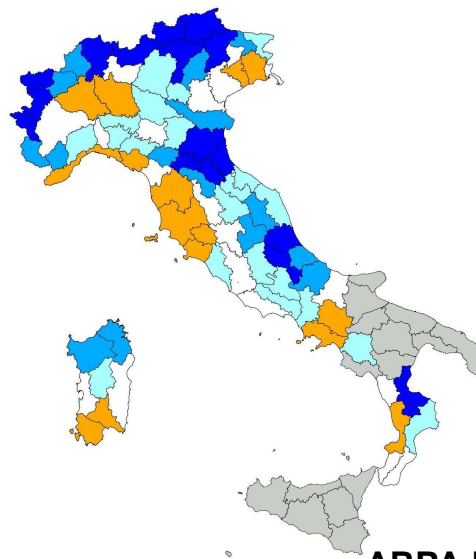
200806-200905

10mm/24h

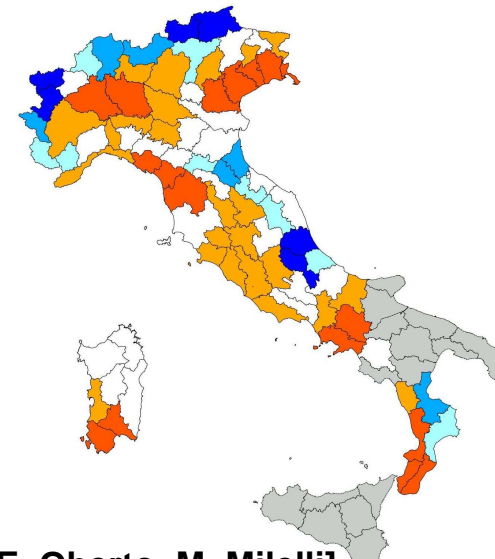
COSMO-EU



COSMO-IT



COSMO-I2



he year 2

ARPA Piedmont [E. Oberto, M. Milelli]