PRIORITY PROJECT **SPRED**
Studying Perturbations for the Representation of modelling uncertainties in Ensemble Development

Chiara Marsigli

ARPA Emilia-Romagna – SIMC, Bologna, Italy

Outline

- Motivation

- Tasks

- Participants

COSMO-DE-EPS

EWeLiNE

Richard Keane
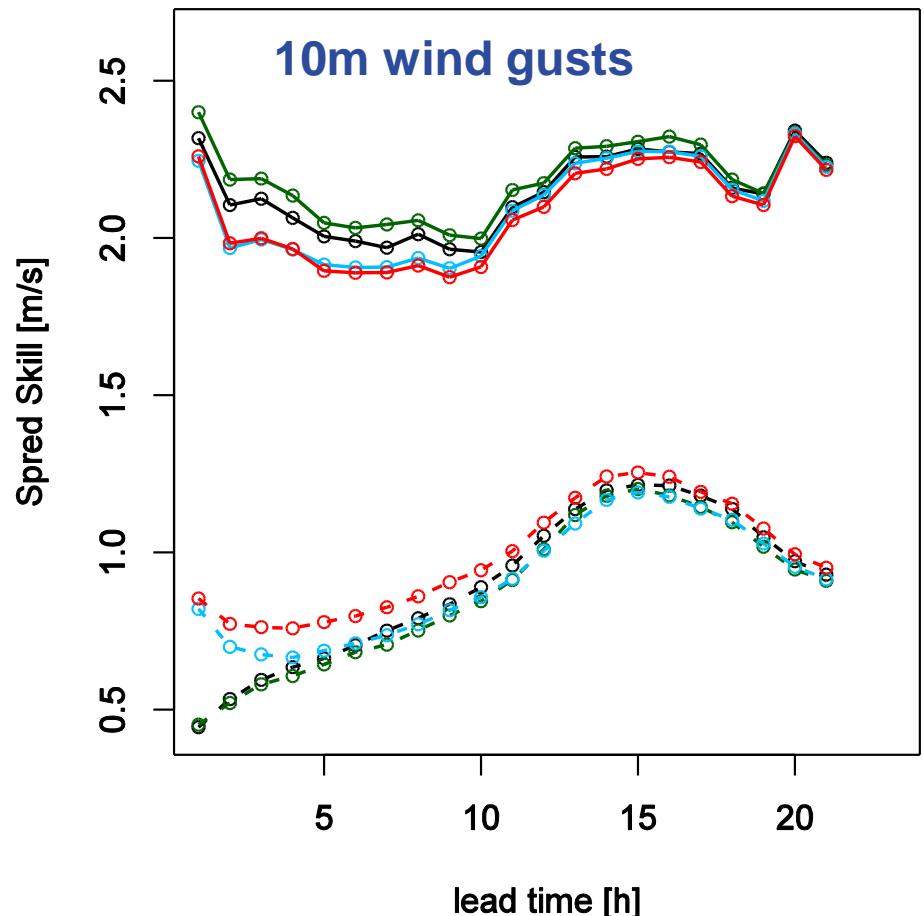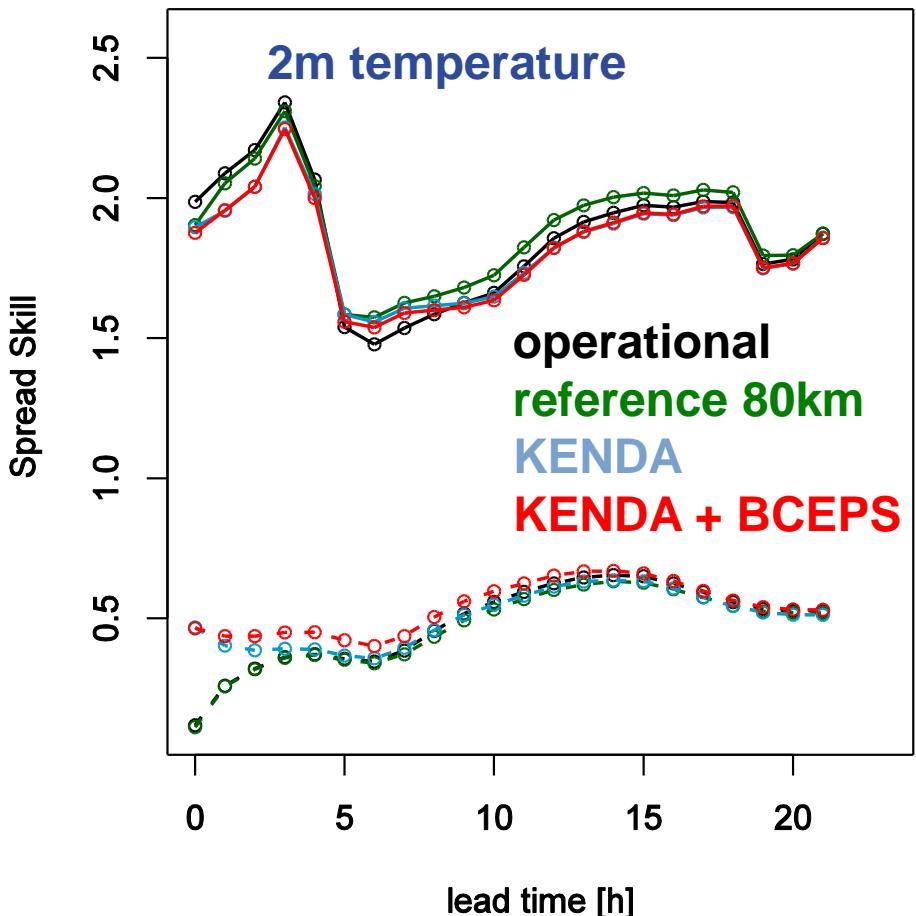
# COSMO-E

T2m, Alps
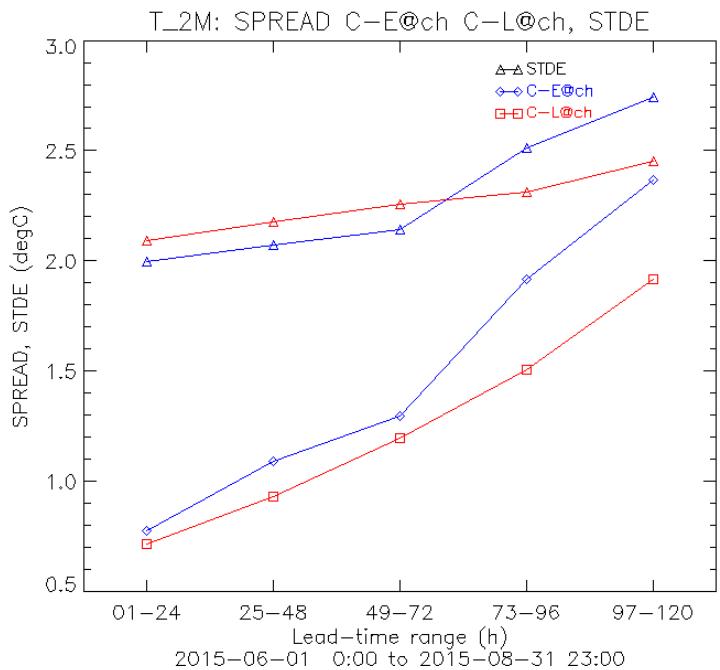
TD2m, Alps

COSMO-E
COSMO-LEPS
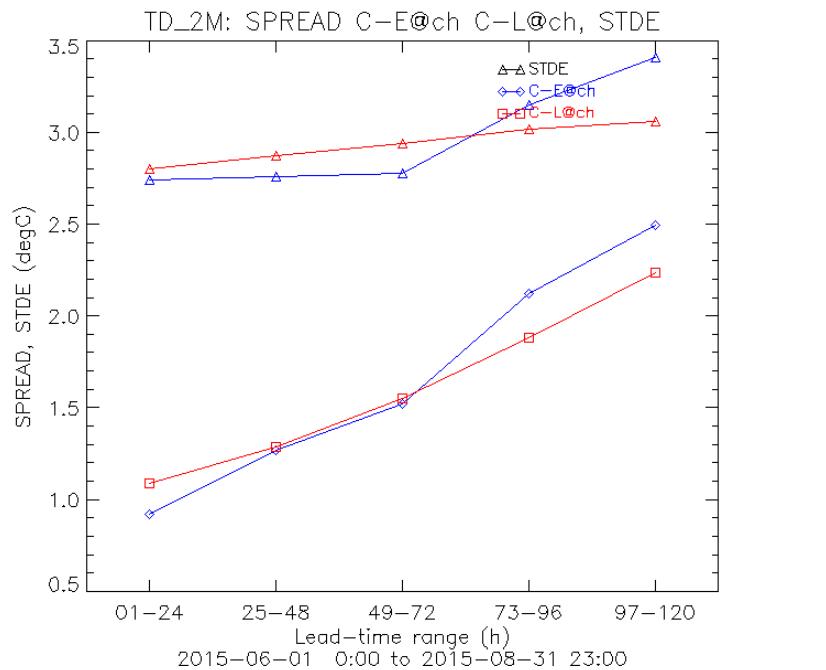
André Walser, MCH

spread / error: **temperature**

k=60 / ~10 m

T   20120726-20120825-2days al   k-level 59

summer
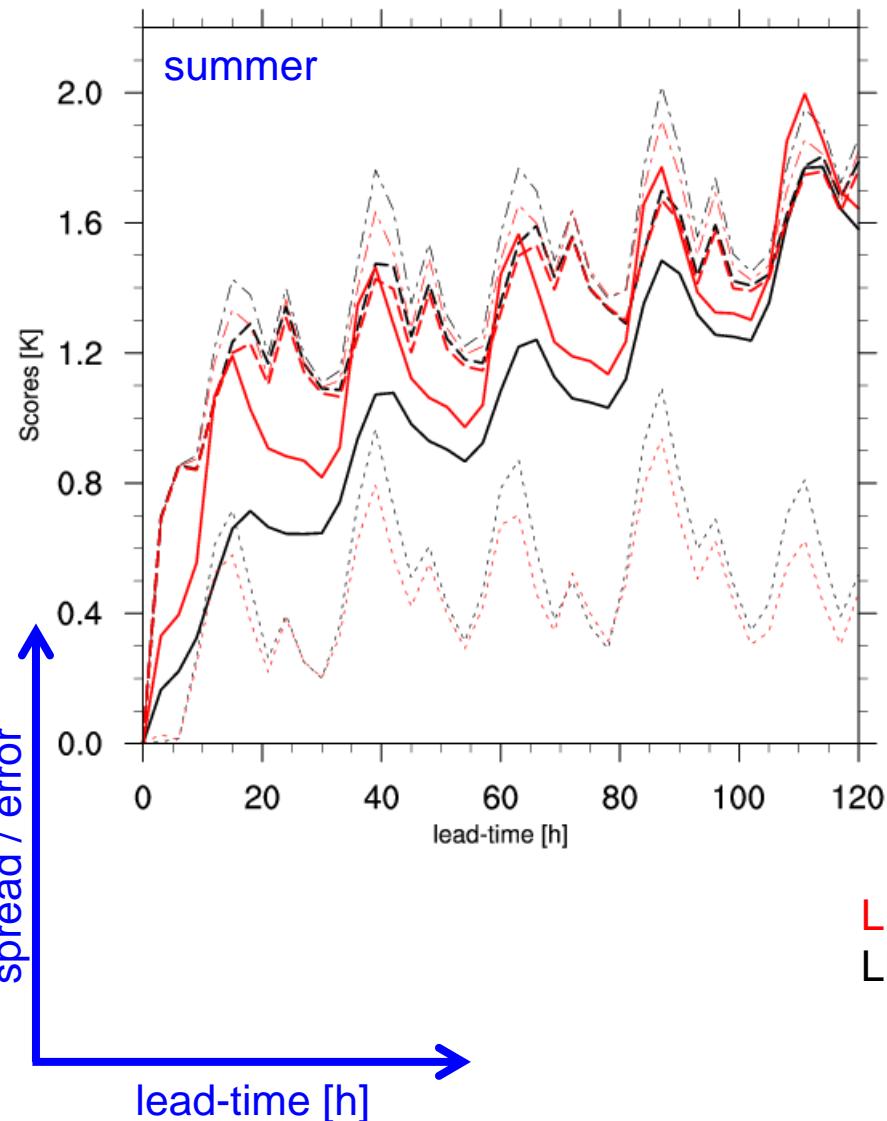
T   20121203-20121231-2days al   k-level 59
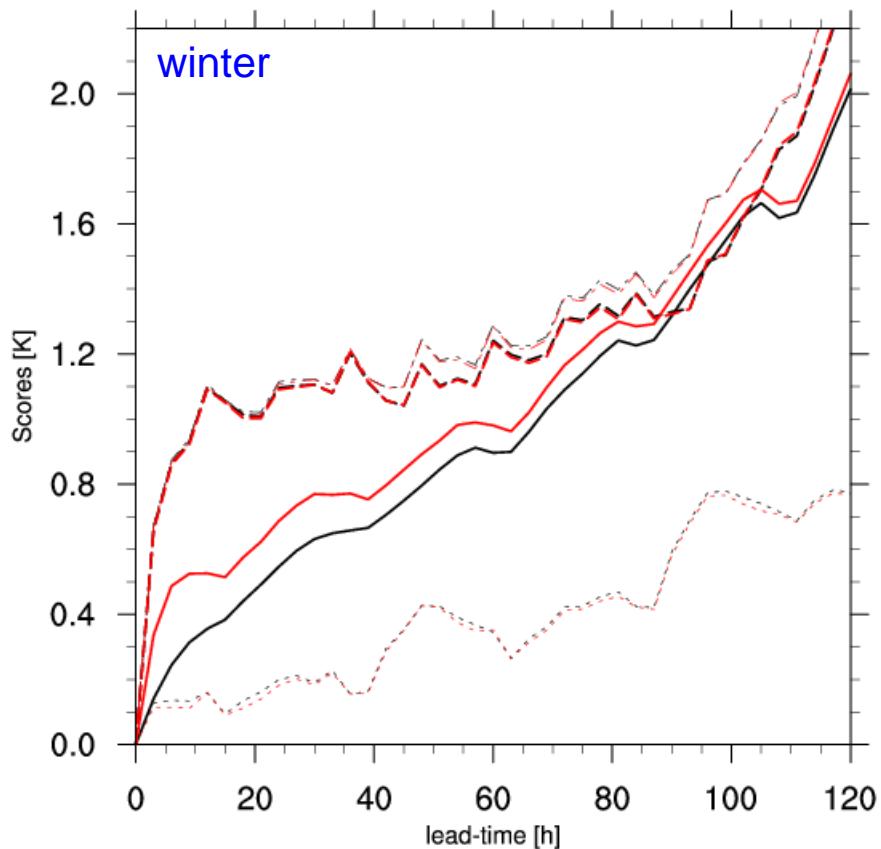
winter

spread / error

lead-time [h]

LBCs plus SPPT — RMEV
LBCs — STDE
— RMSE
abs(BIAS)

case study: 10/09/2014

Nicola Loglisci (ARPA Piemonte)   GM 2015
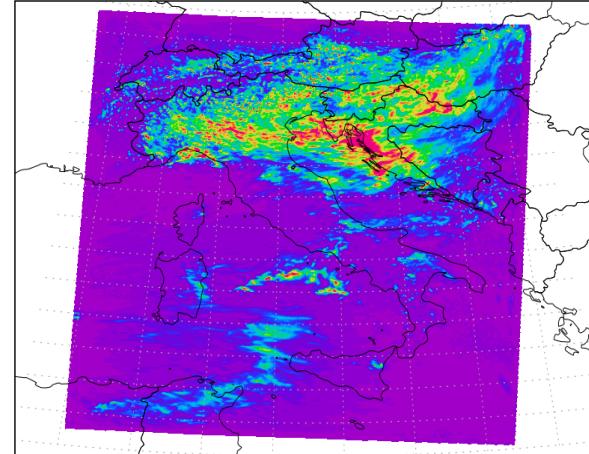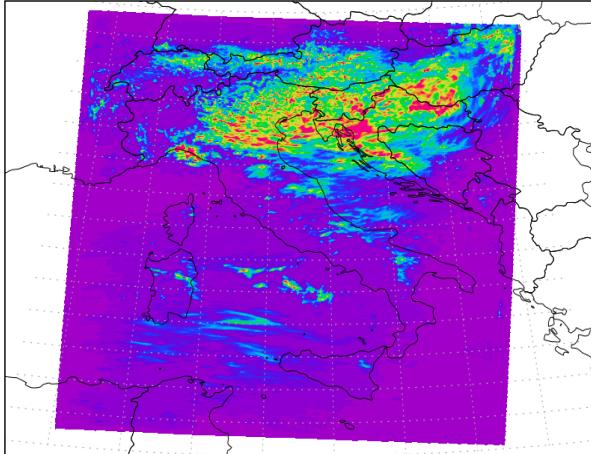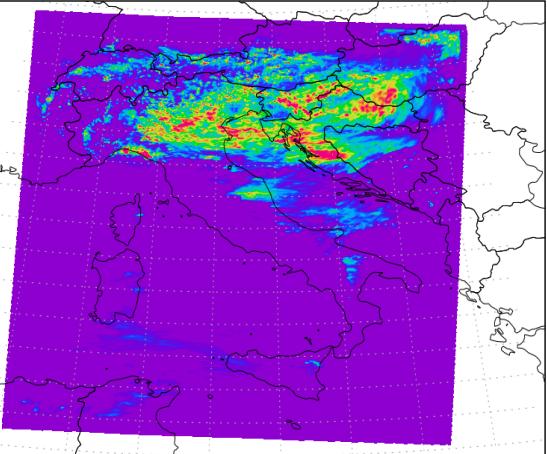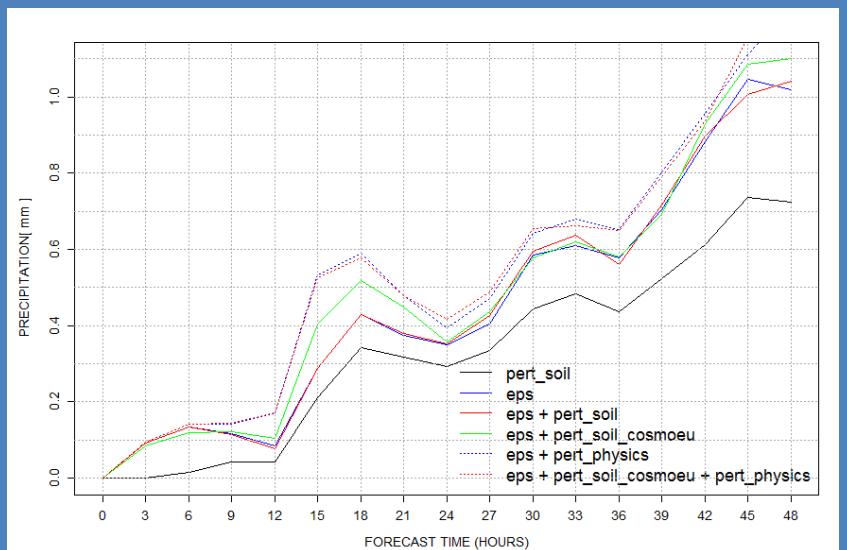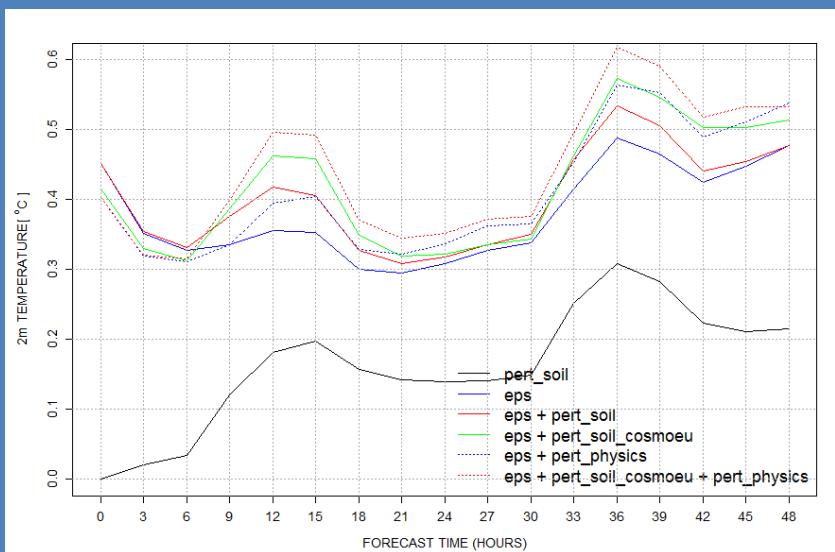
Polish ensemble (TLE-MVE)
T2M – Time-Lagged (left) vs. one deterministic (right) set of BICs:

COTEKINO PP

Start of forecast: 2015-08-28 18:00

Air temperature at 2m – ensemble max-min difference at 24 hour of forecast

Start of forecast: 2015-08-28 18:00

Air temperature at 2m – ensemble max-min difference at 24 hour of forecast

POGODYNKA.PL
SERWIS POGODOWY IMGW-PIB

7
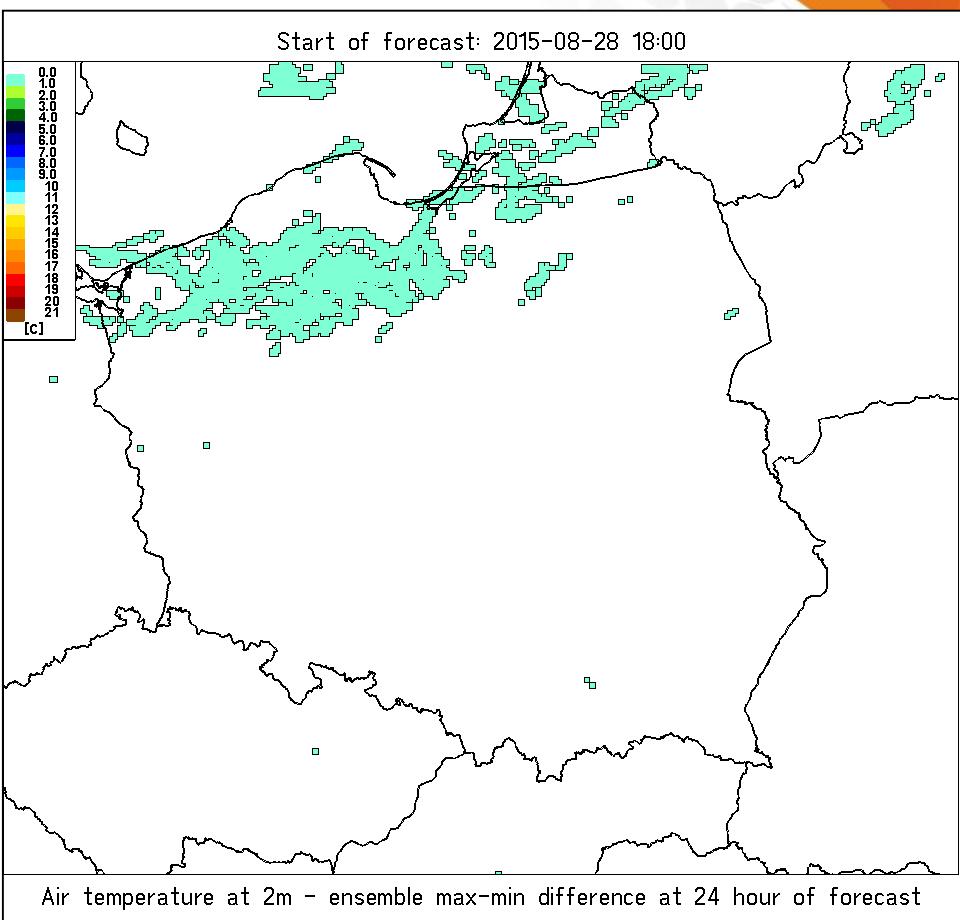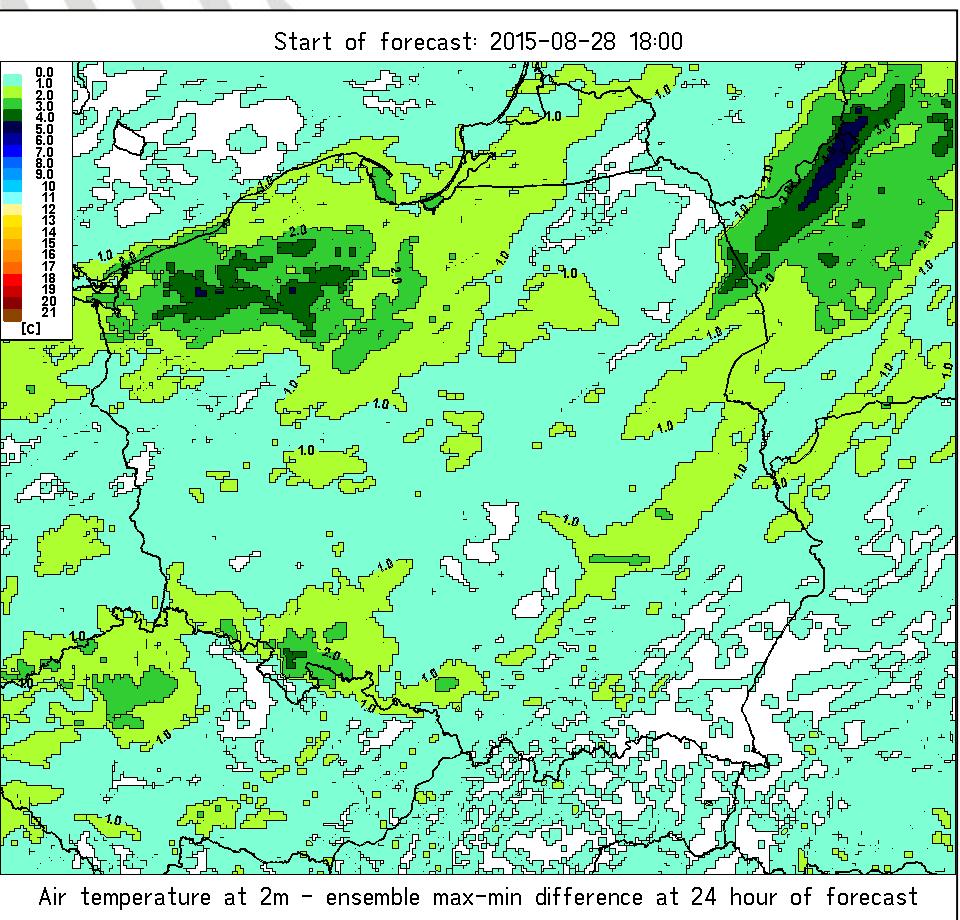
TIGGE-LAM

COSMO-DE-EPS (20 m, 2.8 km)

COSMO-LEPS (16 m, 7 km)

ALADIN-LAEF (17 m, 15 km)

ALADIN-HUN (11 m, 11 km)

PEARP (35 m, 25km)

T2M spread (solid) and skill (dashed); SON 2014; NorthernDomain (~ 722 synop); corrQ
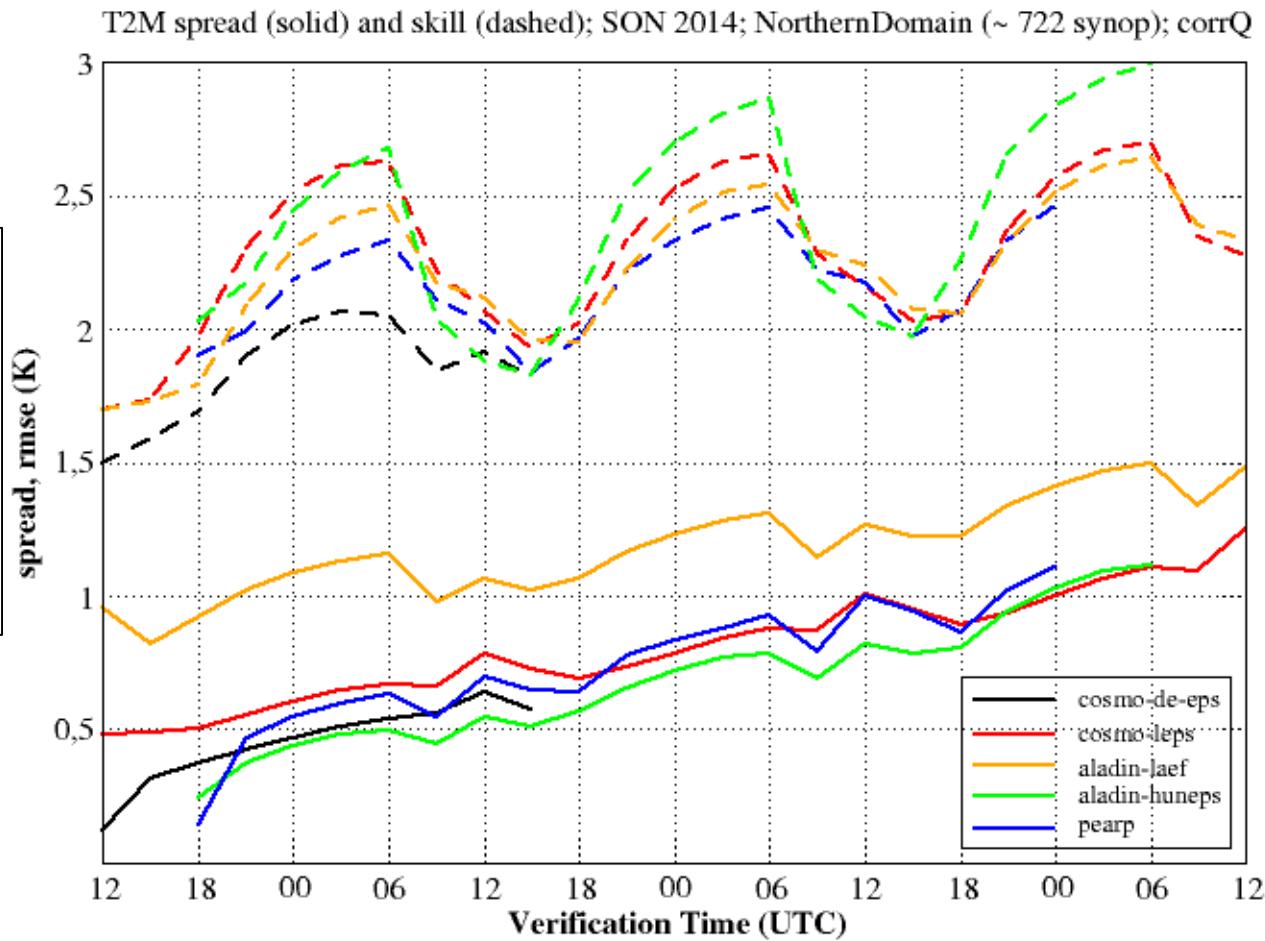
From WG3b talk by J. M. Bettems
Vegetation shading (G. Vogel, JP. Schulz)

20080513 20080520   Surface temperature   Falkenberg/DWD

Legend:
- Measurement (brightness temperature)
- TERRA 4.13 (temperature of top soil layer)
- CLM 3.5 (temperature of vegetation layer)

Axis labels: [°C], Julian day
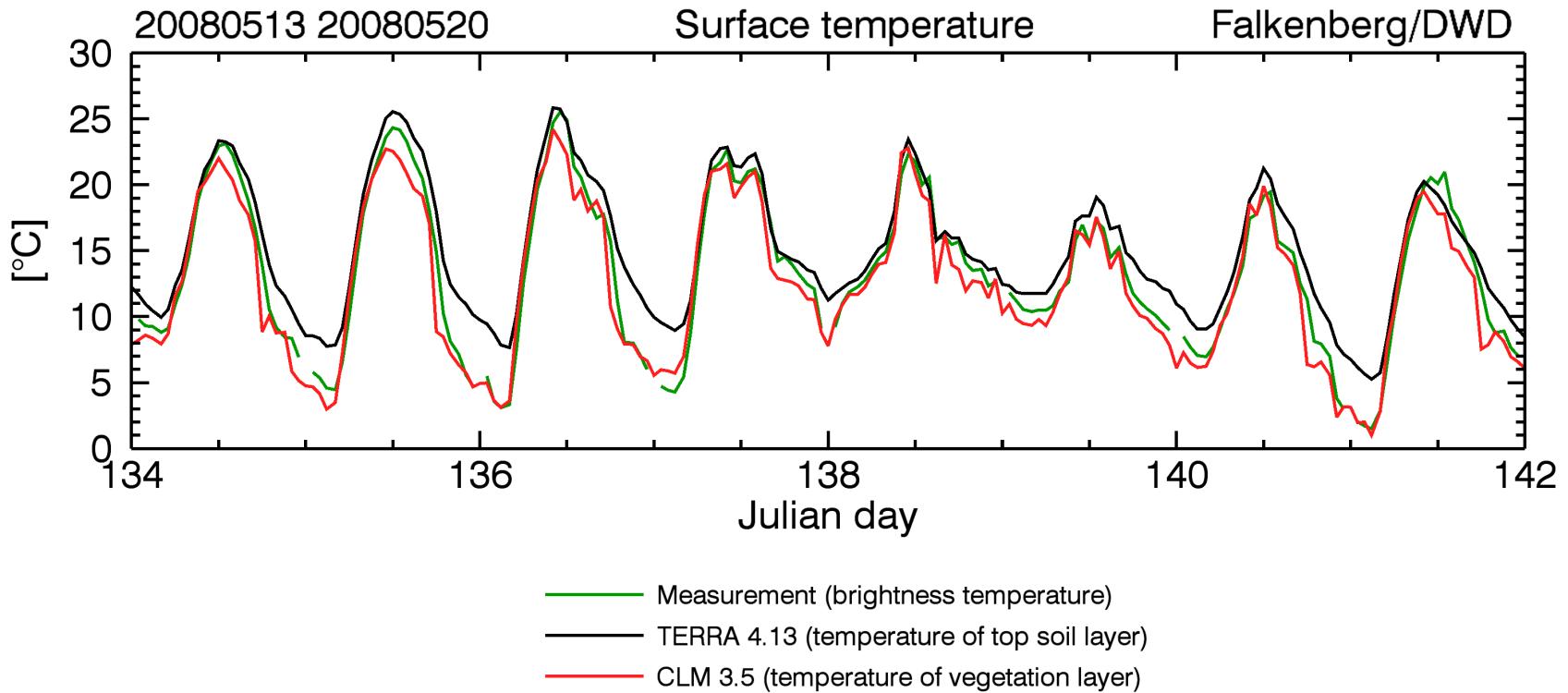
Tasks

- **Task 1:** Study of the spread/skill relation in the ensembles (0.55 FTE)
- **Task 2:** Model perturbation (0.8 FTE)
- **Task 3:** Lower boundary perturbation (3 FTE)
- **Task 4:** Post-processing and interpretation (1.9 FTE)
- **Task 5:** Initial Conditions for the CP ensembles (1.03 FTE)

- 2 year project, 7.28 FTE

Participants

- **ARPA Piemonte**: Nicola Loglisci (0.7 FTE)
- **ARPA SIMC**: Chiara Marsigli, Andrea Montani, Tommaso Diomede (1.1 FTE)
- **COMET**: Francesca Marcucci and possible fellowship (1.0 FTE)
- **DWD**: Christoph Gebhardt (0.1 FTE)
- **IMGW**: Andrzej Mazur, Grzegorz Duniec, Witold Interewicz (2.9 FTE)
- **MCH**: André Walser, Kristina Klasa, Master Thesis (1.1 FTE)
- **RHM**: Elena Astakhova, Dmitry Alferov (0.45 FTE)

Thank you for your attention