Regional Cooperation for Limited Area Modeling in Central Europe

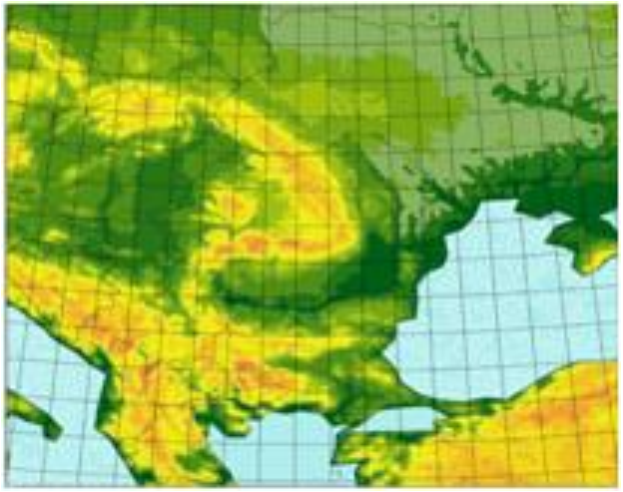
LACE nwp central europe

Data assimilation status in Romania

Mirela Pietrisi

DHMZ SHMU ARSO METEO Slovenia OMSZ ZAMG ROMANIA ANM

Current assimilation setup



- 6 hours assimilation cycle
- LBC - ARPEGE model with 3 h frequency
- SST - from ARPEGE analysis
- CANARI - surface analysis based on SYNOP data
- 3DVAR - data from OPLACE

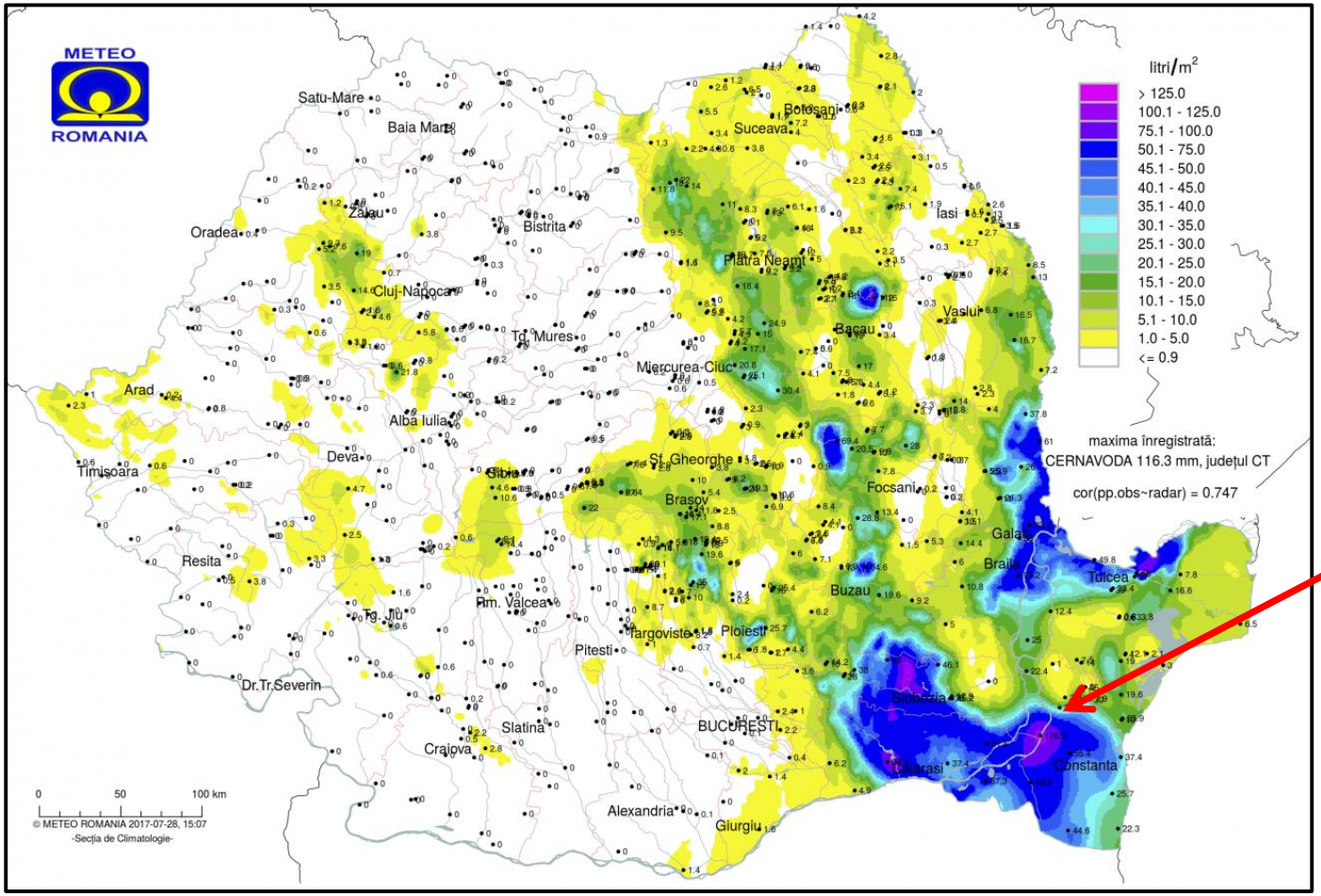
- Δx = 6.5km
- 240 x 240 grid points
- 60 vertical levels
- Linear grid
- Lambert projection

- climatological Bmatrix – ensemble method was used for differences of 6h ALARO forecast (valid at 00 and 12 UTC) downscaled from 2 ARPEGE ensemble members (AEARP)- sample - summer period (01.06 – 31.08.2015)

Current status: tests with cy40t1_bf07 version

- **cy40t1_bf05** – errors in screening and minimization part
- **cy40t1_bf07** + sample_3dvar from Alena

Case study: 27th July 2017



Maximum amount of precipitation:

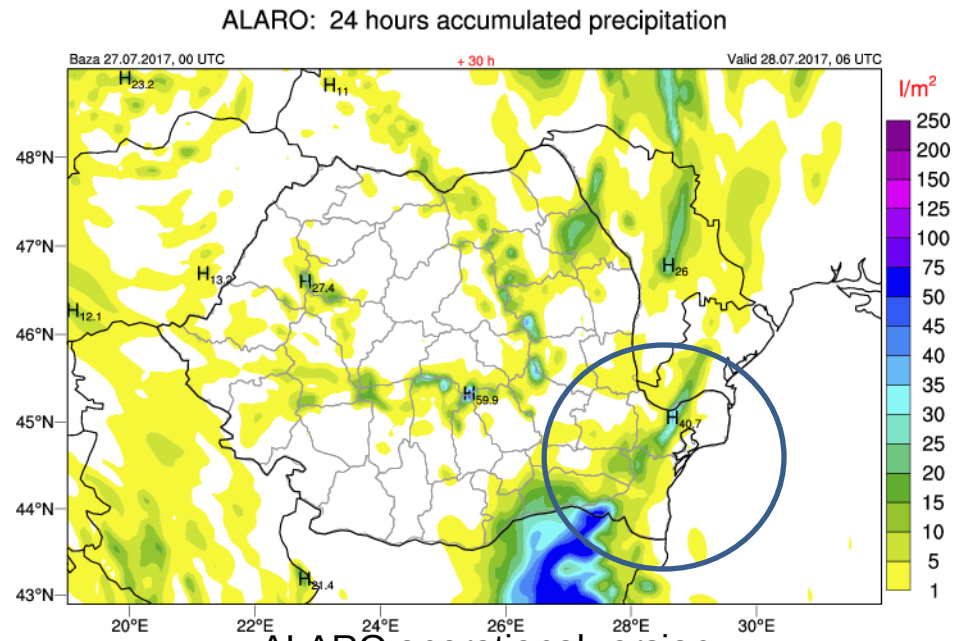
116 l/mp Cernavoda

Observations, 24 h cumulated precipitation,
27.07.2017, 06 UTC – 28.07.2017, 06 UTC (synop and hydro data)

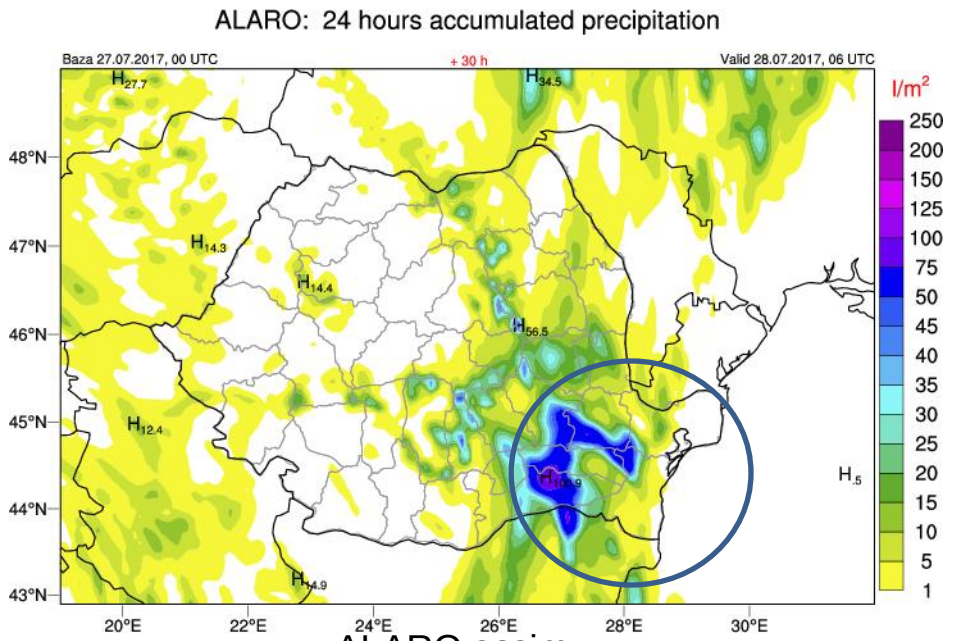
Case study: 27th July 2017

- conventional data + geowind + seviri from OPLACE

24 hours cumulated precipitation (27.07.2017, 06 UTC – 28.07.2017, 06 UTC)



ALARO operational version



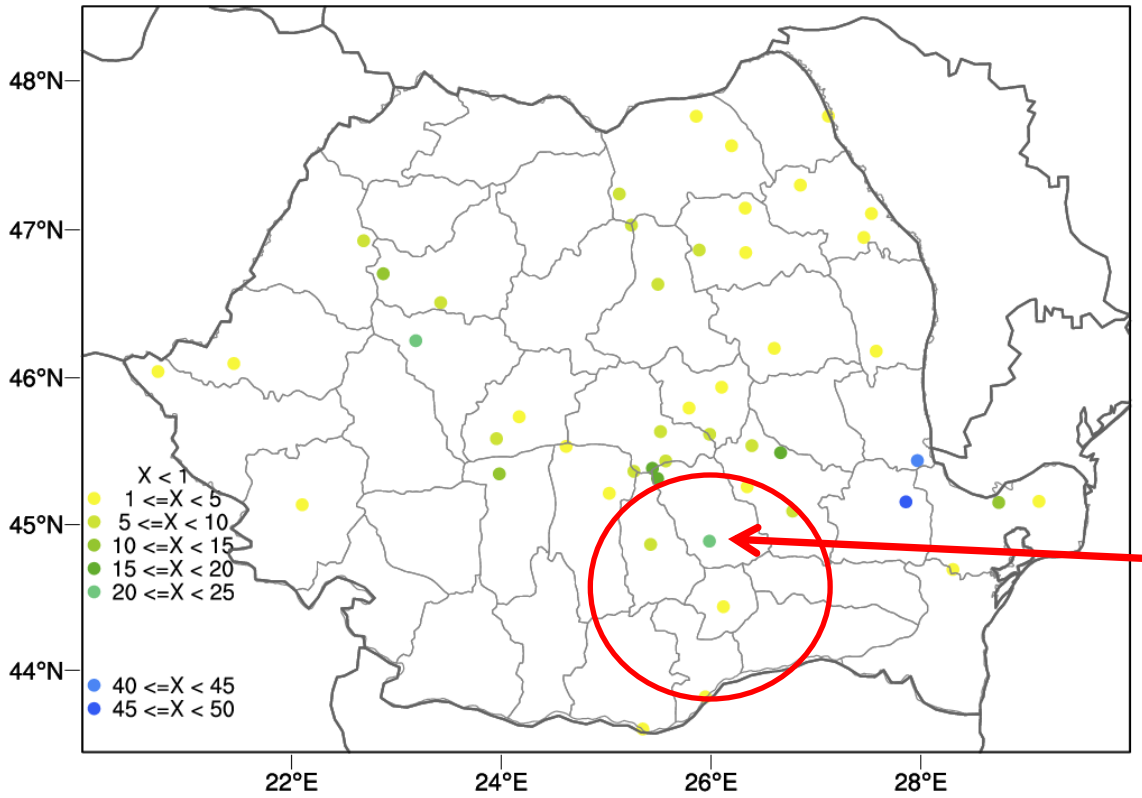
ALARO assim

- Compared to operational version, ALARO with assimilation increased the amount of precipitation in the SE part of the country
- For Danube Delta, both versions failed to simulate the forecasted area of precipitation in respect with the observed one

Case study: 27th July 2017

Observations, 12 h cumulated precipitation

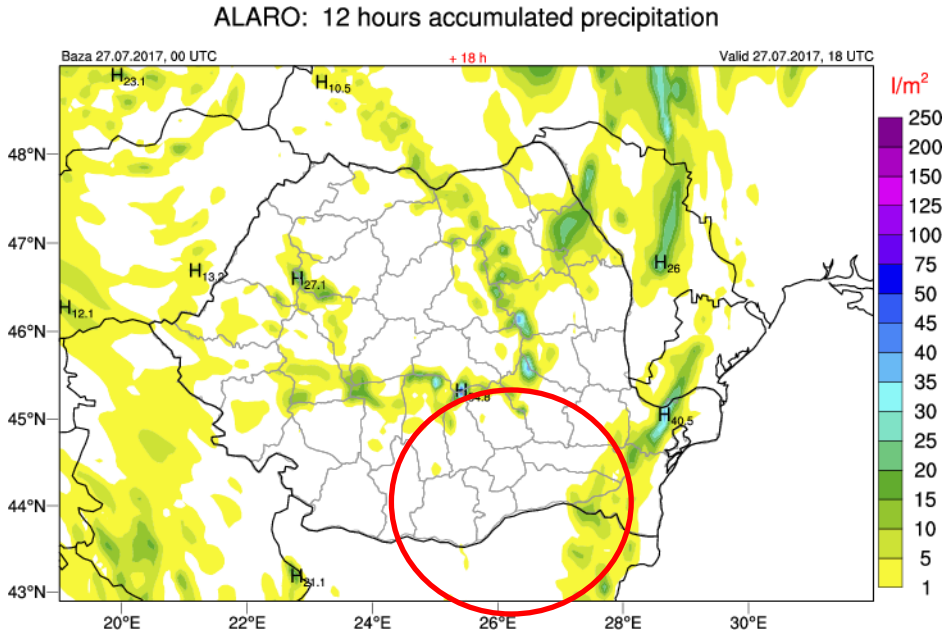
27.07.2017, 06 UTC – 27.07.2017, 18 UTC (synop and hydro data)



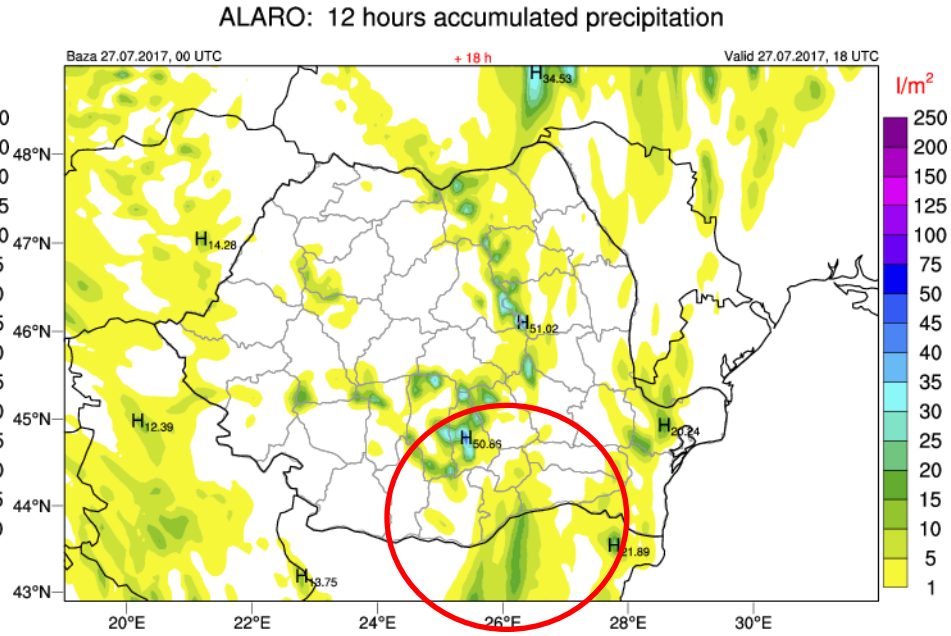
15-20 l/mp

Case study: 27th July 2017

12 hours cumulated precipitation *(27.07.2017, 06 UTC – 27.07.2017, 18 UTC)*



ALARO operational version



ALARO assim

- The operational version failed to simulate the precipitation amount around Bucharest area

Thank you for your attention!