

Data assimilation status in Romania

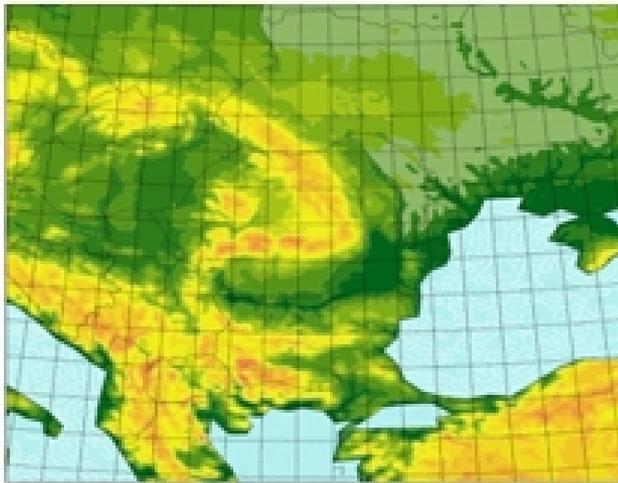
Simona Tascu (on behalf of Mirela Pietrisi)



ARSO METEO
Slovenia



Current assimilation setup



- $\Delta x = 6.5$ km, L60
- 240 x 240 grid points
- time step = 240 s
- Linear grid
- Lambert projection

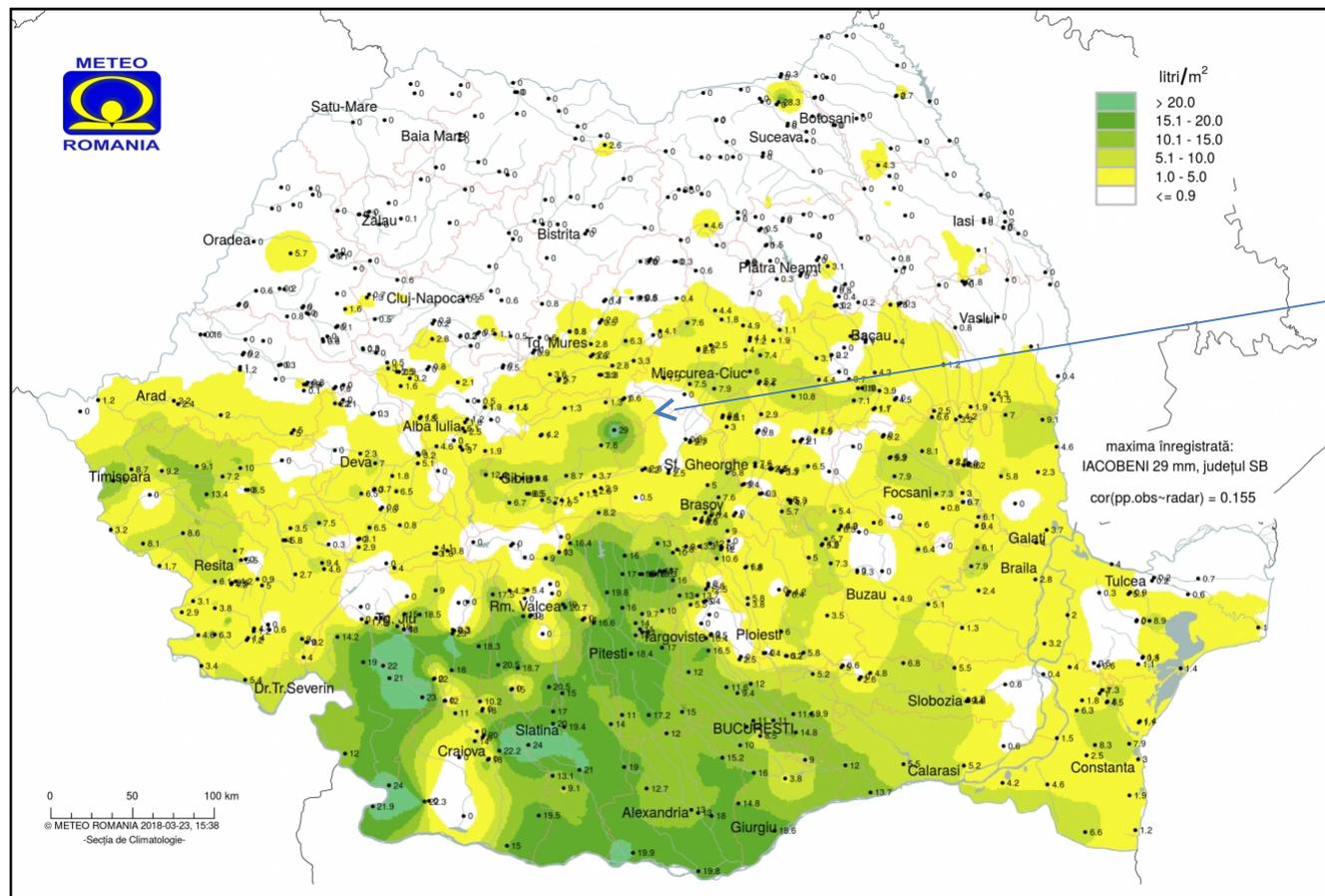
- ALARO-0 baseline, CY40t1_bf07
- 6 hours assimilation cycle
- LBC - ARPEGE model with 3 h frequency
- SST - from ARPEGE analysis
- CANARI - surface analysis based on SYNOP data
- 3DVAR - data from OPLACE

- OBSERVATIONS (OPLACE): SYNOP, TEMP, AMDAR, SEVIRI
- 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

- selection and evaluation of case studies focused on different types of severe weather
- shown the benefit of data assimilation – visible impact in the precipitation field for several cases

Example: 22nd March 2018



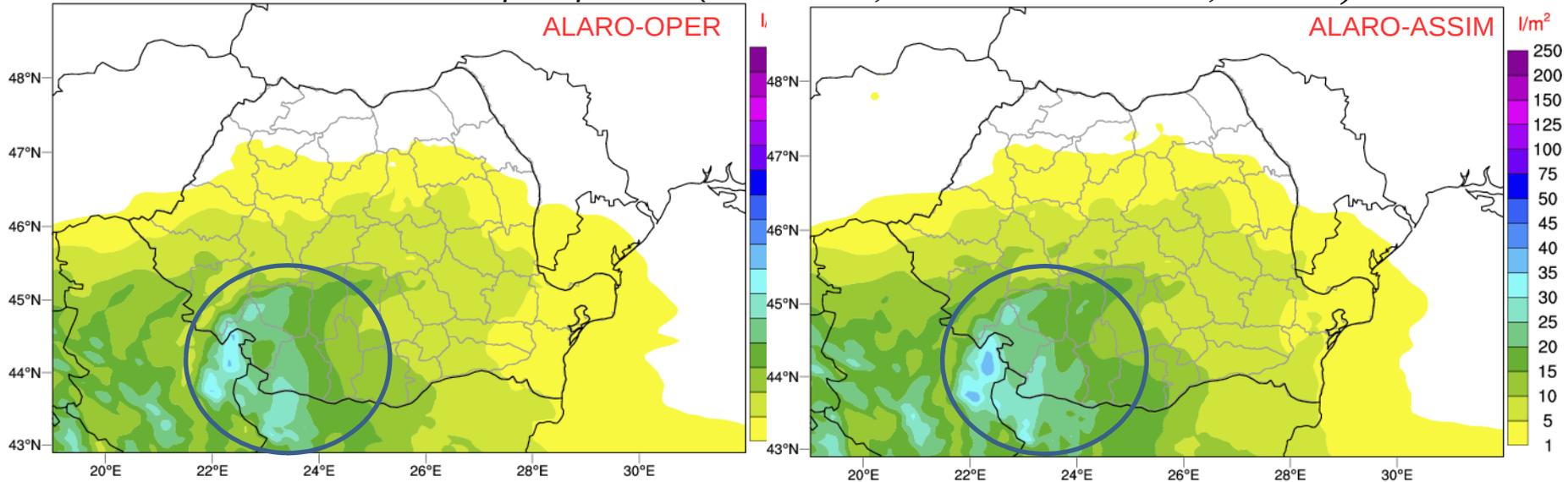
Maximum amount of precipitation:

29 mm Iacobeni

*Observations, 24 h cumulated precipitation,
22.03.2018, 06 UTC – 23.03.2018, 06 UTC (synop and hydro data)*

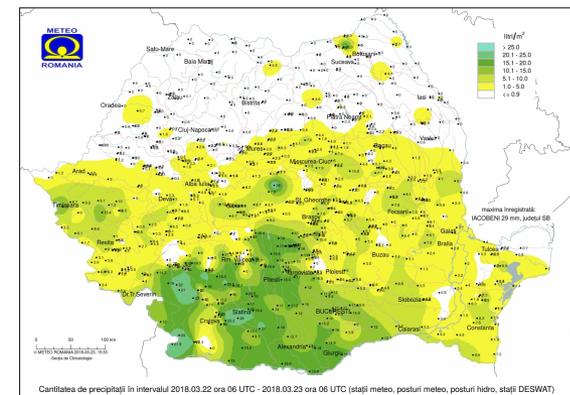
Example: 22nd March 2018

24 hours cumulated precipitation (22.03.2018, 06 UTC – 23.03.2018, 06 UTC)

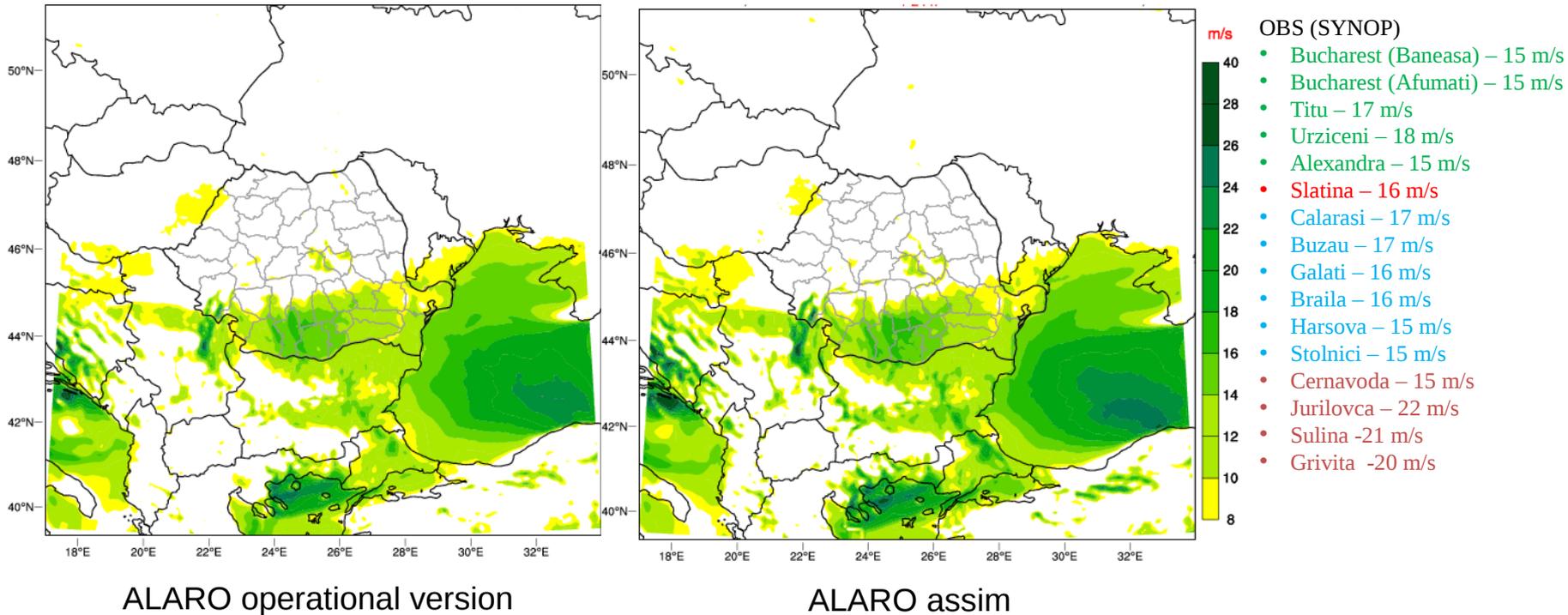


- Compared to operational version, ALARO with assimilation increased the amount of precipitation in the SW part of the country
- For SW Bucharest, the version with assimilation seems closer to the observations (15 – 20 l/mp)

Observation



Example: 23rd March 2018: wind gust



Wind gust, base: 23.03.2018,00 – valid: 23.03.2018, 00 UTC

- ALARO simulated well the wind gust
- very small differences between the two model versions

Outlook: depending on our IBM machine

- Increase the spatial resolution (5 km horizontal resolution and L87)
- Computation of Bmatrix on the new domain ($\Delta x = 5\text{km}$, L60)

Thank you for your attention!