47th EWGLAM and 32nd SRNWP, Norrköping, Sweden: 22 – 25 September 2025

Numerical Weather Prediction using ICON-LAM-2.8km for Romanian territory

Meteo Romania

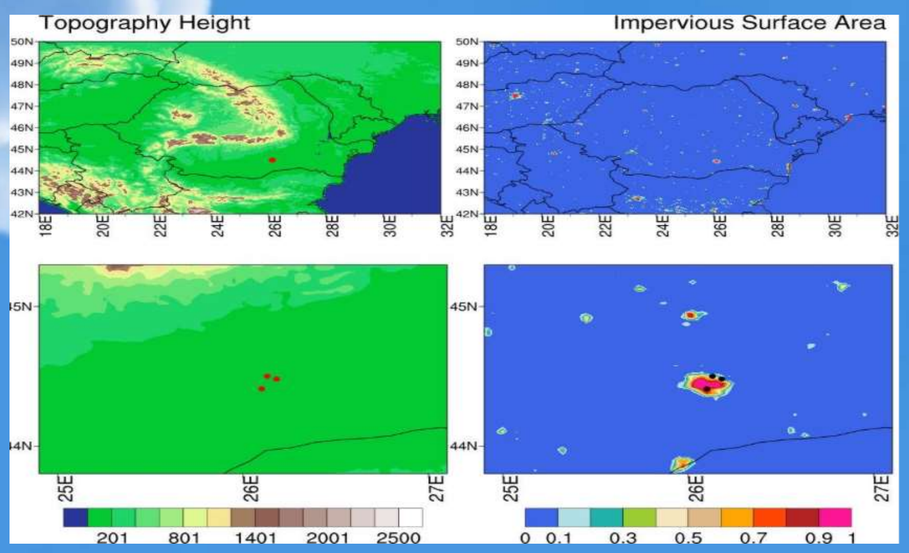
Stefan Dinicilă, Ioan-Stefan Gabrian

stefan.dinicila@meteoromania.ro

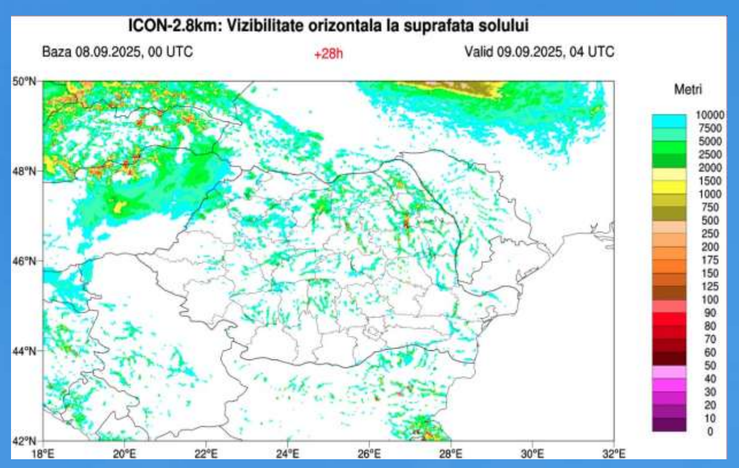
ICON-LAM-2.8km Operational Suite

-ICON RO -2.8km operational suits -Verification results -Testing dedicated products for forecaster

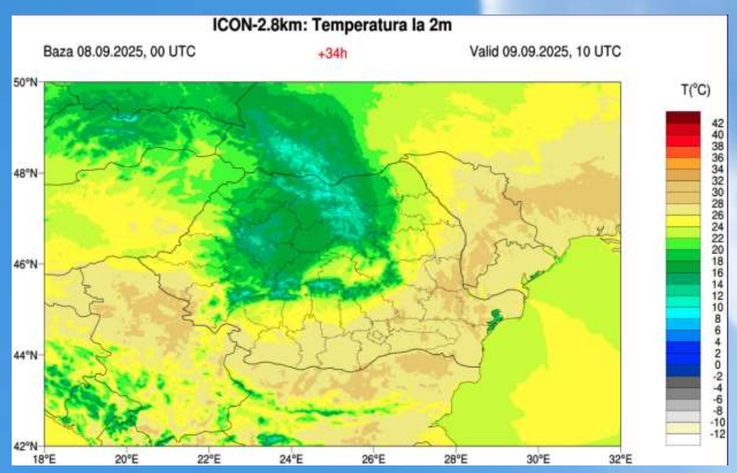
Topography Height & Impervious Surface Area



ICON-LAM-2.8km - Visibity



Temperature at 2m

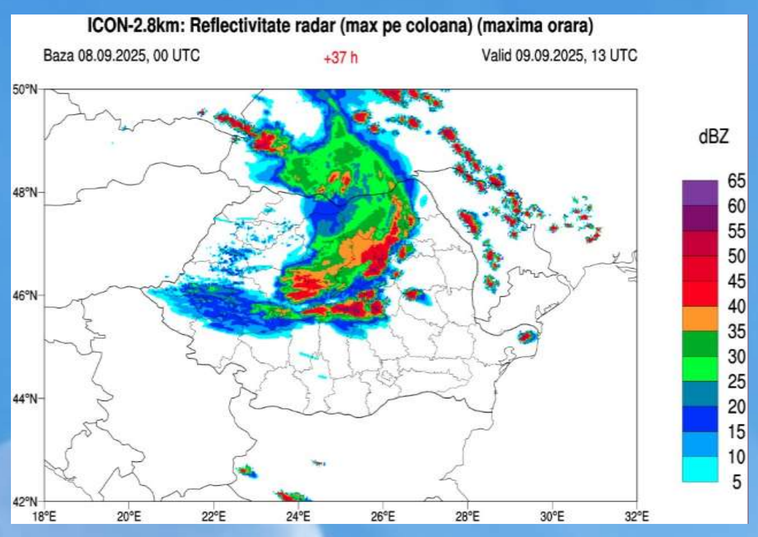


ICON-LAM-2.8km

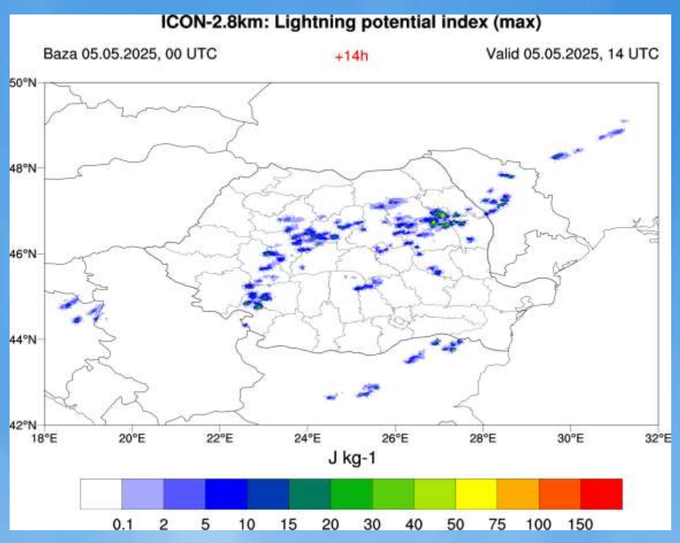
- Operational version 2.6.6
- x= 2.8km ; 147260 grid points, 65 levels, t=24s
- IC & LBC: ICON (grib2), every 3h
- No data assimilations
- Forecast range: 00 UTC 174h and 12 UTC 78h)
- Operational suite for 2 runs/day
- Output: Netcdf, Grib2/regular grid

Operational characteristics

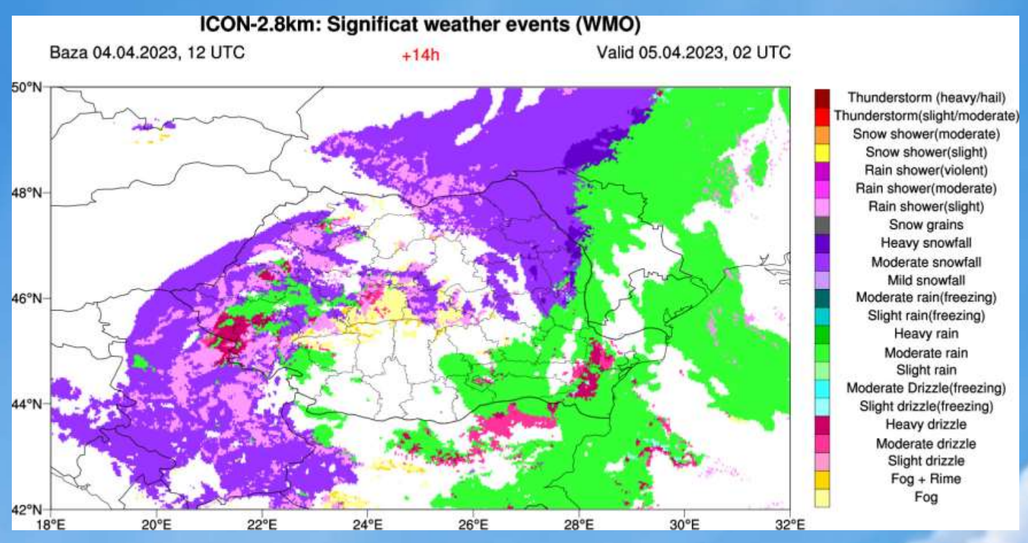
- ➔ Microphysics – COSMO 1 moment scheme
- ➔ convection scheme: Shallow Convection (tuned for the Romanian territory);
- ➔ radiation scheme – ecRad solved on a reduced grid
- ➔ turbulence parameterization which calculates the transport coefficients for momentum and heat in the atmosphere and the transfer coefficients at the ground;
- ➔ multi-layer soil model TERRA ML;
- ➔ Two-time-level predictor-corrector time stepping scheme
- ➔ Testing dedicated products for forecaster



ICON-LAM-2.8km - Radar Reflectivity



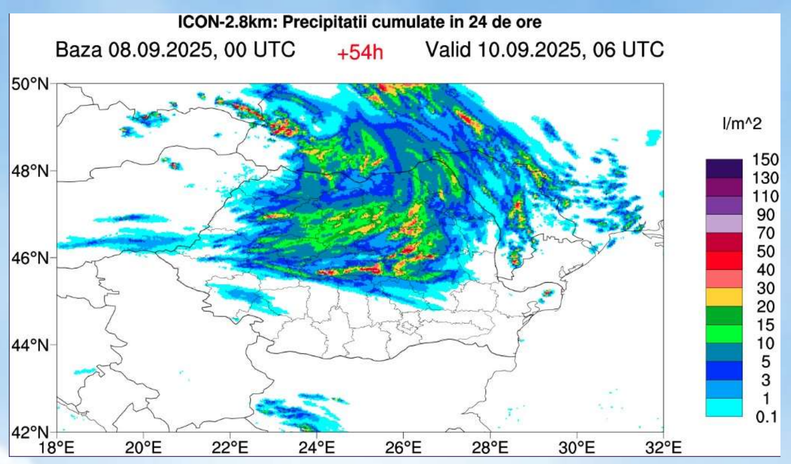
Lightning potential index (max)



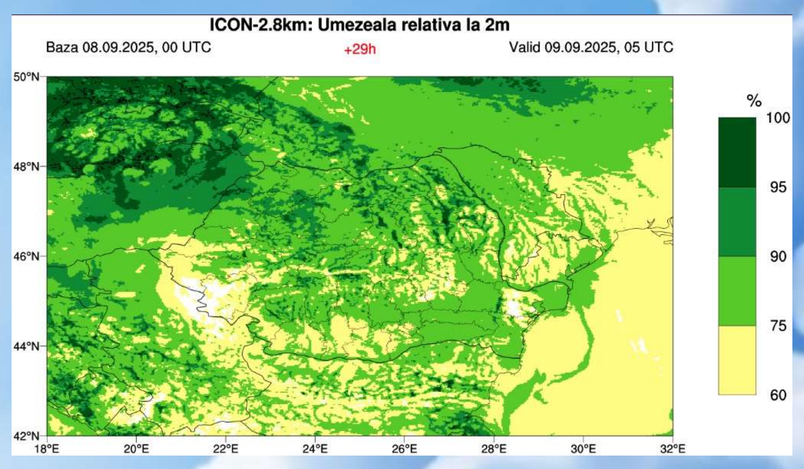
Significant weather events (WMO)

Operational products

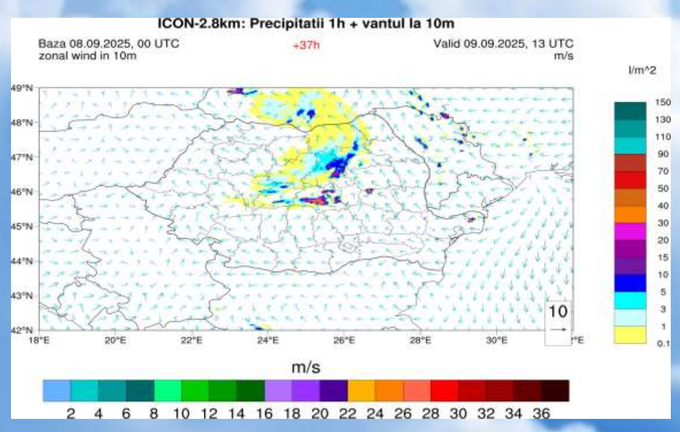
- ◆Temperature 2m,
- ◆Total, convective, grid scale precipitation
- ◆Radar reflectivity,
- ◆2m Relative Humidity, 10m wind speed
- ◆Significant weather events
- ●Meteograms



Precipitation – 24h



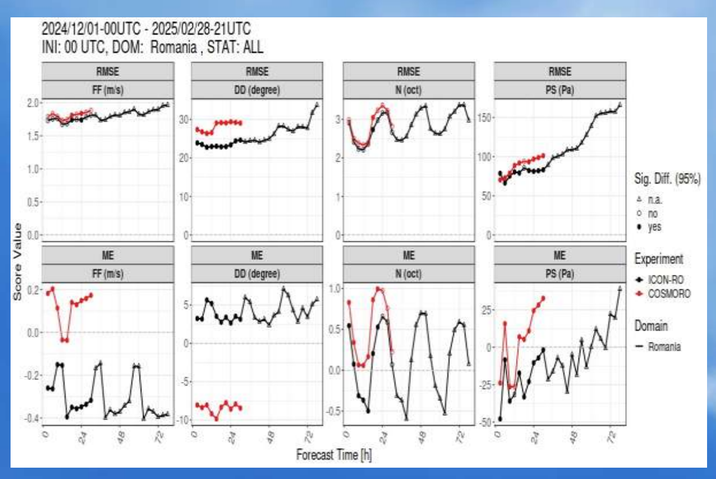
Hourly Precipitation and wind speed 10 m

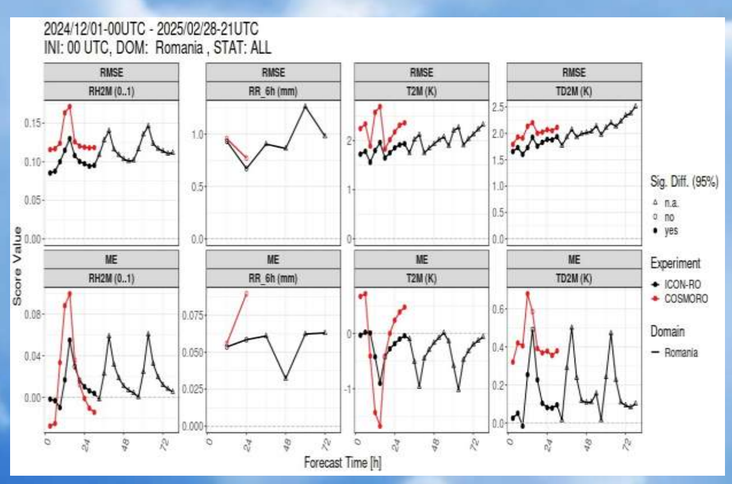


Precipitation over 1 hour and wind at 10 meters

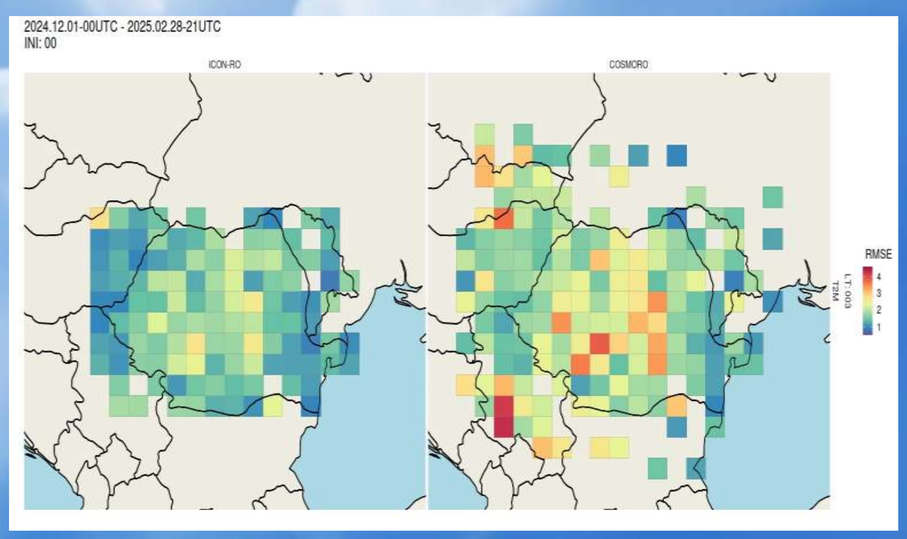
VERIFICATION RESULTS

Continuous parameter annual verification





Continuous parameters annual verification by station



- ✓ The verification was performed using the verification suite MEC/FFV2
- ✓ NMA database of synoptic observations, including all 168 stations
- ✓ Feedback Files are produced automatically from both MARS and NMA observations