

# The operational ALADIN/AROME models at the Hungarian Meteorological Service

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## Computer system

- HPE Apollo 6000 server
- 12 nodes x 2 CPU x 20 cores, 2.2 GHz Intel XeonE5-2698 processors
- 128 GB RAM/node
- Maui 3.3.1 job scheduler
- Torque 6.1.2 queue manager
- Transfer of IFS LBCs from ECMWF via Internet, backup ARPEGE LBCs from Météo-France via Internet & ECMWF re-routing

## Main characteristics of operational ALARO:

- Domain: Continental Europe
- Cycle: cy40t1
- Horizontal resolution: 8 km
- Number of vertical levels: 49
- Grid: linear
- Physics: ALARO-v1b physics
- Lateral boundary conditions: IFS (ECMWF-HRES), 3-hour update frequency
- Data assimilation: 3d-var with 3 hourly cycling + OI-main on the surface
- Observations used in 3d-var:
  - SYNOP (temperature, relative humidity, geopotential),
  - SYNOP-SHIP (temperature, relative humidity, geopotential, wind),
  - TEMP (wind, temperature, specific humidity),
  - AMDAR (wind, temperature),
  - ATOVS (AMSU-A and MHS radiances),
  - MSG/GEOWIND (AMV),
  - MSG (SEVIRI radiances)
- Production is 4 times a day:
  - 0, 12 UTC: +60h,
  - 6 UTC: +48h,
  - 18 UTC: +36h

## Main characteristics of operational AROME/HU:

- Domain: Carpathian Basin
- Cycle: cy43t2\_bf11
- Horizontal resolution: 2.5 km
- Number of levels: 60
- Lateral boundary conditions: IFS (ECMWF-HRES), 1-hour update frequency
- Data assimilation: 3d-var with 3 hourly cycling + OI-main on the surface

- Observations used in 3d-var:
  - SYNOP (wind, temperature, relative humidity, geopotential),
  - TEMP (wind, temperature, specific humidity),
  - AMDAR (wind, temperature, humidity),
  - GNSS ZTD
  - Slovenian and Czech Mode-S MRAR (wind, temperature)
- Production is 8 times a day:
  - 0, 6, 12, 18 UTC: +48h,
  - 3, 9, 15, 21 UTC: +36h

**Main characteristics of AROME-EPS:**

- Cycle: cy43t2\_bf11
- Lateral boundary conditions: IFS (ECMWF-ENS), 3-hour update frequency
- Control + 10 members
- No local data assimilation, surface initial condition from AROME/HU
- Same domain, grid and physics as in AROME/HU
- Production is once a day to 48 h starting from 0 UTC