The operational ALADIN/AROME models at the Hungarian Meteorological Service

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1. The main characteristics of the deterministic operational ALARO suite are as follows:

- Domain: Continental Europe
- Cycle: cy38t1
- Horizontal resolution: 8 km
- Vertical levels: 49
- Grid: linear
- Physics: ALARO-1 physics
- Lateral boundary conditions: IFS (ECMWF), 3 hour update frequency
- Data assimilation: 3-dvar with 6 hourly cycling + Canari (OI) on the surface/soil
- Observations used in 3d-var: SYNOP (temperature, relative humidity, geopotential), SYNOP-SHIP (temperature, relative humidity, geopotntial, wind), TEMP (wind, temperature, specific humidity), AMDAR (wind, temperature), ATOVS (AMSU-A and AMSU-B radiances), MSG/GEOWIND (AMV), MSG (SEVIRI radiances)
- Observations used in the surface assimilation: SYNOP (temperature, relative humidity, geopotential)
- Production is performed 4 times / day: 00 UTC: +60h, 06 UTC: +48h, 12 UTC: +60h, 18 UTC: +36h

2. The main characteristics of the ALARO LAMEPS system are as follows:

- Cycle: cy38t1
- 11 members downscaled from ECMWF ENS, 3 hour update frequency
- Same grid and physics is used as for the deterministic suite above
- Production once / day to +60h starting from 18 UTC

3. The main characteristics of the operational AROME suite are as follows:

- Domain: Carpathian Basin
- Cycle: cy38t1
- Horizontal resolution: 2.5 km
- Vertical levels: 60
- Lateral boundary conditions: IFS (ECMWF), 1 hour update frequency
- Data assimilation: 3-dvar with 3 hourly cycling + OI_main surface analysis
- Observations used in 3d-var: SYNOP (wind, temperature, relative humidity, geopotential), SYNOP-SHIP (temperature, relative humidity, geopotntial, wind), TEMP (wind, temperature, specific humidity), AMDAR (wind, temperature, humidity), Slovenian Mode-S
- Production is performed 8 times / day: 00 UTC: +48h, 03 UTC: +36h, 06 UTC: +48h, 09 UTC: +36h, 12 UTC: +48h, 15 UTC: +36h,, 18 UTC: +48h, 21 UTC: +36h

4. Porting of CY40T1

- CY40T1_bf06 is installed on the IBM machine, e-suite running, operational implementation is planned by summer 2017.

Major developments:

1. ALARO-1: we introduced the new T2m diagnostics after extensive testing
2. ALARO EPS: we have introduced ECMWF ENS LBCs instead of PEARP LBCs
3. AROME data assimilation: we introduced OI_main operationally together with a new B matrix computed from an AROME EDA experiment. We also introduced AMDAR_humidity and Slovenian Mode-S in AROME DA operationally, together with a longer TEMP DA window to be able to use 02 UTC soundings