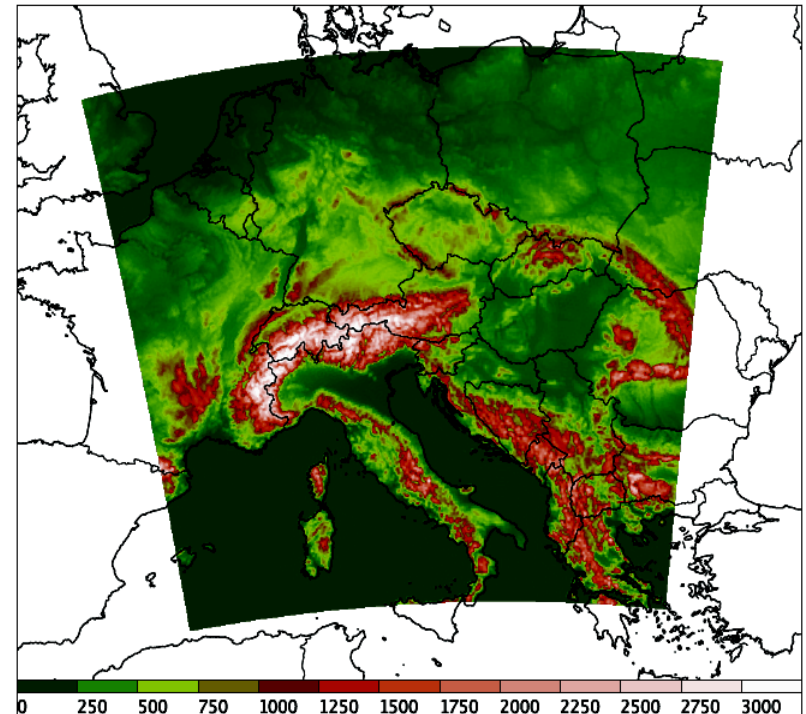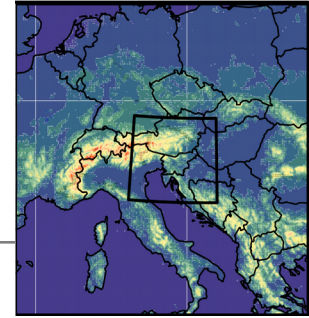# Towards 1-h RUC: Perspectives in Slovenia

ALADIN-Slovenia

- ALARO-0 cy35t1, 4.4 km resolution, 87 levels

- 3-hourly data assimilation, 8 production runs (72 or 36 h); starting at 1:45, 4:45, 7:45 UTC

- 3D-Var + CANARI + SST replacement

- Space-consistent coupling (no separate initialization)
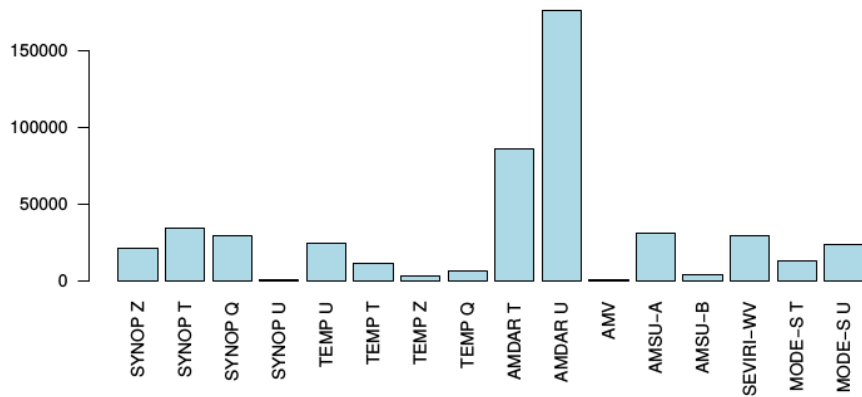
- Climatological background errors
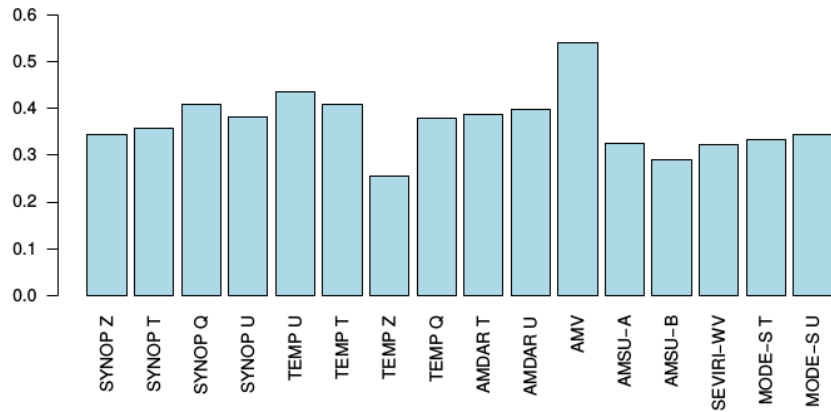
Impact of observations - DFS

Full domain

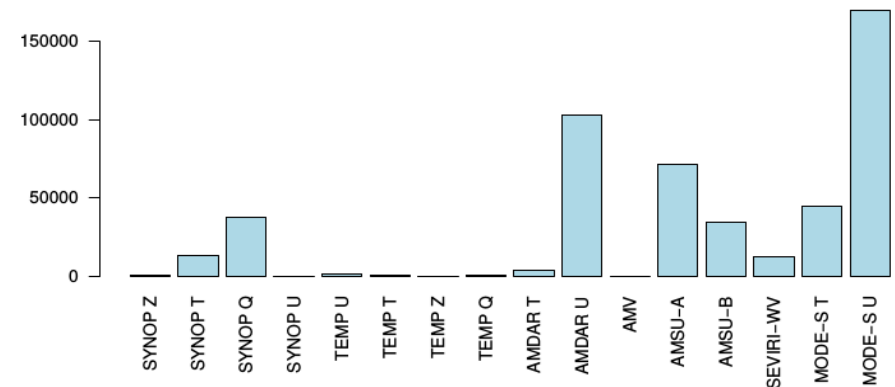**Absolute Degree of Freedom for Signal (DFS)**

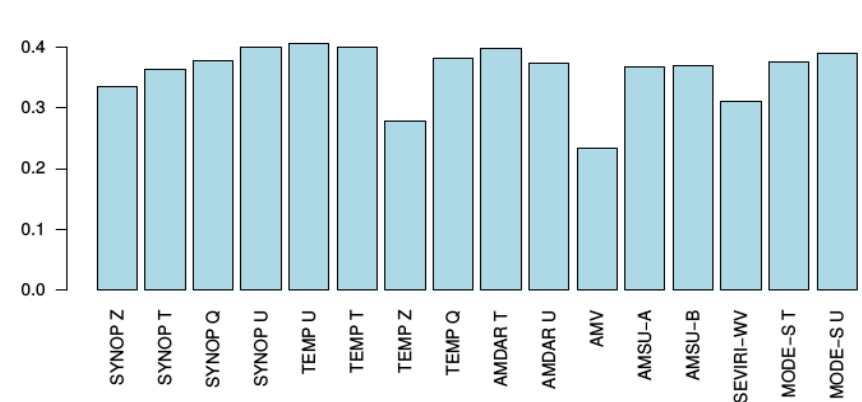**Relative Degree of Freedom for Signal (DFS/observations)**
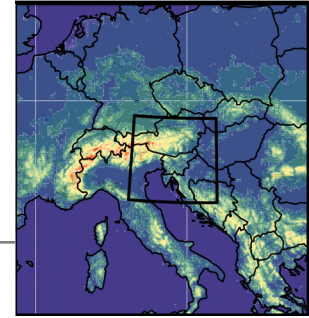

Zoom over Slovenia

Absolute Degree of Freedom for Signal (DFS)
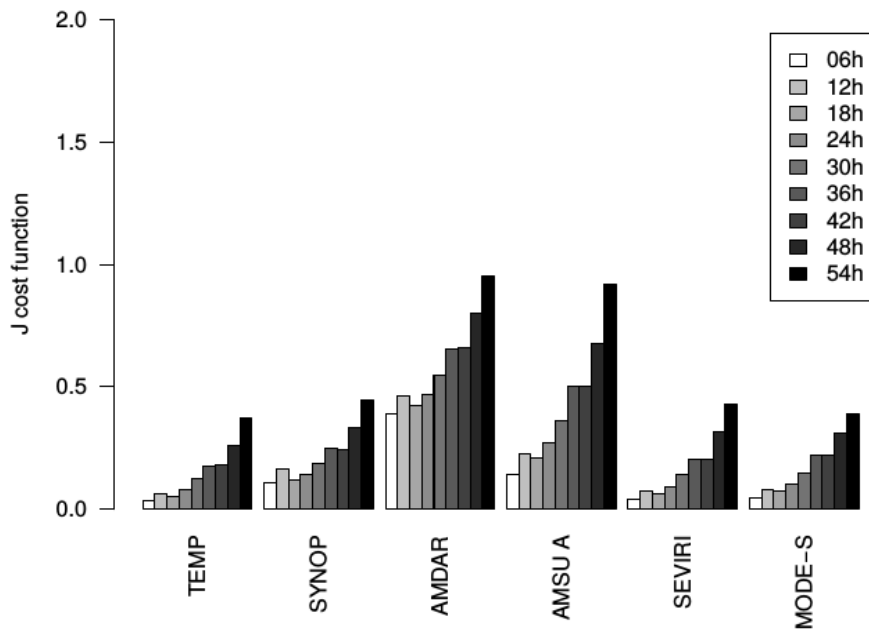

Relative Degree of Freedom for Signal (DFS/observations)
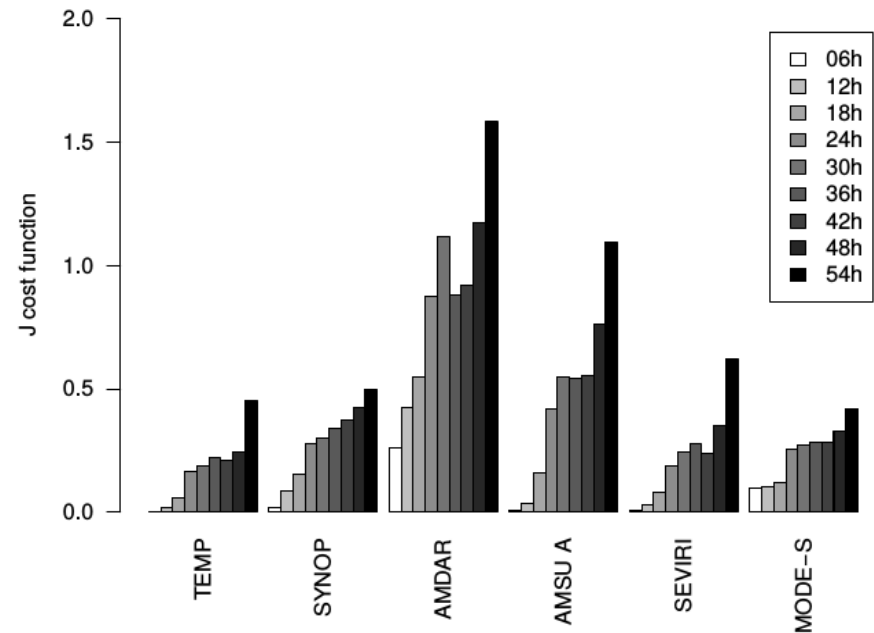
Impact of observations on forecast - MTEN

Full domain

Zoom over Slovenia

High-frequency observations

- Surface automatic stations
- Radar (implementation postponed in SI)
- Mode-S aircraft observations
- Ground GPS (E-GVAP and local data)
- Geostationary satellite (reflectivity, winds)
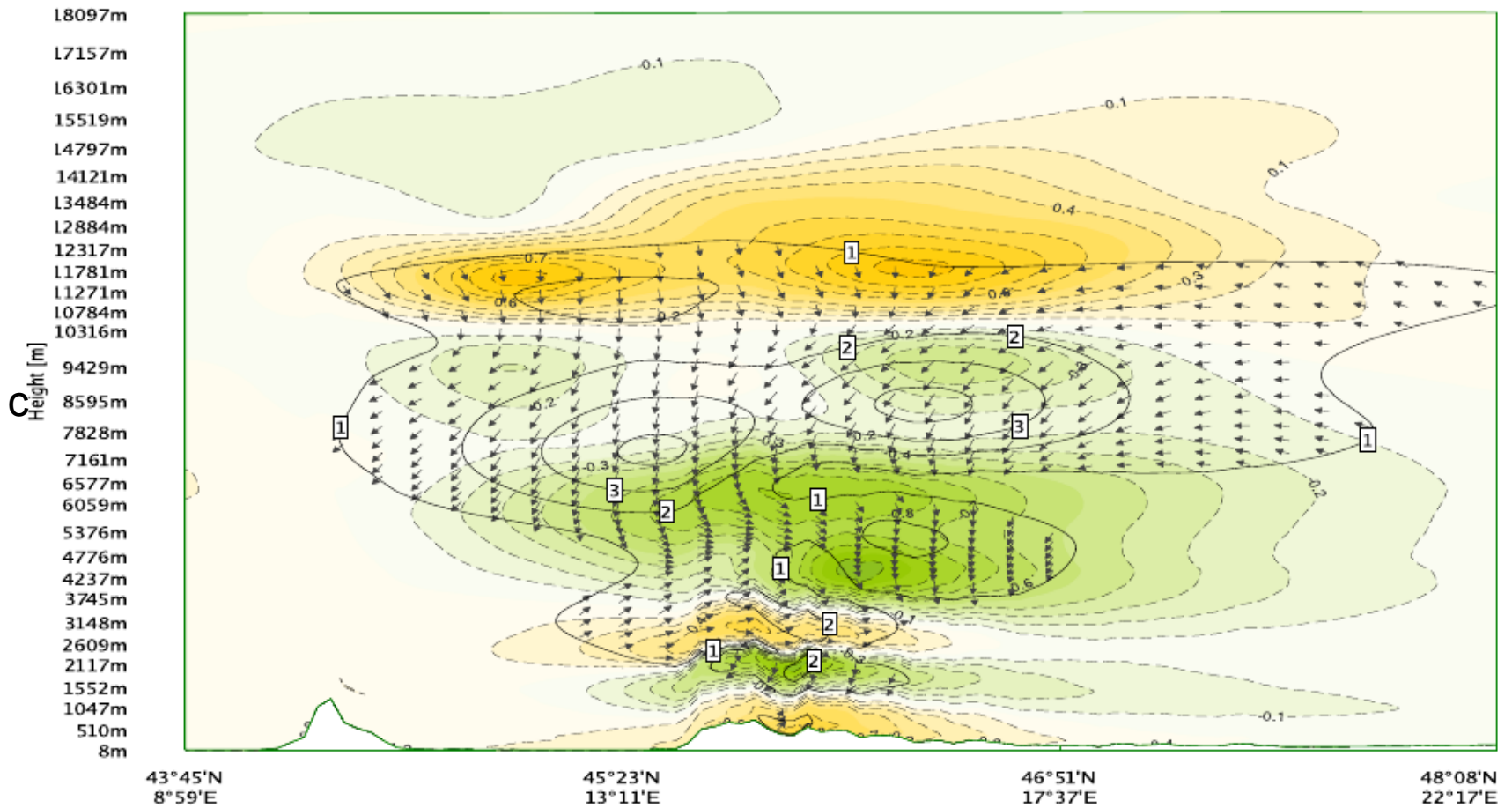
Surface (automatic) observations
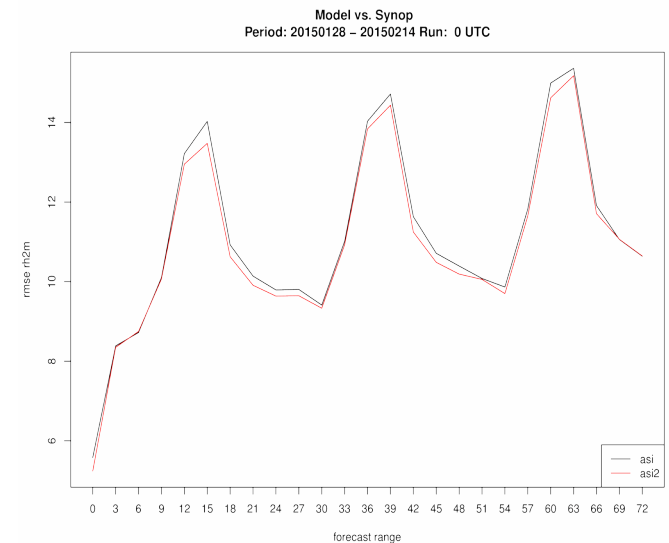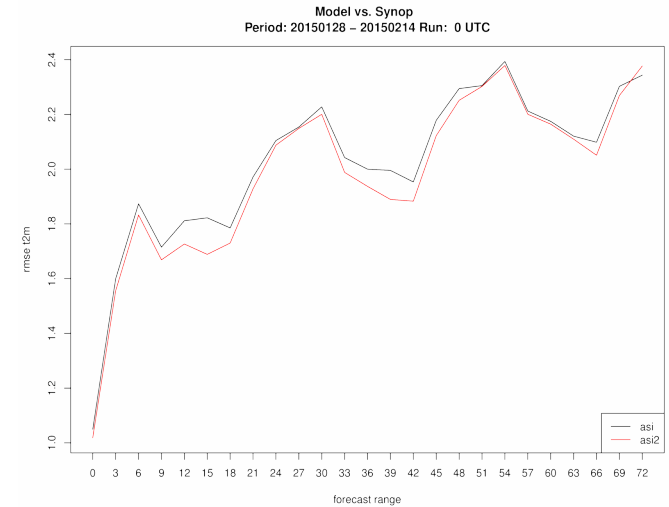
Expanding Mode-S network

- Currently 4 radars are receiving Mode-S MRAR (2xSI, CZ, AT)

- Operational in Slovenia

- Contains wind and temperature, no humidity

- Exchange did not start
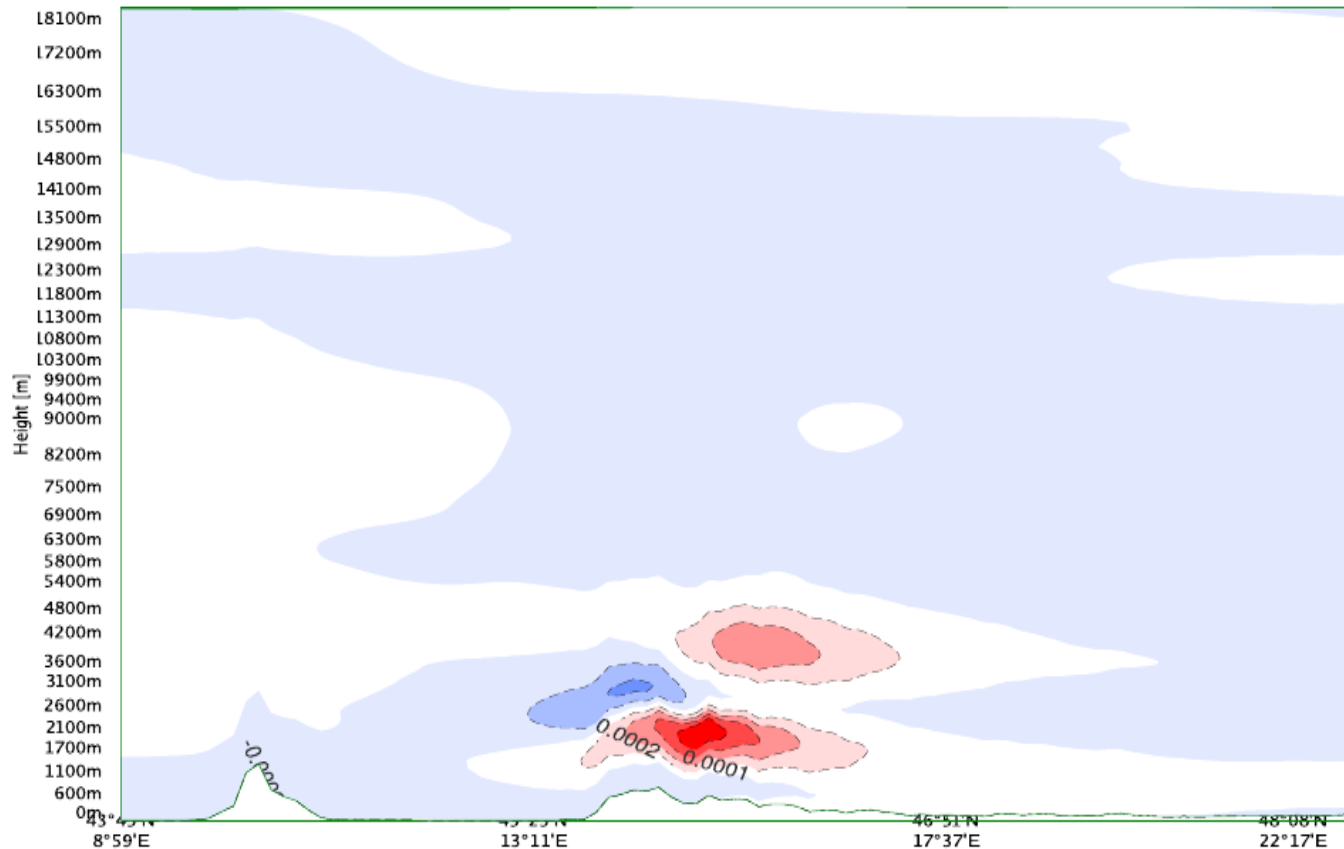
- A goal: make it free for LACE NMS if possible!

- Prague Airport(CZ)
- Koralpe(AT)
- Ljubljana Airport(SI)
- Ljubljana(SI)
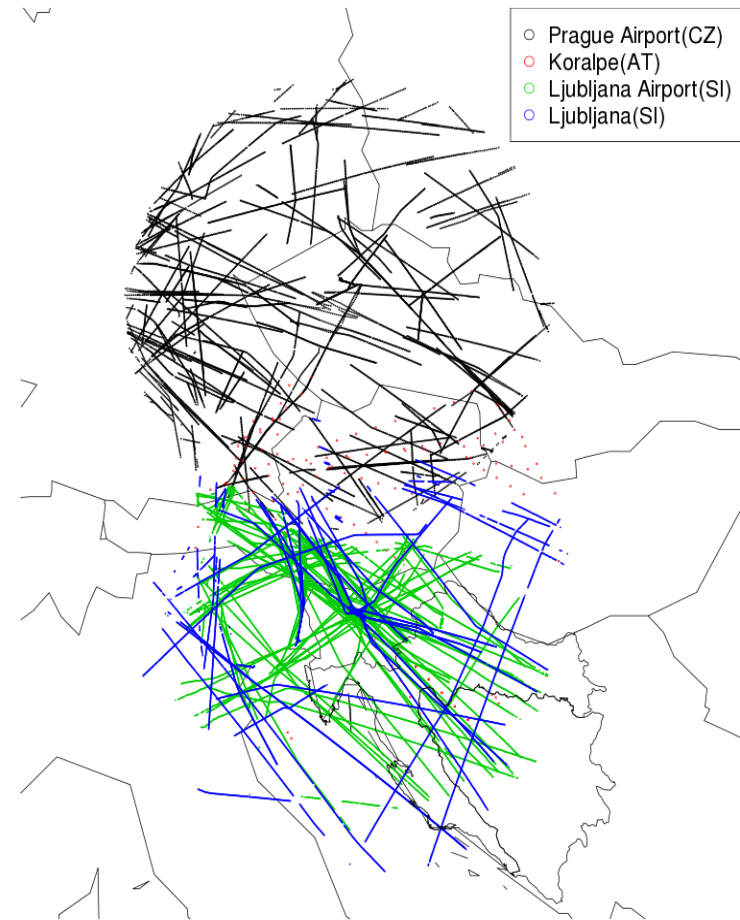
Increment caused by Mode-S

Increment caused by Mode-S (2)

- If no humidity is available, analysis relies critically on multivariate relation in background errors
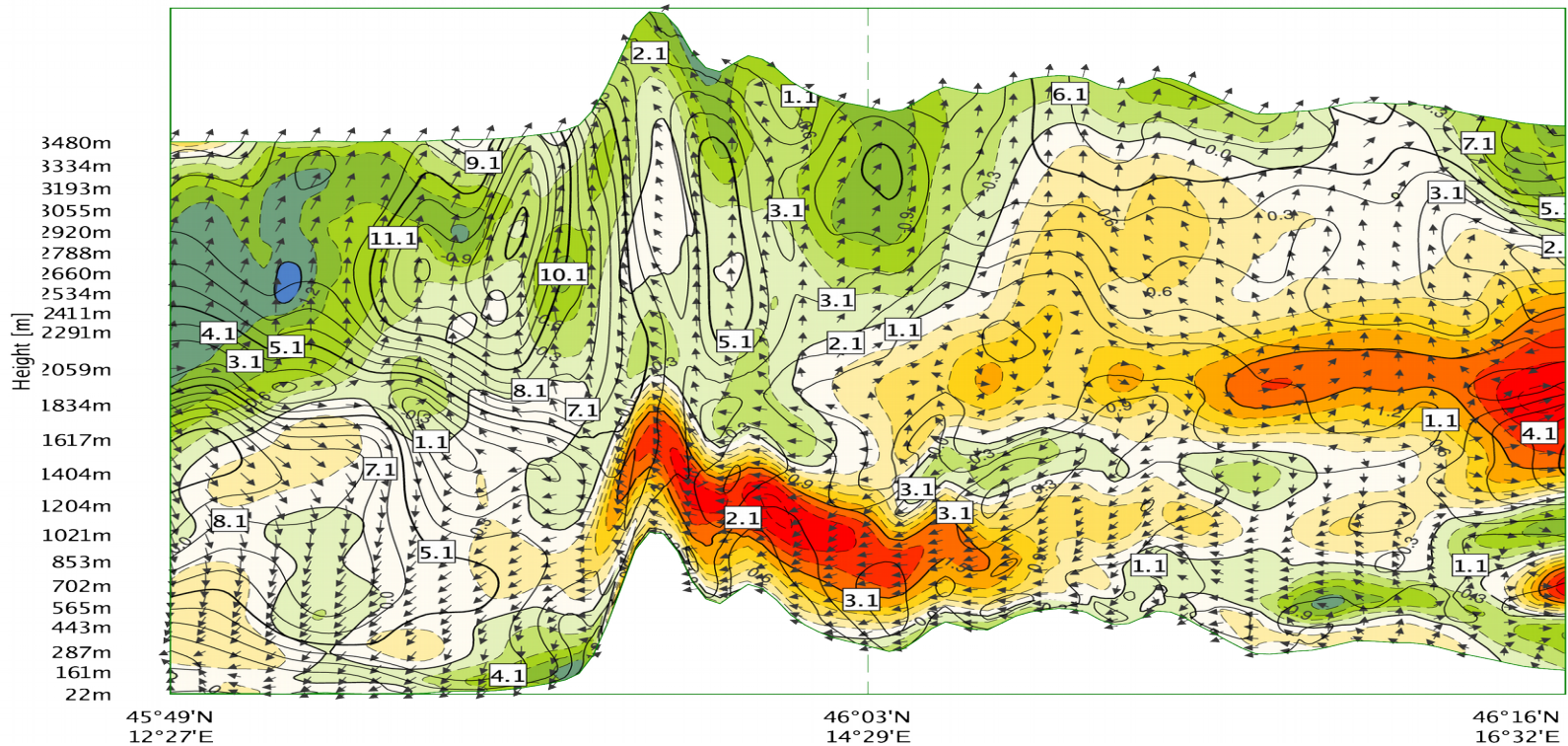
# Very preliminary issues in 1-h RUC: a case of freezing rain storm

- Jan/Feb 2014: Severe and persistent freezing rain over Slovenia

- Potential value of rapidly available NWP for nowcasting applications (railways, electricity infrastructure)

HORIZONTAL CROSS-SECTION
01.02.2014 06:00

VERTICAL CROSS_SECTION
01.02.2014 18:00
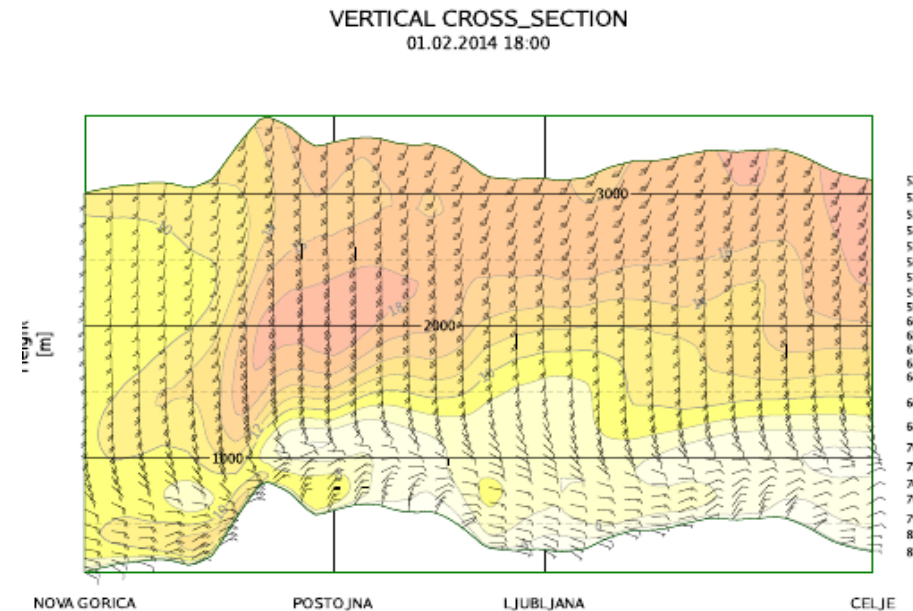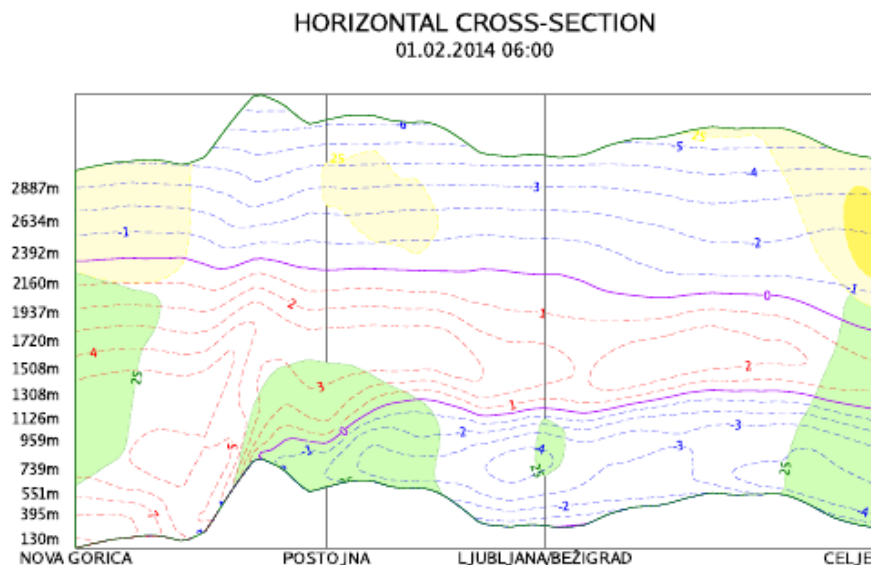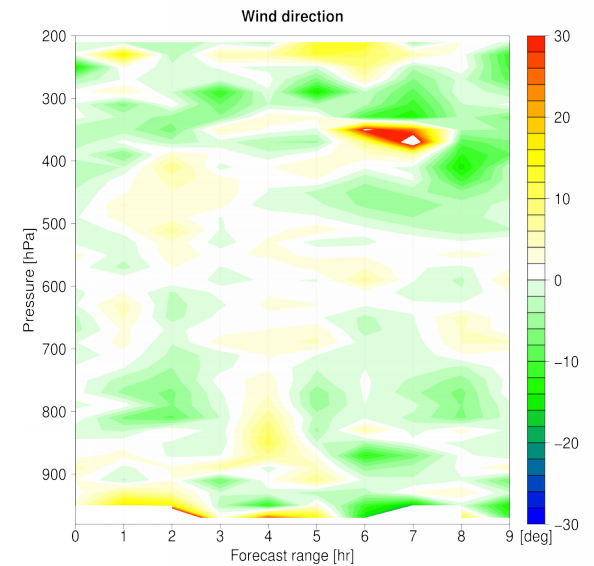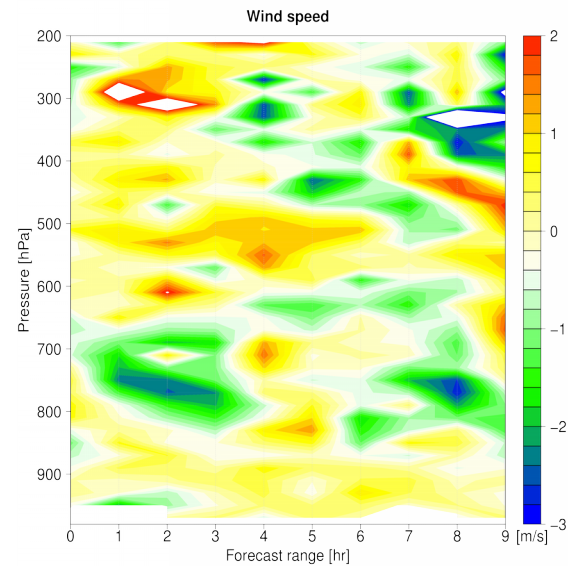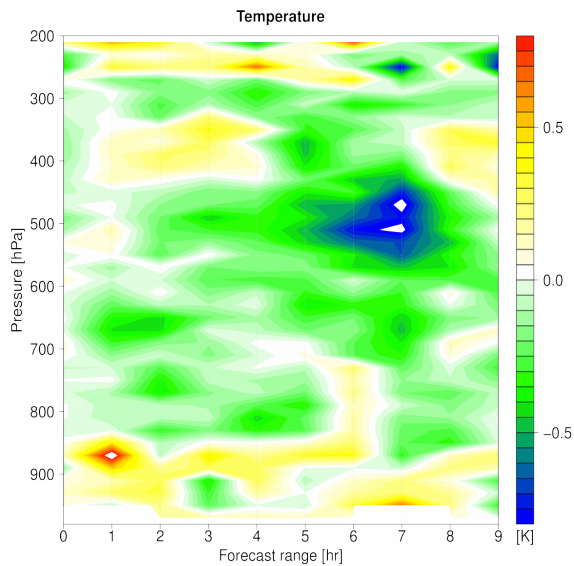
RUC 3h vs. RUC 1h - analysis

RUC 3h vs. RUC 1h - analysis
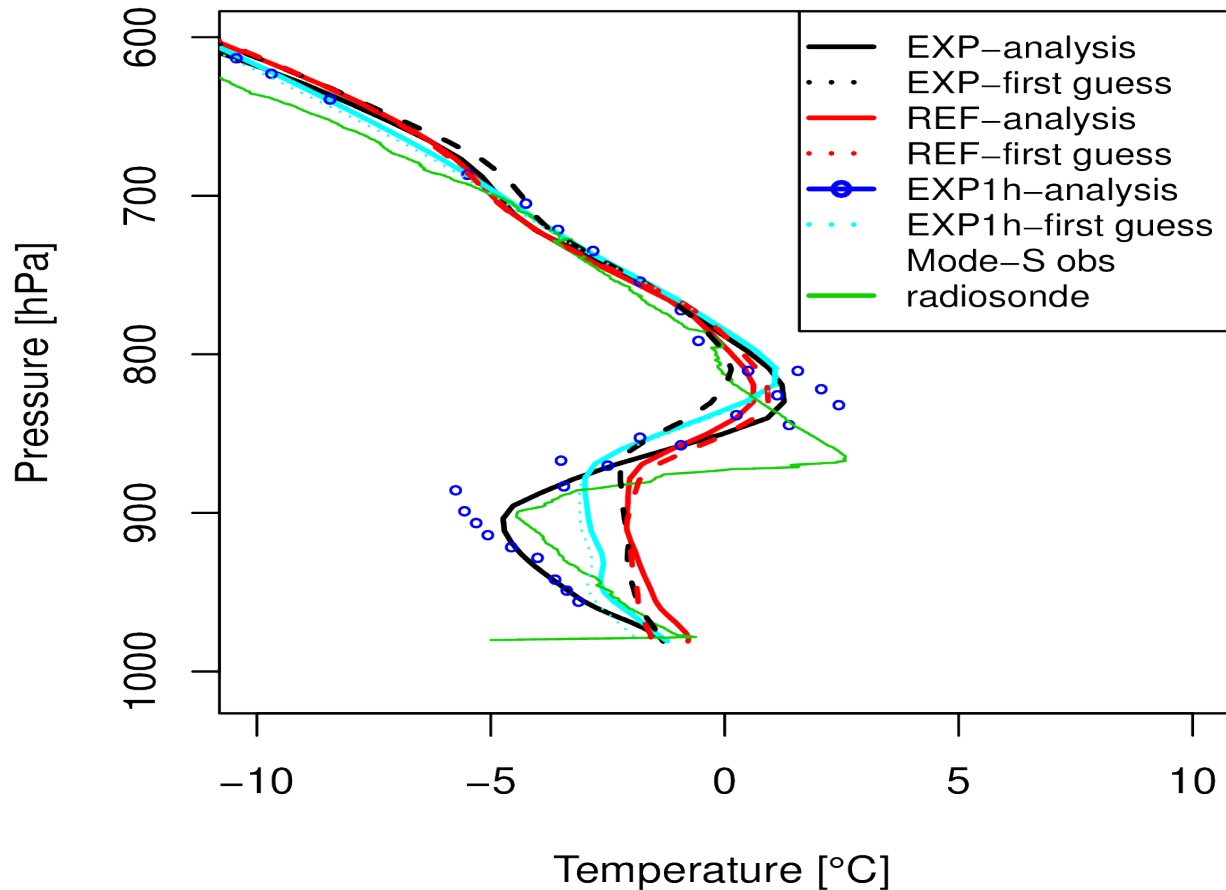
RUC 3h vs. RUC 1h -forecast

- scores against Mode-S: 31 Jan – 3 Feb 2014 (4 runs per day)

Questions

- Is there enough observations?

- Fluctuations due to different observation structure (users concerned/puzzled already with run-to-run variability in 3-h cycle)

- Is space-consistent coupling still appropriate?

- Sampling of background errors in spin-up mode?