LACE DAWD – summary of discussions, plans for 2020

Benedikt Strajnar

Radar DA

- Small improvements in BATOR reader in the newer model cycles

- Assimilation of OPERA reflectivity in ALARO, drying effect observed

- Work on dealiasing of Doppler winds, works well on synthetic cases, difficult on real data

Quality control

- ▶ Var-QC:
  - ▶ can be switched on by namelist switch, but that triggers selection of many ECMWF settings.
  - ▶ Modifies the cost function to put less weight to outliers.
  - ▶ Can show deficiences in obs.error and rejection limit specification and for some data, e.g. Doppler winds.
- ▶ QC (OMG) applied to many obstypes: synop, wind profiles, aircraft, to be continued on AMV
  - ▶ Synop and national data quite OK, some issues with bias resolved
  - ▶ Wind profiler sites shown to be problematic, blacklisting needed
  - ▶ Stations above 500m do not report geopotential – to be checked
- ▶ Evaluation of quality of Mode-S data: generaly OK but some issues in data not fully understood (zero obs., different bias in AMDAR and MRAR)

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GNSS data and similar

- ▸ E-GVAP to be available at OPLACE, discussion about format (BUFR) and data delivery/timeliness (hourly or 15 min data)

- ▸ Impact of E-GVAP: solutions can have different/ opposite impact, however results slightly optimistic. Interesting case observed.

- ▸ Whitelisting issues, e.g. how to choose right observation when multiple solution exist

- ▸ Demonstration of possible use of attenuation of microwave links due to rain

Surface data assimilation

▶ Experiments with RUC in Hungary, results indicate systematic warming of surface during OI analysis, with feedback on low level inversion/low clouds, role of snow to be understood.

▶ EKF application in Slovakia – on a good way to implement DA cycle, discussion about gridded observations.

▶ Benefit of using locally sampled obs. error for satellite obs. was investigated (SCATSAR).

Main topics in LACE DA plan 2020

- ▶ Implementation of hourly RUC (tunning in AT, HU, experiments in SI, CZ)

- ▶ Radar data assimilation (3 stays on validation of reflectivity assimilation), work on wind dealiasing

- ▶ Mode-S data (application, extensions)

- ▶ GNSS data (ZTD, STD)

- ▶ Surface data assimilation (EKF framework, extensions of satellite products)

Ideas for possible DA code training in 2020 / TBD with C. Fischer

▶ Coding of a new obs. operator (good example STD)

▶ Inclusion of a new obs. type or subtype (STD, microlinks)

▶ Exercise: application of supermodding ??

▶ Modulations in B-matrix ??