OPERATIONAL STATUS AUSTRIA

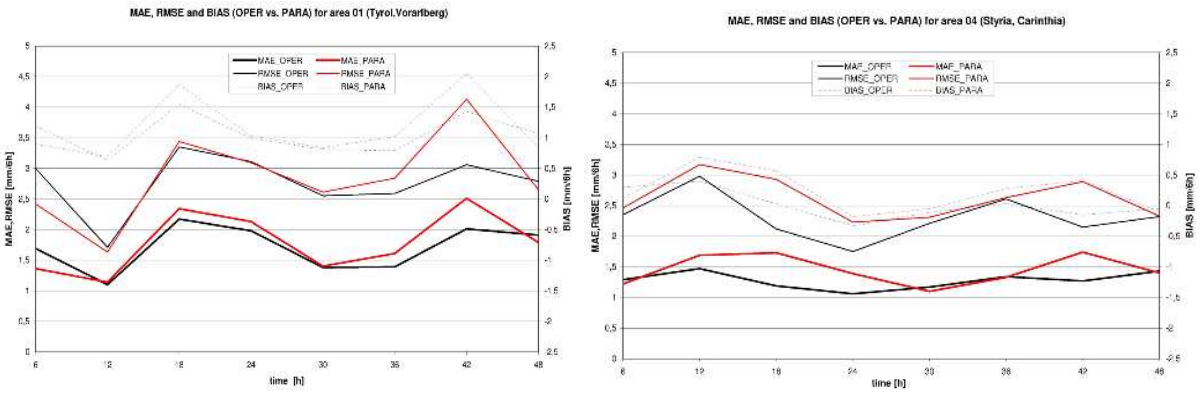
Operational model ALADIN-AUSTRIA:

Model Version:	**CY25T2**
Horizontal resolution:	**9,6 km**
Number of levels:	**45**
Number of gridpoints:	**300 x 270**
Time-step:	**415 sec**
Coupling model:	**ARPEGE**
Coupling frequenzy:	**3 hours**
Forecast range:	**48 hours**
Output every:	**1 hour**

ALADIN-AUSTRIA is operationally run twice a day (00 and 12 UTC). The coupling files are retrieved via ftp from Méteo-France and from EZMWF for backup purpose. ALADIN-AUSTRIA uses a modified acnebn-routine to improve the forecast in the case of low stratus (Seidl-Kann-scheme).

Parallel suite:

During May 2006 AL29T2(_op2) was run in parallel suite using Lopez-physics. Verification and comparision with operational run brought better (or at least equal) scores for CY29 for 2m temperature, mean sea level pressure, wind speed and wind direction. The same can be concluded for cloud cover (with INCA used as reference). In the case of precipitation (also using INCA as reference), scores for areal precipitation means were not sufficient in order to change operational ALADIN version from CY25 to CY29 (with Lopez) for the time being. The impression of more realistic precipitation patterns gained with Lopez could not be underlined sufficiently by the scores used for this verification.



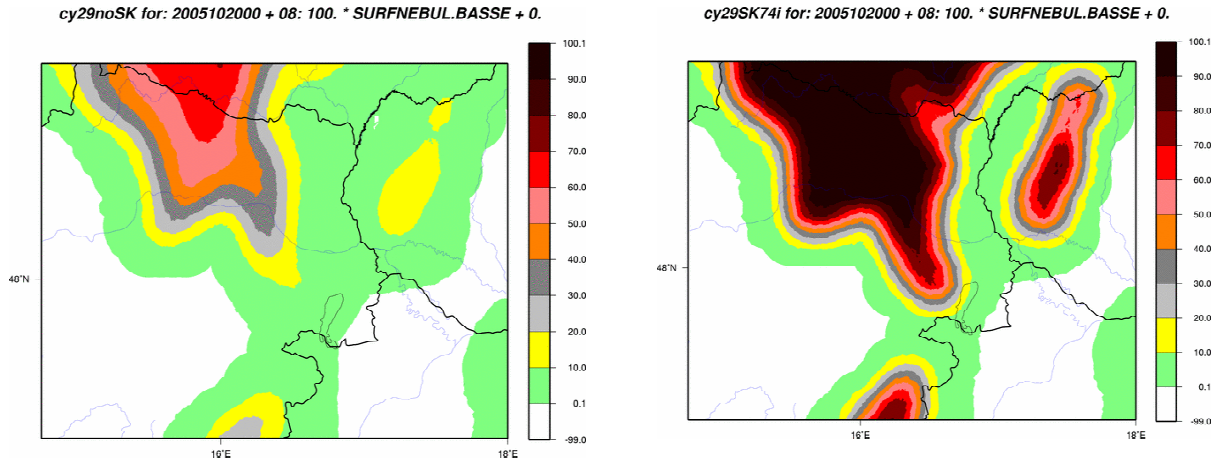
precipitation: MAE areal means CY25 (black) vs. CY29(red) with Lopez.

Recent work:

- INCA:
  - Prediction of convective cell development: It could be shown that a alghorithm based on some INCA convective diagnostic fields describing the intensification/weakening of convective precipitation areas can bring a slight gain in nowcast skill. It was found that the convective fields most important for the nowcast are CAPE, CIN, DTRIG and MOCON. Beside these INCA fields satellite data is used in order to identify areas with incipient cell intensification and to avoid over-prediction of cell initiation.
  - Temperature: The cooling-process through precipitation is now taken into account in the nowcasting alghorithm.
  - In the context of the World Sailing Games at Lake-Neusiedl in May 2006 the influence of the lake and it's surface temperature on the surrounding temperature field was therefore implemented in INCA.

- EPS: ALADIN-LAEF:
  - Problem of generating initial perturbation: Performance of Breeding, ETKF and ET are compared during a cold case period (15.1. – 15.2.2006) in order to valuate the effects on the initial perturbation.
  - Problem of boundaries: Studies on the effect of using different boundary conditions (members gained by SV vs. Breeding) have shown the sensitivity on the ensemble performance.

- Introduction of Seidl-Kann into CY29: SK still brings benefits compared to the reference run (no SK), but the positive impact seems to be reduced.



low cloudiness: Increasing low stratus by using SK-scheme within CY29

Future plans/work:

- Change of operating system: SGI will be replaced by a NEC (2 SX-8R vector system). The operational change from SGI to NEC is planned for December 2006
- "new" parallel suite: use of modified Lopez-routines (splitted q_p), use of modifed/new DFI-routines.
- Calibration of Seidl-Kann-scheme for CY29 -> incoporation of cloud water into the sub-inversion-scheme.
- Planned modifications in INCA:

  - Temperature: The current method shows some deficiencies in the case of inversions (vertically smoothed). A new alghorithm shall take into account the spatial limitations of cold air pools.
  - Precipitation: Improvement of the nowcasting-alghorithm; Continue work on the prediction of convection cell development (=intensity changes, in contrast to pure cell translation)
  - Portability: creating INCA-CH and INCA-SK showed that the INCA package is not easily portable -> better structure as a by-product of operational system change.

- EPS: ALADIN-LAEF: Work will continue with experiments during a period in summer (August 2006). Further tests are carried out using Breeding + blending. ECMWF EPS members are planned to be used as boundary conditions, too.