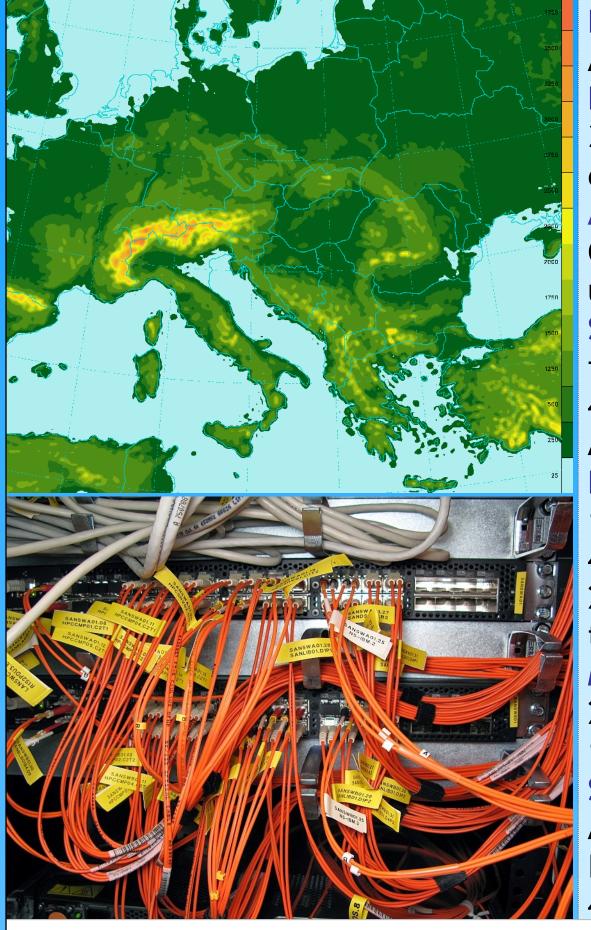


ALADIN related activities @ SHMU

24th ALADIN Workshop & HIRLAM All Staff Meeting, 7-11 April 2014, Bucharest, Romania



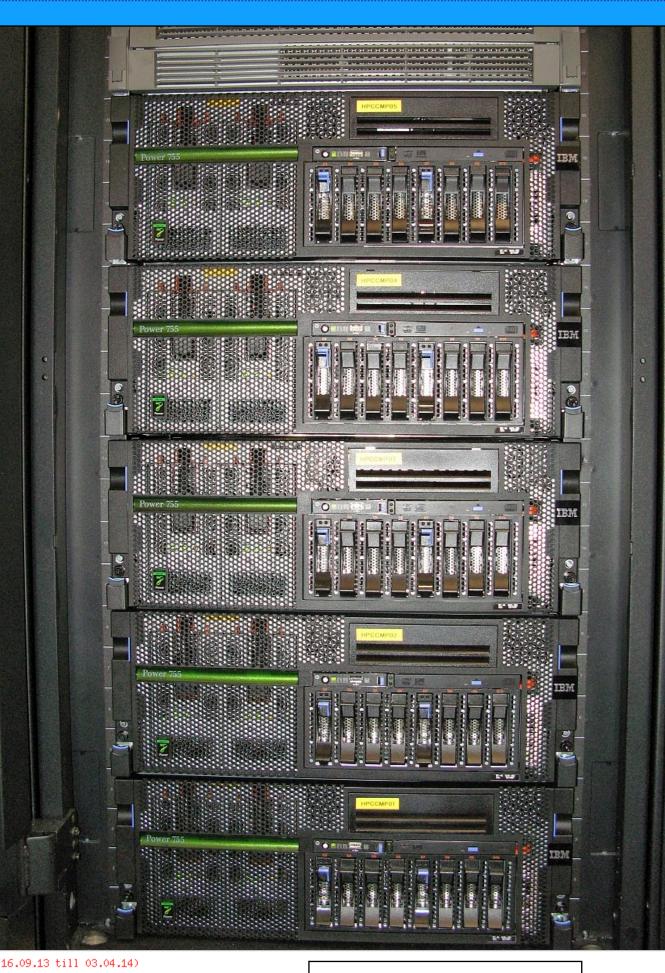
nwp@shmu.sk: Martin Belluš, Rastislav Bujňák, Mária Derková, Richard Habrovský, Milan Káčer, Michal Neštiak, Oldřich Španiel, Viktor Tarjáni, Jozef Vivoda



NWP model ALADIN CY36T1: ALARO+3MT & SLHD Domain size and resolution 320 x 288 points (2882 x 2594 km) dx=9.0 km, vlev=37, tstep=400s Assimilation cycle: CANARI surface analysis upper-air spectral blending by DFI Suite characteristics forecast length +72h (3 days) 4 runs/day (00, 06, 12, 18 UTC)

ARPEGE coupling with 3h frequency HPC

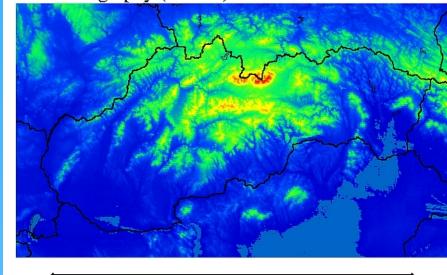
10 nodes of IBM Power 755: 4x Power7 8core CPUs (3.6 GHz) 256 GB RAM total: 320 CPUs, 2.5 TB RAM Management servers 2x IBM Power 750 1x Power7 6core CPU, 64 GB RAM Software and file system AIX 6 SE OS IBM Load Leveler queueing system 40 TB GPFS



ECMWF orography (0.125deg)

ALADIN orography (9x9km)

INCA orography (1x1km)

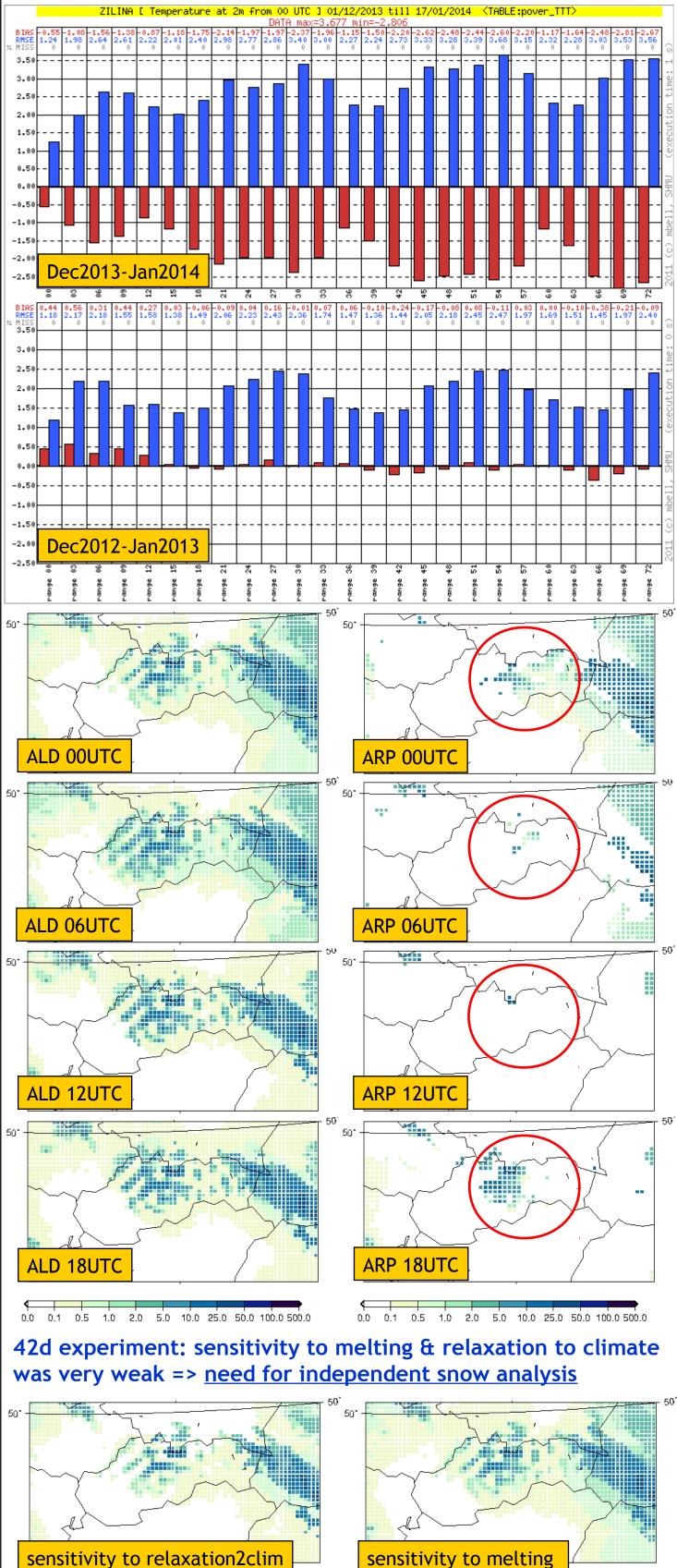


200 400 600 800 1000 1200 1400 1600 1800 2000 2200 2400

End of ALADIN/SHMU integration (200d statistics)

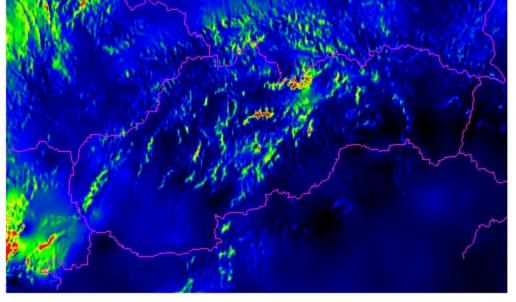
MF switch to BULL

Negative BIAS in T2m this winter, probably linked to unrealistic snow cover in ALADIN. There was almost no snow in Slovakia. Snow cover was (consistently) completely wrong in ALADIN. It was more realistic in ARPEGE, but inconsistent between NTs...



Towards [common LACE] verification using HARMONIE Selection: ALL using 283 stations T2m Period: 20140301-20140331 Hours: {00,06,12,18} RMSE P001 BIAS POO 2.5 BIAS POO3 BIAS PO04 CASES 0.5 -0.5 -1.5 10 15 - 20 25 35 Forecast length

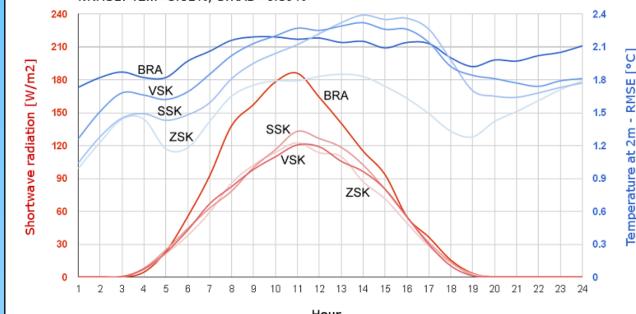
Automatic alert generation from ALADIN&INCA



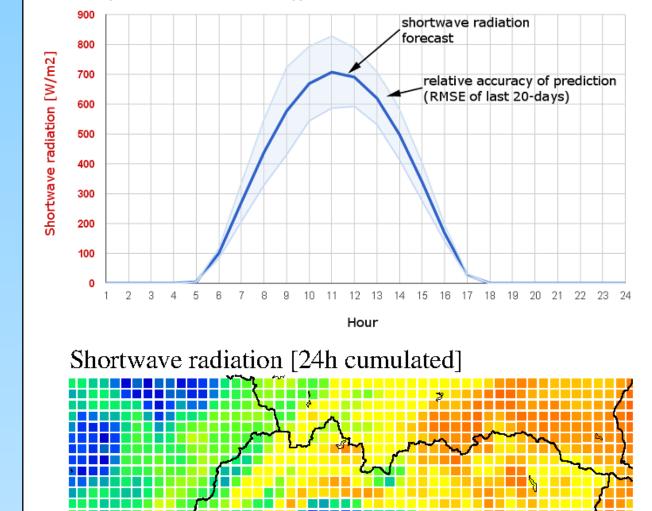
/data/nwp/products/inca2.2_uv.sk/2014-03-16_00/WG_FC_INCA.grb, ni = 501, nj = 301 null, zMin = 0.0, zMax = 76.662285

Verification of radiation for energy sector

Forecast error for 3rd day, verification period Jan-Dec 2013 (365 days) NRMSE: T2m=3.51%, S.RAD=6.39%



Shortwave radiation forecast for 3rd day (Eastern Slovakia territory)



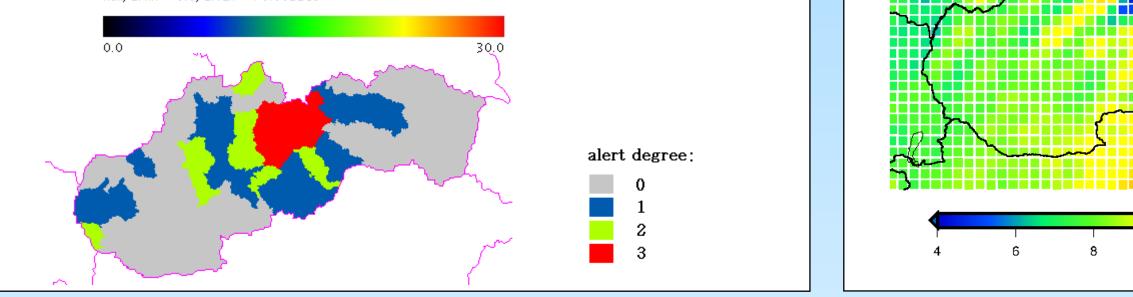
12

14

16

0.0 0.1 0.5 1.0 2.0 5.0 10.0 25.0 50.0 100.0 500.

0.0 0.1 0.5 1.0 2.0 5.0 10.0 25.0 50.0 100.0 500.0



LAEF experiments with the size of ensemble that was determined to be optimal with ~20 members; and its sensitivity to simulated model uncertainty (multiphysics)

