

LACE data assimilation working days 2013
work on grid point sigma B (Budapest May 2013)

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Grid point sigma B



GP sigma B
25.09.2013

ALARO/ALADIN has possibility for grid point dependent sigma B (background error) instead of spectral (space uniform) values

(stay of B. Strajnar in MF:

www.rclace.eu/File/Data_Assimilation/2008/report_beni_gpsigma.pdf)

Two error grib files from Global Ensemble (Arpège AEARP) needed : 1x Screening, 1x Minimization

-> Test this Option in AROME;

-> Is there any possibility to generate error files from limited area ensemble (LAEF)?

Grid point sigma B



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Contact with MF (Loik Berre) Error files every 6h:

Cougar:

~mxpt001/arpege/oper/assim/.../errgrib_scr (Screening)

(U10m, V10m, T2m, RH2m, log p, U, V, T, RH, Q, phi, 27 brightness temperatures, TCWV)

~mxpt001/arpege/oper/assim/.../errgribvor (Minimization)

(3D unbalanced divergence, Q, unb.-T, vorticity and log p)

LSPFCE=.FALSE. In minimization namelist ->/var/suinfce.F90 is called REDNMC_q has to be tuned (because not 0 in Arpège)

Calculation of error files from Arpège ensemble:

arp/var/sujbvarens.F90 has to be adapted to LAM-LAEF

- additional spatial filtering needed to avoid noise in case of small ensemble size (10-15)

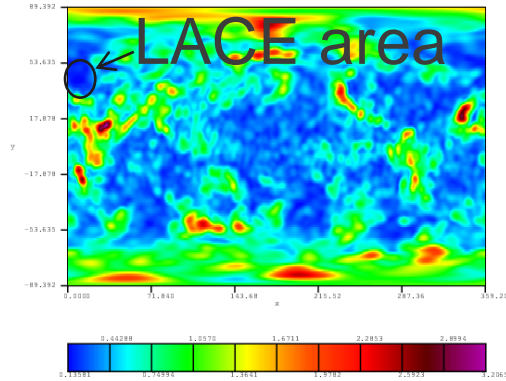
- Adaptation for reading LAM errgrib files necessary?

PHD at MF

Errgribvor from 12th May 2013 21 UTC

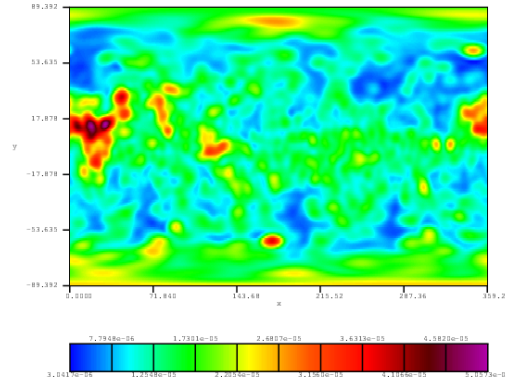
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GRIB data Unbalanced component of temperature (K)
x: longitude (degrees_east)
y: latitude (degrees_north)
z: hybrid 65.0 (level)
t: date / t 2013/05/13:03.00 / 0.250000 (days since 2013-05-12 21:00:00)



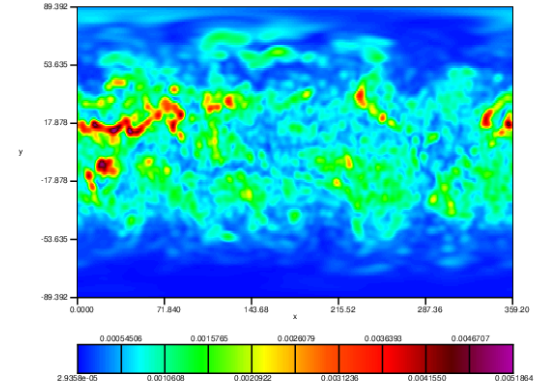
Tu

GRIB data Unbalanced component of divergence (s⁻¹)
x: longitude (degrees_east)
y: latitude (degrees_north)
z: hybrid 65.0 (level)
t: date / t 2013/05/13:03.00 / 0.250000 (days since 2013-05-12 21:00:00)



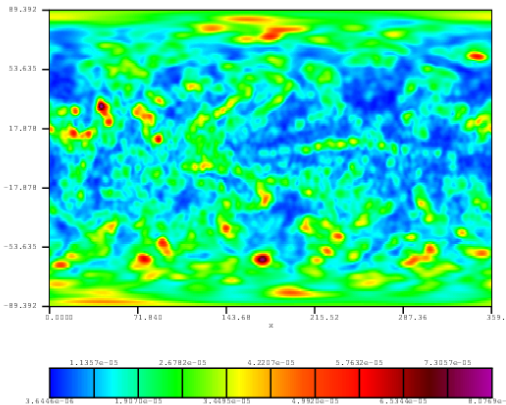
div-u

GRIB data Specific humidity (kg kg⁻¹)
x: longitude (degrees_east)
y: latitude (degrees_north)
z: hybrid 65.0 (level)
t: date / t 2013/05/13:03.00 / 0.250000 (days since 2013-05-12 21:00:00)



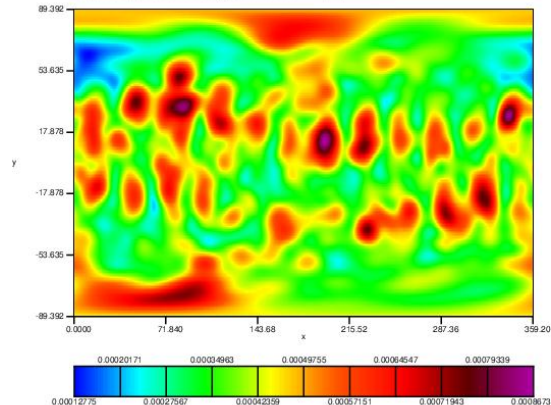
Q

GRIB data Vorticity (relative) (s⁻¹)
x: longitude (degrees_east)
y: latitude (degrees_north)
z: hybrid 65.0 (level)
t: date / t 2013/05/13:03.00 / 0.250000 (days since 2013-05-12 21:00:00)



vor

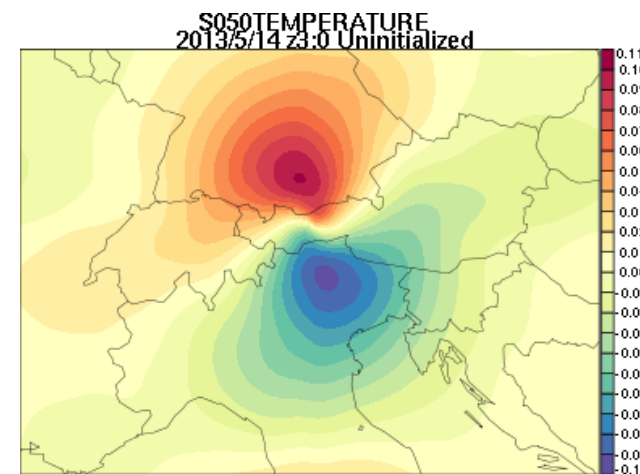
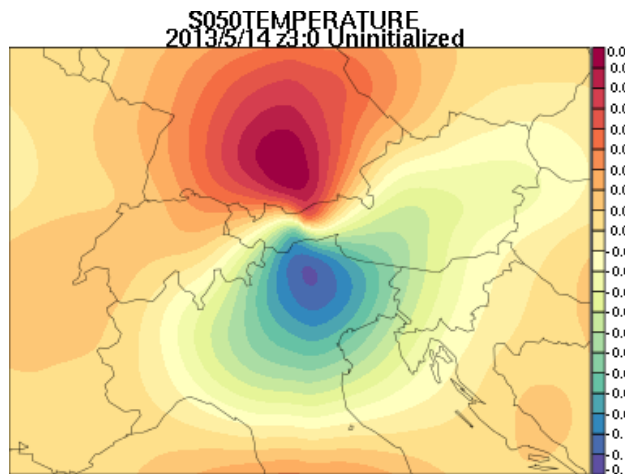
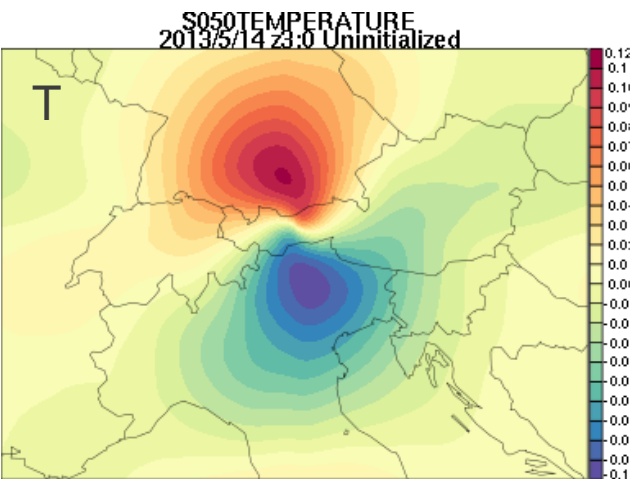
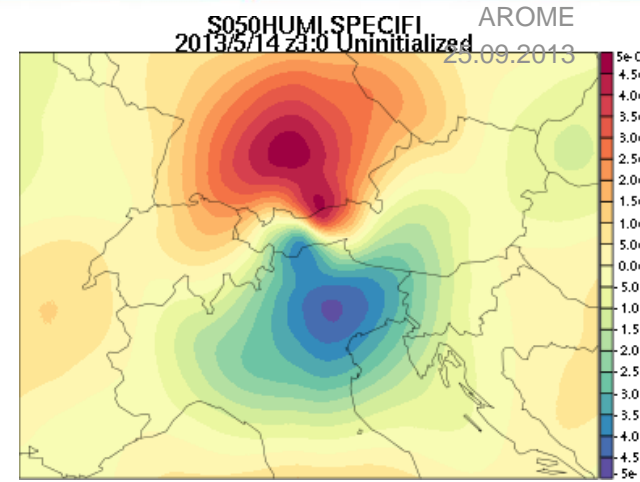
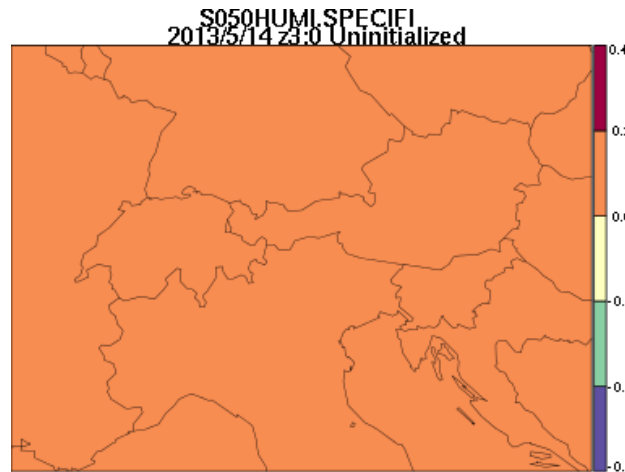
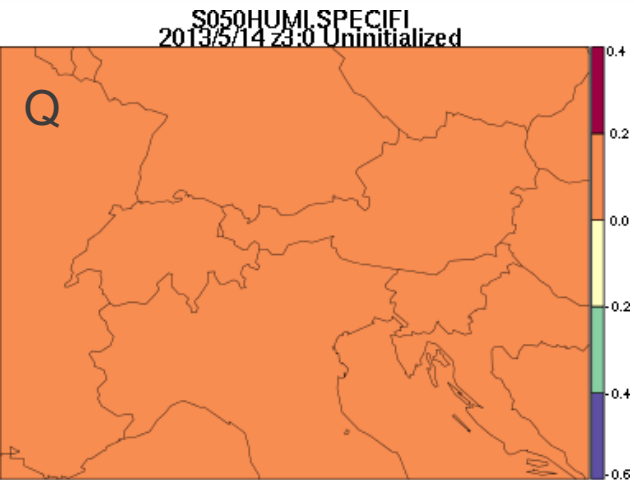
GRIB data Unbalanced component of logarithm of surface pressure
x: longitude (degrees_east)
y: latitude (degrees_north)
z: hybrid 1.0 (level)
t: date / t 2013/05/13:03.00 / 0.250000 (days since 2013-05-12 21:00:00)



Log unbal.-ps

Level 65

Inkremments for sounding Innsbruck 20130514 03 UTC (wind obs only)

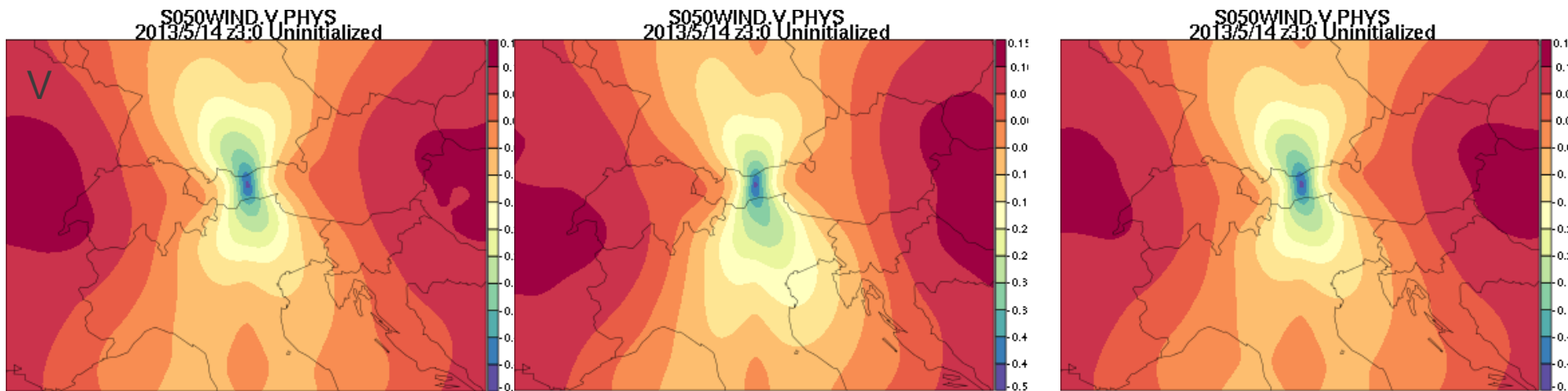
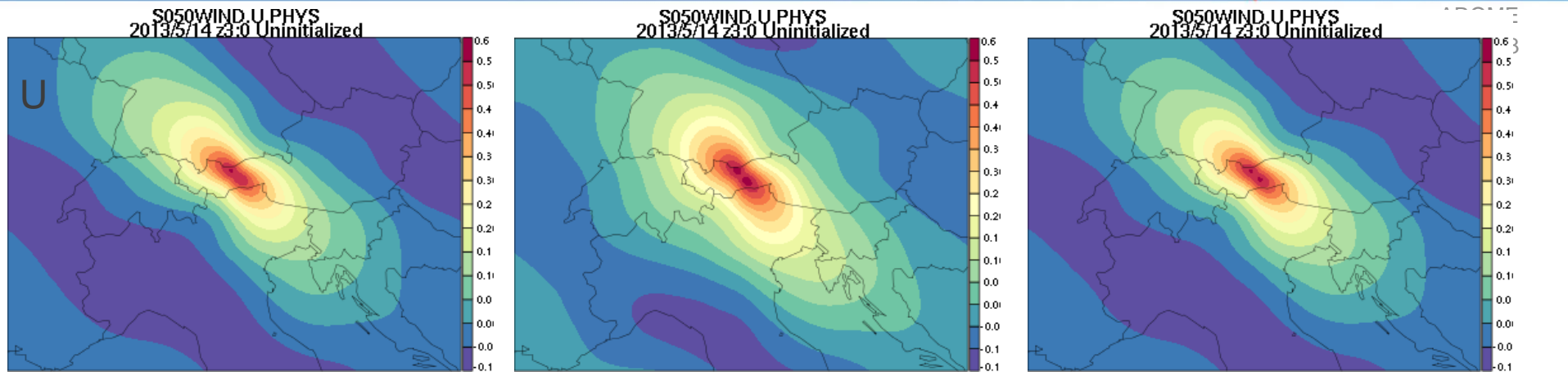


LSPFC=F old error files

LSPFC=F new error files

LSPFC=T

Inkrementen for sounding Innsbruck 20130514 03 UTC (wind obs only)



LSPFC=F old error files

LSPFC=F new error files

LSPFC=T

Grid point sigma B



AROME
25.09.2013

- Grid point sigma B is fine for ALARO/ALADIN, bug for AROME in cy36t1 export (Q is in GP space in AROME NAMGFL and SP in ALADIN/ALARO)

- Most likely the bug is in /arp/var/suinfce.F90->EINV_TRANS
or jbtomodel(ad).F90 ->etransinv_jbtomodel(ad)
or sqrtb(in/ad/inad).F90