

INCA – CE

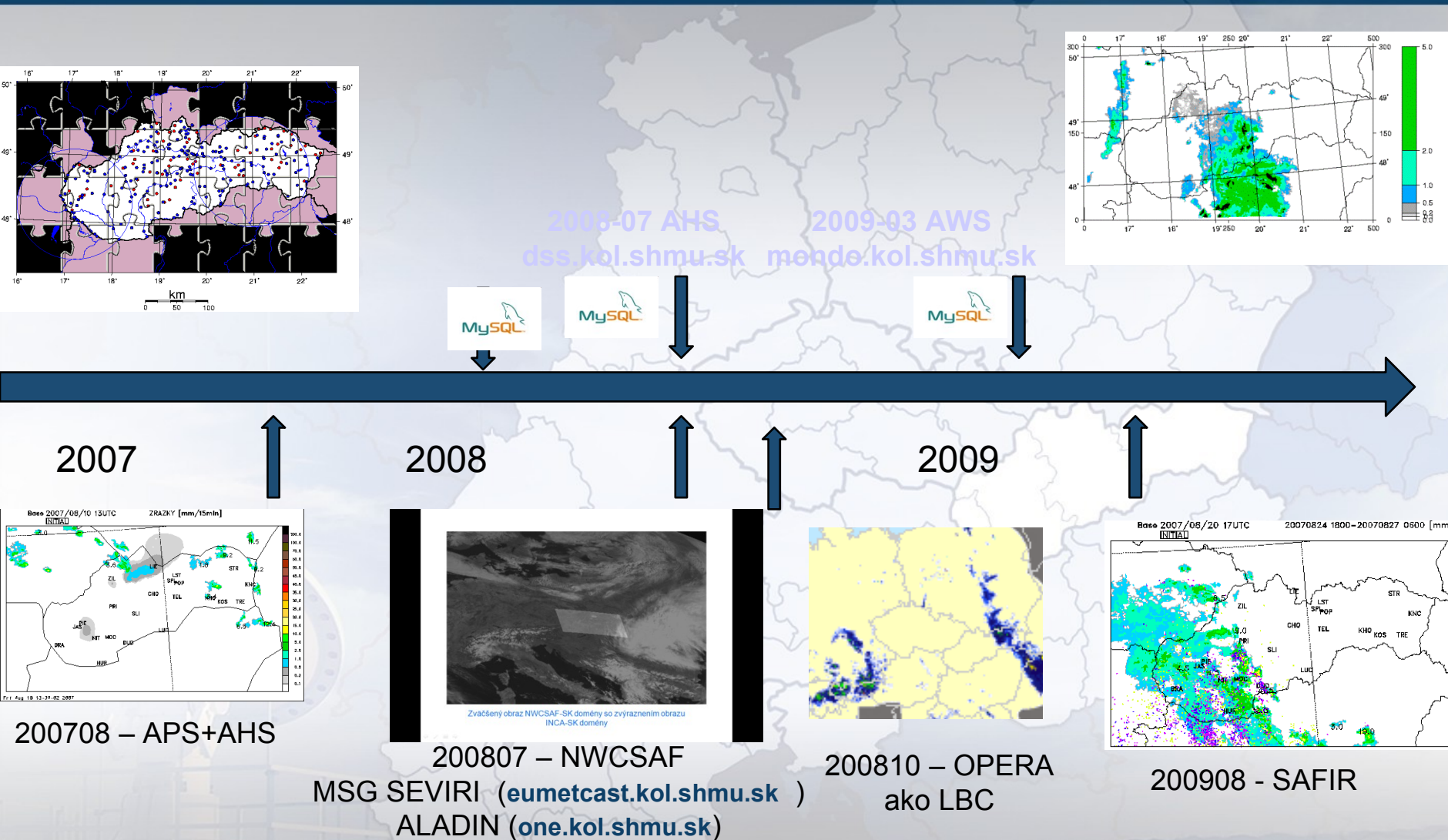
(Project partners connection)



Integrated Nowcasting through Comprehensive Analysis



Short history

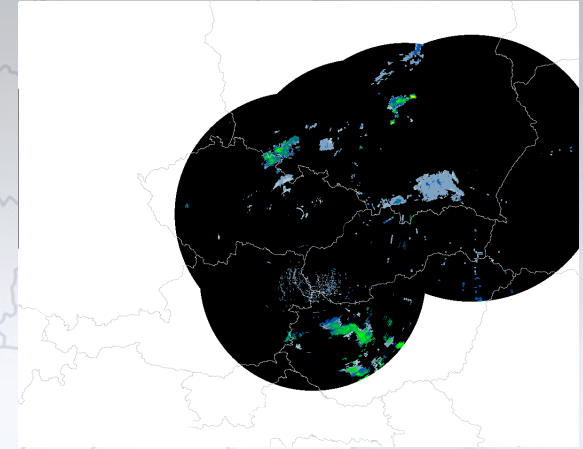
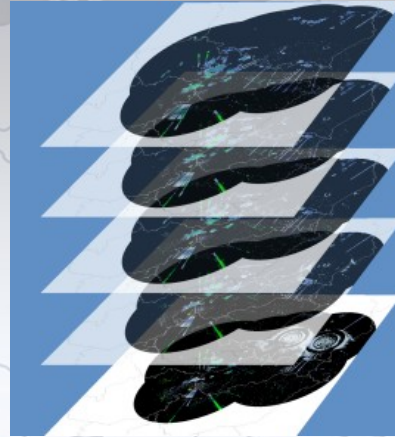


INCA2

2010-01
mondo.kol.shmu.sk



2010-01 storage 100GB
one.kol.shmu.sk

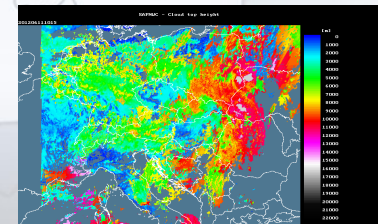
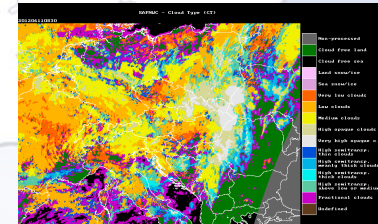
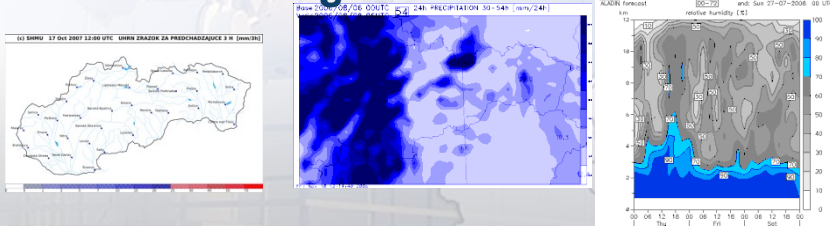


2010

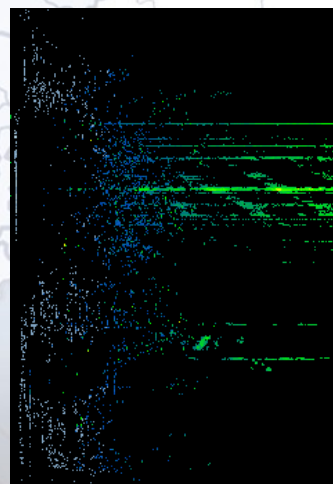
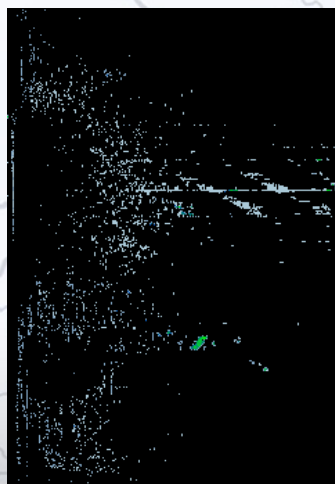
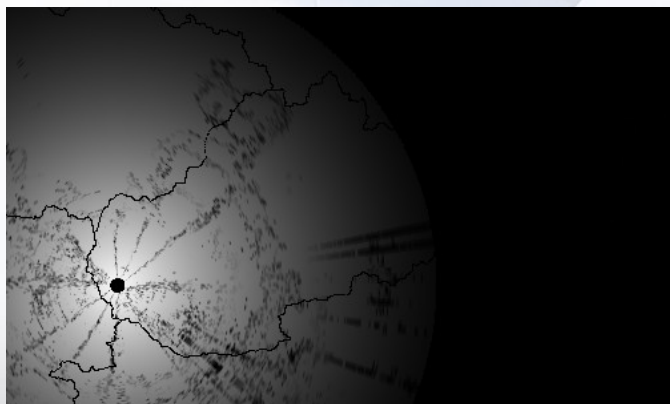
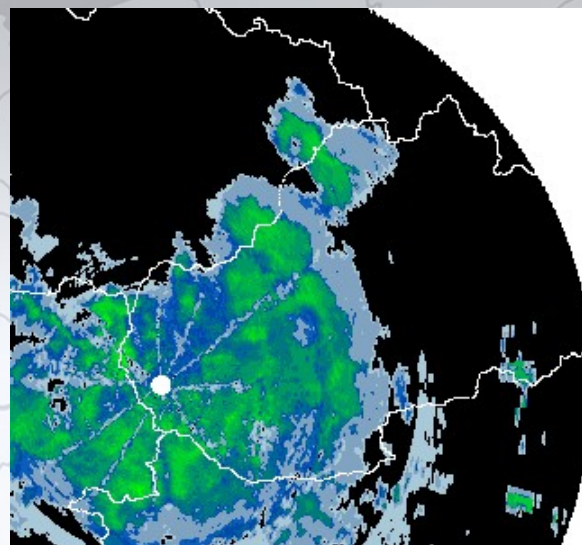
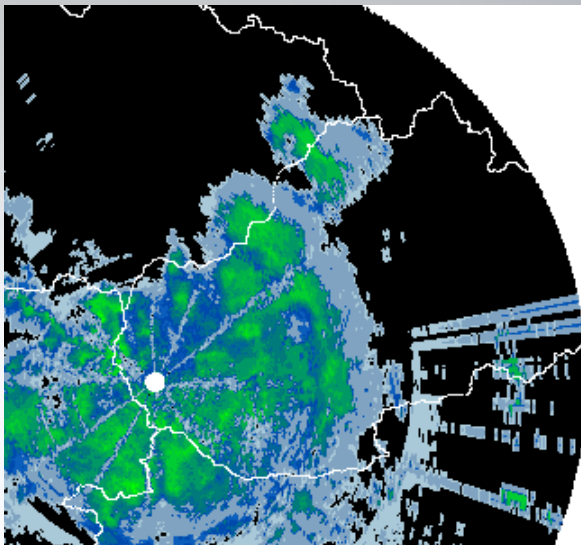
2011

2012

Source code in C++, optimized, parallel (OpenMP)
Direct reading ALADIN grb
Direct reading of radar 3D volumes (HDF5 – OPERA)
Direct reading of HDF5 for NWCSAF



INCA2 SK - Quality indexes



INCA2 SK

INCA2-SK prec (5min) (501 301) (15.988000 47.469000 23.089192 49.798873)

(C) INCA/SHMU radar analysis [mm/h] : 2012-01-19_16 + 0 [h] area: SK

prec.stat. + radar data (10min)
In HDF5

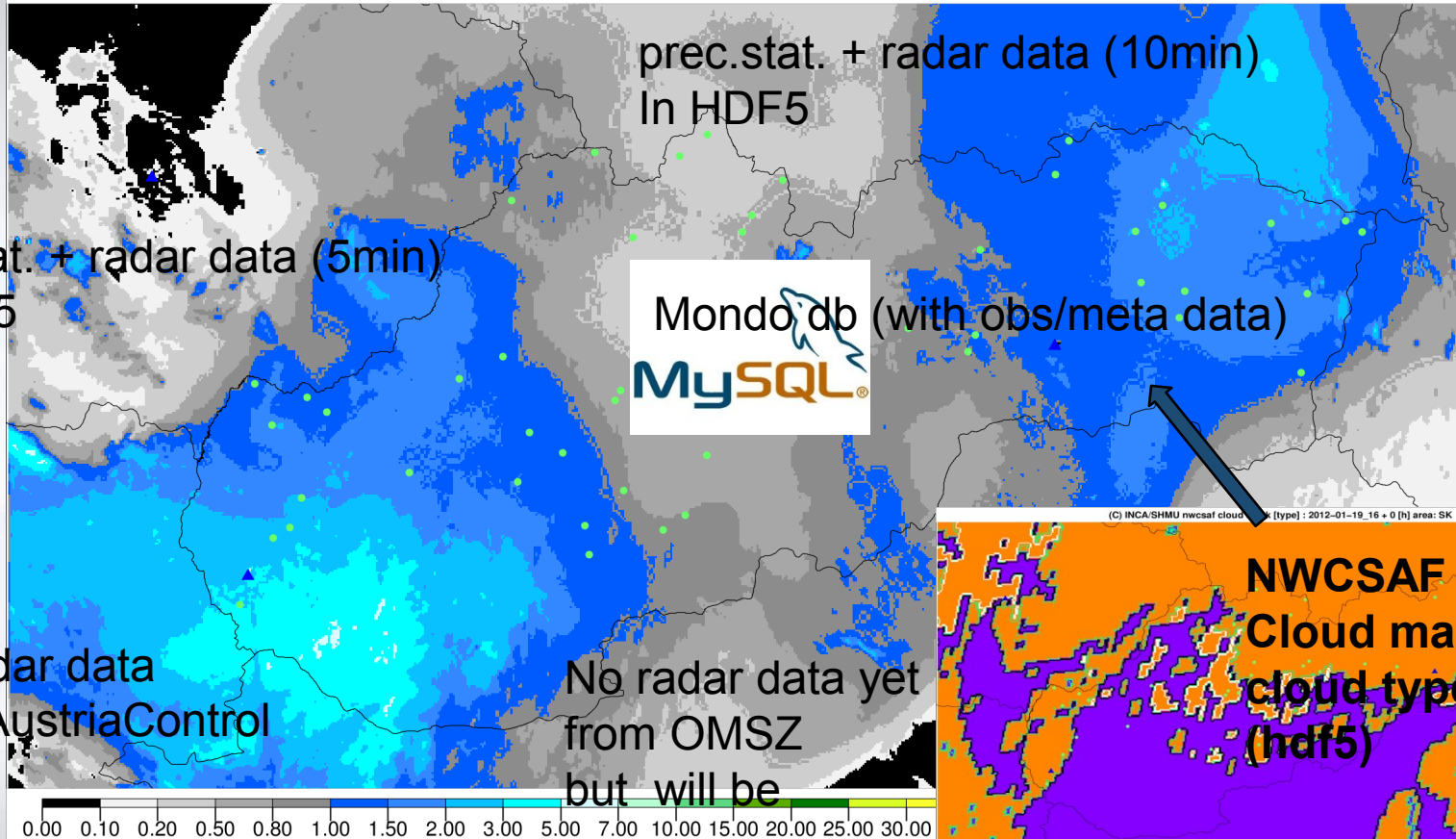
Mondo db (with obs/meta data)



prec.stat. + radar data (5min)
In HDF5

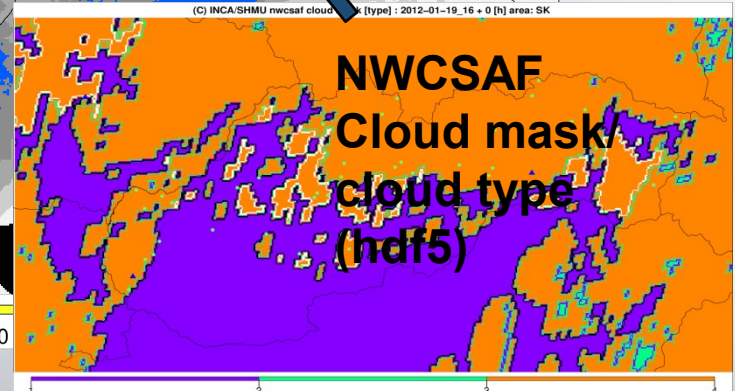
No radar data
from AustriaControl

No radar data yet
from OMSZ
but will be



(C) INCA/SHMU nwcsaf cloud [type] : 2012-01-19_16 + 0 [h] area: SK

NWCSAF
Cloud mask/
cloud type
(hdf5)



Short term :lightning data fields



Slovak Hydrometeorological Institute

Enter your name

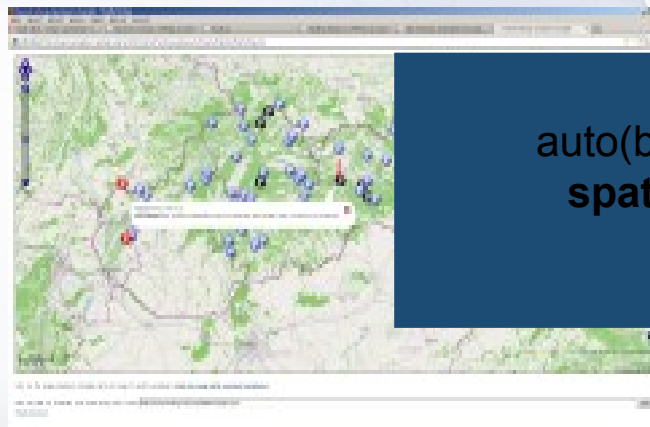
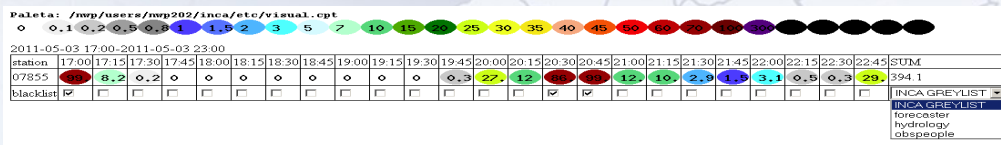
INCA2 SK - OBSERVATION DATA TIMETABLE

inca (T,Wind) / inca prec/inca2 prec	00	05	10	15	20	25	30	35	40	45	50	55
SHMU - radar (asc / PAGZ41 , PAGZ51)	11	16	21	26	31	36	41	46	51	56	01	06
SHMU - APS			x		x		x		x		x	
SHMU - AHS				x			x			X		
SHMU - AWS	x		x		x		x		x		x	
SHMU - SYNOP	15											
CHMU - radar (PAGZ50)	10	15	20	25	30	35	40	45	50	55	00	05
CHMU - AWS	05		15		25		35		45		55	
CHMU - SYNOP	15											
IMGW - radar (PAGZ42, PAGZ44, PAGZ48)	10		20		30		40		50		00	
IMGW - AWS	*	*	*	*	*	*	*	*	*	*	*	*
IMGW - SYNOP	15											
ZAMG - TAWES	15			30			45			00		
ZAMG - radar	-	-	-	-	-	-	-	-	-	-	-	-

Development of INPUTs/OUTPUTs2INCA

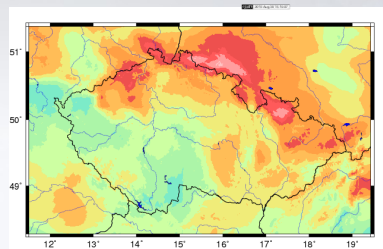
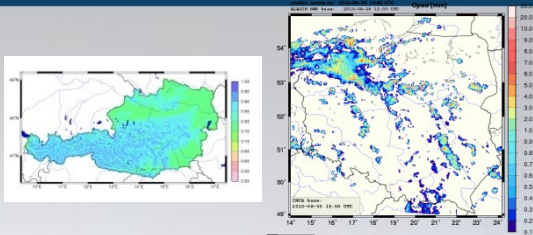
OBSERVATIONS

- first implementation was build on ascii files (static, no correction in time, only one time interval 15min)
- now direct connection on MySQL and wrapper APACHE+MYSQL, (c||cgi || php)
- [http://incaserver.shmu.sk/?type_obs;date=\\$yyyy-\\$mm-\\$dd_\\$HH:\\$MM;int=\\$interval](http://incaserver.shmu.sk/?type_obs;date=$yyyy-$mm-$dd_$HH:$MM;int=$interval) (dynamic, online correction (flags), independed time interval, IP control, planing partitioning of data, ...)
- testing geospatial interpolation (IDW, block Kriging ,....) -> decide use physic build reanalysis

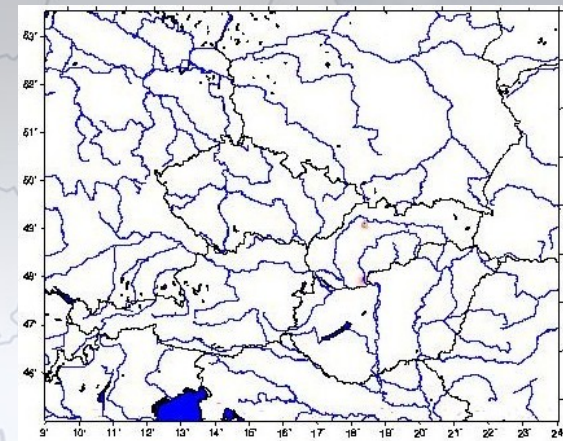


We developing
auto(black/ grey/ white) listing
spatial / time/multisource
support for operative

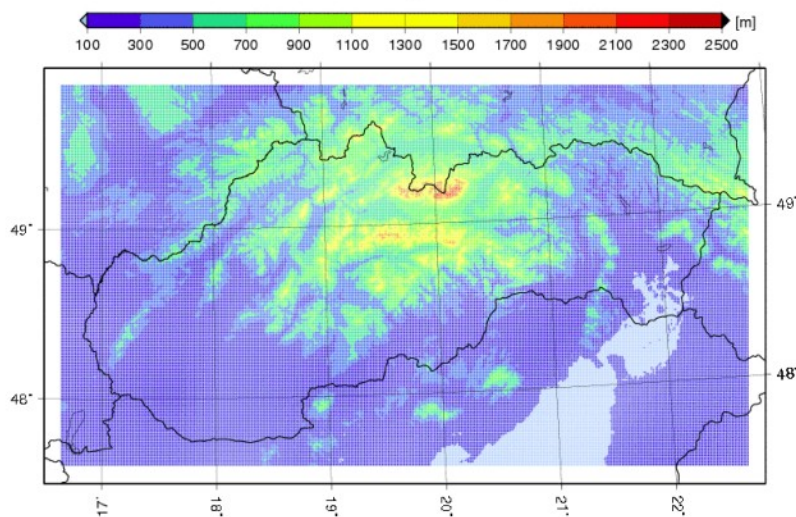




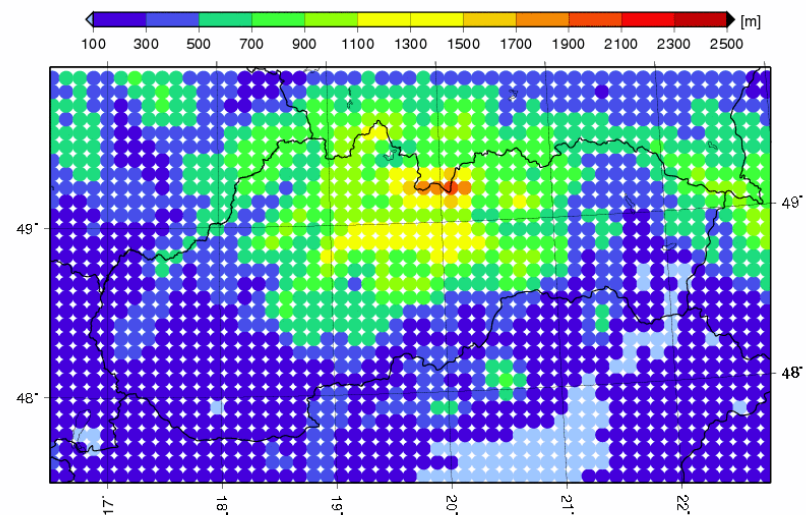
- Available parameters:
- Temperature
- Relative humidity
- Wind Speed and direction
- Rain Rate
- Dewpoint temperature
- Pressure

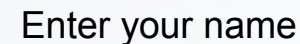


s1km domain (INCA)



SK oper domain (9km)





- improve maintainability
- common concert in naming conventions & coding guidelines
- improve tenability and vulnerability in unavoidable cause

(INCA will be very important in hazardous weather situations)

- prepare source code for parallelization

- replacing the same code fragments
 - save a function call
- we must find time & space tradeoff
- constrain file accesses (read/write)
 - use explicit pointer arithmetic
- we need self description-variables

