

Developments in the **HARP** verification package

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Outline

- HARP-general
- HARP-eps
- HARP-spatial
- TODO

HARP-general

- Recent version of R (R3.0. ...)
- Some R-packages from CRAN repository
 - verification
 - SpatialVx
 - RSQLite
 - h5r
 - ggplot2
 - ...

HARP-general

- A number of external and modified R-packages – provided from HARP GIT
 - geogrid
 - mapnew
 - Rgrib2
 - Rfa
 - Repts
- + ECMWF grib_api (not straight forward to install and make it work with R)

HARP-general

- Additionally (from HARP GIT archive)
 - R-scripts for the actual verification tasks
 - Examples, instructions and documentation (under construction)
 - Utilities (shell, python)
 - Interpolate fields / station data
 - Read and write to database(files), archive
 - Extract data from different sources
 - grib, hdf5, vfld, vobs, inca

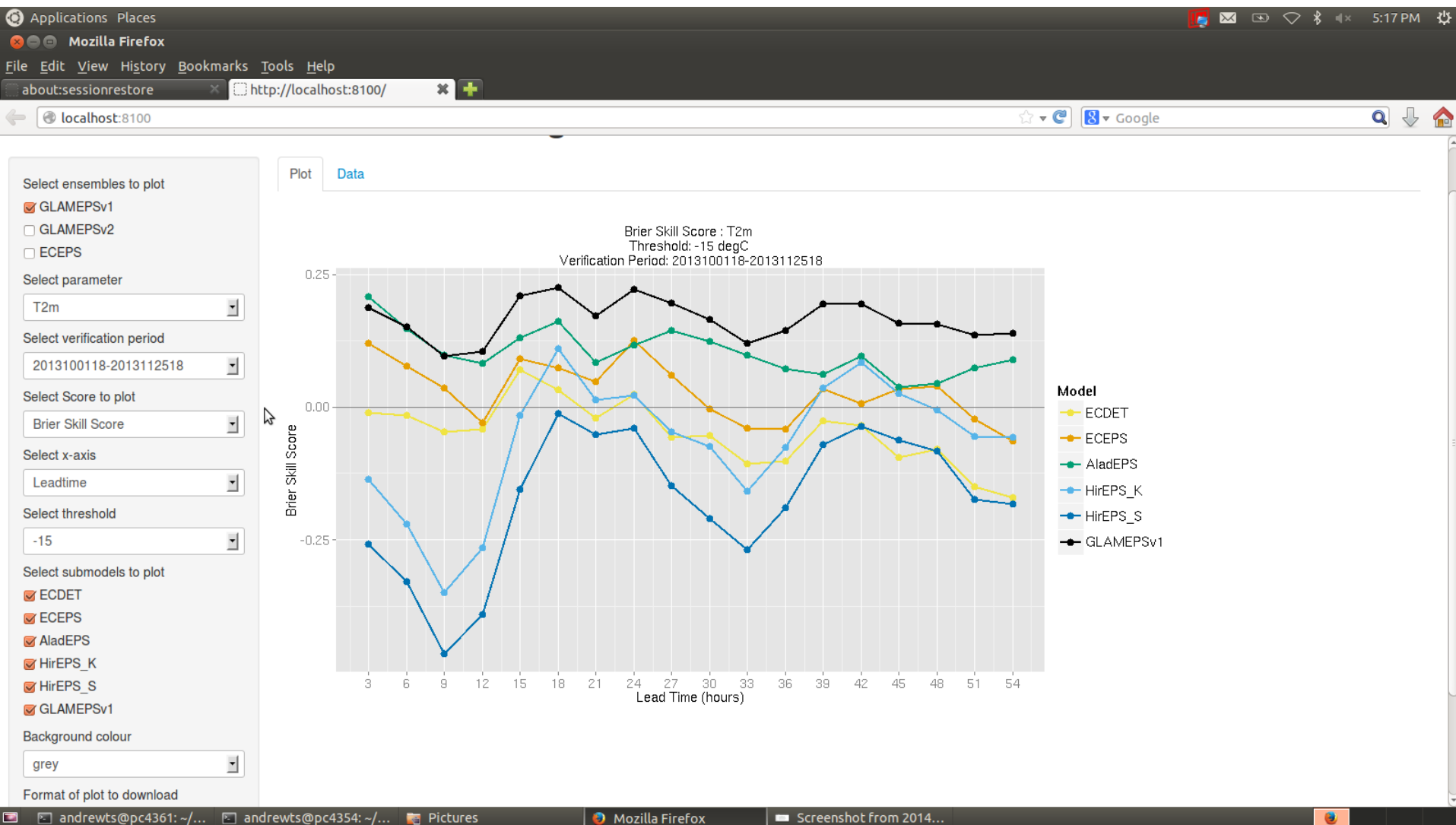
HARP-eps

- Glameps at ECGB
 - Model data from each sub-ensemble (extraction, interpolation, creating SQLite tables)
 - Observation data from archive (MARS extraction and creation of SQLite files via vobs)
 - Run EPS verification
 - SQLite files
 - graphics

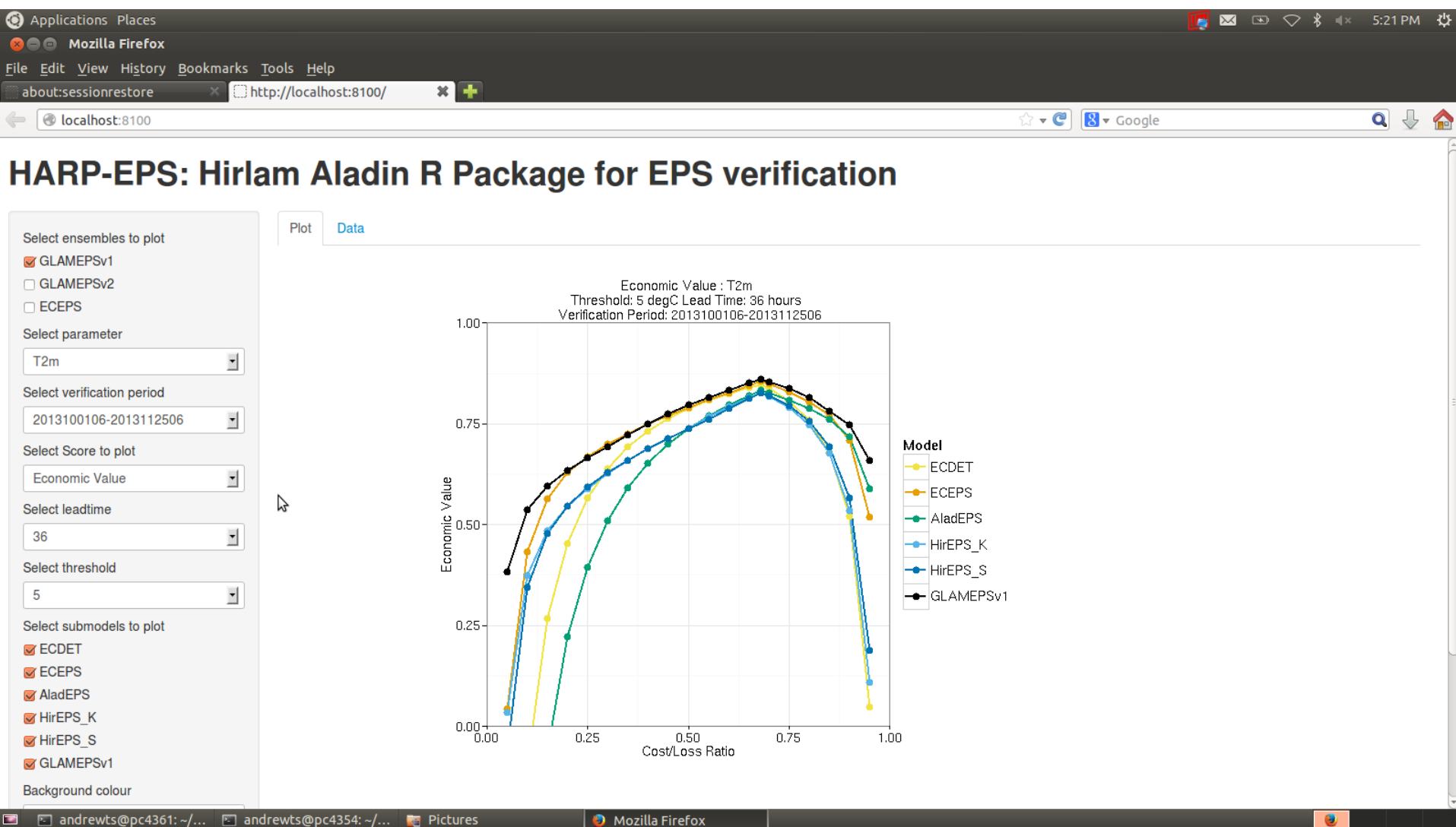
HARP-eps

- Flexible tool to show results - SHINY
 - R-package for web presentation
 - Graphics on demand from (SQLite) database files
 - Append tables with new results
 - Run locally or as inter-/intranet application

HARP-eps



HARP-eps



HARP-eps

Applications Places

Mozilla Firefox

File Edit View History Bookmarks Tools Help

about:sessionrestore http://localhost:8100/

localhost:8100

Google

HARP-EPS: Hirlam Aladin R Package for EPS verification

Select ensembles to plot

GLAMEPSv1
 GLAMEPSv2
 ECEPS

Select parameter

T2m

Select verification period

2013100106-2013112506

Select Score to plot

Economic Value

Select leadtime

36

Select threshold

5

Select submodels to plot

ECDET
 ECEPS
 AladEPS
 HirEPS_K
 HirEPS_S
 GLAMEPSv1

Background colour

Plot Data

expt	mname	x	y
GLAMEPSv1	ECDET	0.0500	-1.2184
GLAMEPSv1	ECDET	0.1000	-0.1036
GLAMEPSv1	ECDET	0.1500	0.2680
GLAMEPSv1	ECDET	0.2000	0.4538
GLAMEPSv1	ECDET	0.2500	0.5652
GLAMEPSv1	ECDET	0.3000	0.6396
GLAMEPSv1	ECDET	0.3500	0.6926
GLAMEPSv1	ECDET	0.4000	0.7325
GLAMEPSv1	ECDET	0.4500	0.7634
GLAMEPSv1	ECDET	0.5000	0.7882
GLAMEPSv1	ECDET	0.5500	0.8085
GLAMEPSv1	ECDET	0.6000	0.8254
GLAMEPSv1	ECDET	0.6500	0.8396
GLAMEPSv1	ECDET	0.6795	0.8471
GLAMEPSv1	ECDET	0.7000	0.8370
GLAMEPSv1	ECDET	0.7500	0.8055
GLAMEPSv1	ECDET	0.8000	0.7581
GLAMEPSv1	ECDET	0.8500	0.6793
GLAMEPSv1	ECDET	0.9000	0.5216
GLAMEPSv1	ECDET	0.9500	0.0484

andrewts@pc4361: ~/... andrewts@pc4354: ~/... Pictures Mozilla Firefox

HARP-spatial

- FSS (and SAL) locally in Netherlands and Austria
 - Configure verification task (config-files)
 - Reading forecast GRIB files, interpolate to a common grid
 - Observations (hdf5, inca) extraction and interpolation
 - Run verification
 - Output to SQLite file or
 - Graphics

HARP-spatial

SELECT * FROM stats

SQL ausführen

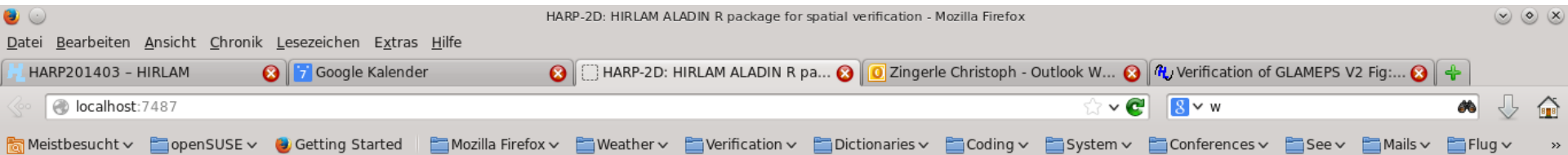
Aktionen ▾

Letzter Fehler:

not an error

date	leadtime	threshold	nbpts	baserate	bias	mse	ets	hk	fss	
1359687600	3	0.1	1	0	0.353755555555...	68106604.91330...	-0.023911938248...	0	0.270578438280	▲
1359687600	3	0.3	1	0	0.353755555555...	68106604.91330...	-0.014775234334...	0	0.212940651494	■
1359687600	3	1	1	0	0.353755555555...	68106604.91330...	-0.000036047075...	0	0.054626028760	
1359687600	3	3	1	0	0.353755555555...	68106604.91330...	0.000042915672...	0	0.011700053182	
1359687600	3	0.1	3	0	0.353755555555...	68106604.91330...	-0.022594020707...	0	0.302009742117	
1359687600	3	0.3	3	0	0.353755555555...	68106604.91330...	-0.015235583898...	0	0.240330675946	
1359687600	3	1	3	0	0.353755555555...	68106604.91330...	0.000415387331...	0	0.062704143351	
1359687600	3	3	3	0	0.353755555555...	68106604.91330...	0.000552570178...	0	0.011337717059	
1359687600	3	0.1	15	0	0.353755555555...	68106604.91330...	0.016668765676...	0	0.384897665169	
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1359687600	3	1	15	0	0.353755555555...	68106604.91330...	0.029103585754...	0	0.111844038780	
1359687600	3	3	15	0	0.353755555555...	68106604.91330...	0.009354066884...	0	0.011379605227	
1359687600	3	0.1	49	0	0.353755555555...	68106604.91330...	0.068793494005...	0	0.500830525043	
1359687600	3	0.3	49	0	0.353755555555...	68106604.91330...	0.074501185120...	0	0.452073514141	
1359687600	3	1	49	0	0.353755555555...	68106604.91330...	0.078996886154...	0	0.226470424844	
1359687600	3	3	49	0	0.353755555555...	68106604.91330...	0.042014584666...	0	0.014063126024	
1359687600	3	0.1	225	0	0.353755555555...	68106604.91330...	0.111040061223...	0	0.766232840350	
1359687600	3	0.3	225	0	0.353755555555...	68106604.91330...	0.097623249380...	0	0.772002174414	
1359687600	3	1	225	0	0.353755555555...	68106604.91330...	0.091339020558...	0	0.701200059533	
1359687600	3	3	225	0	0.353755555555...	68106604.91330...	0.110636712777...	0	0.116465620451	
1359698400	6	0.1	1	0	0.515333333333...	68107318.64632...	-0.137276808472...	0	0.605442549847	
1359698400	6	0.3	1	0	0.515333333333...	68107318.64632...	-0.122692190793...	0	0.611260053619	
1359698400	6	1	1	0	0.515333333333...	68107318.64632...	-0.037991482582...	0	0.374994345682	
1359698400	6	3	1	0	0.515333333333...	68107318.64632...	0.000187509404...	0	0.017862549197	
1359698400	6	0.1	3	0	0.515333333333...	68107318.64632...	-0.116006077444...	0	0.648591387783	
1359698400	6	0.3	3	0	0.515333333333...	68107318.64632...	-0.108707937711...	0	0.661047043609	▼

HARP-spatial



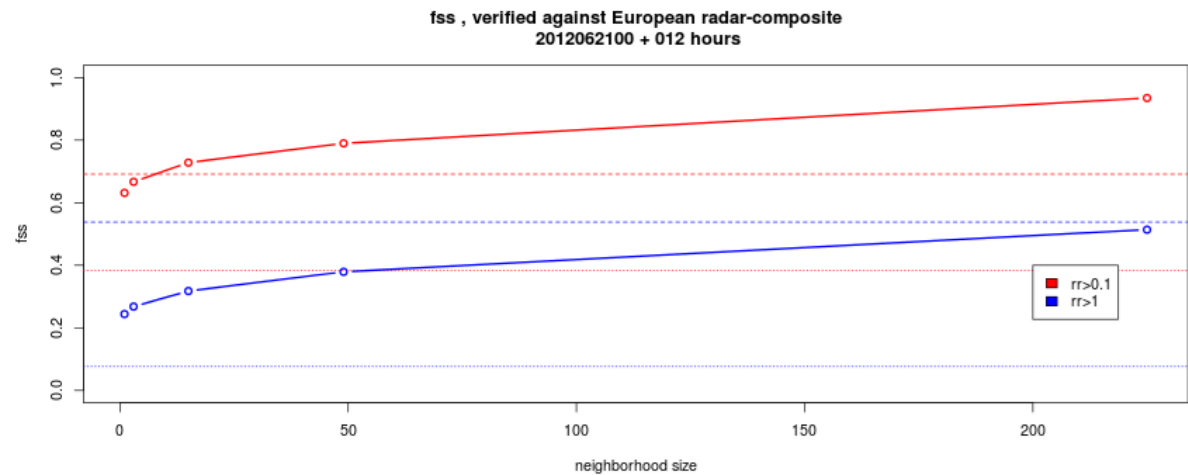
HARP-2D: HIRLAM ALADIN R package for spatial verification

Select verification method
Fraction Skill Score (FSS)

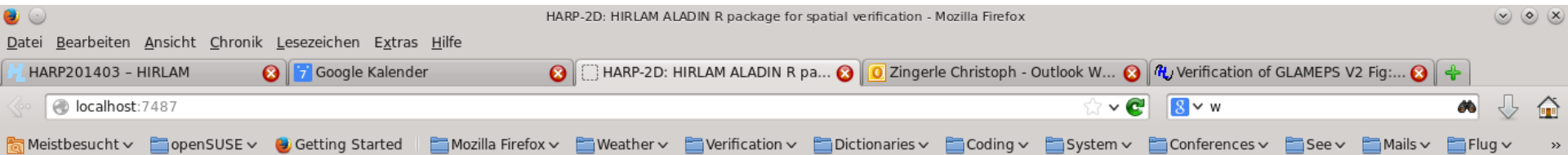
Select a score to plot
fss

Select leadtime
12

Select threshold
 0.1
 0.3
 3



HARP-spatial



HARP-2D: HIRLAM ALADIN R package for spatial verification

Select verification method

Fraction Skill Score (FSS)

Select a score to plot

fss

Select leadtime

12

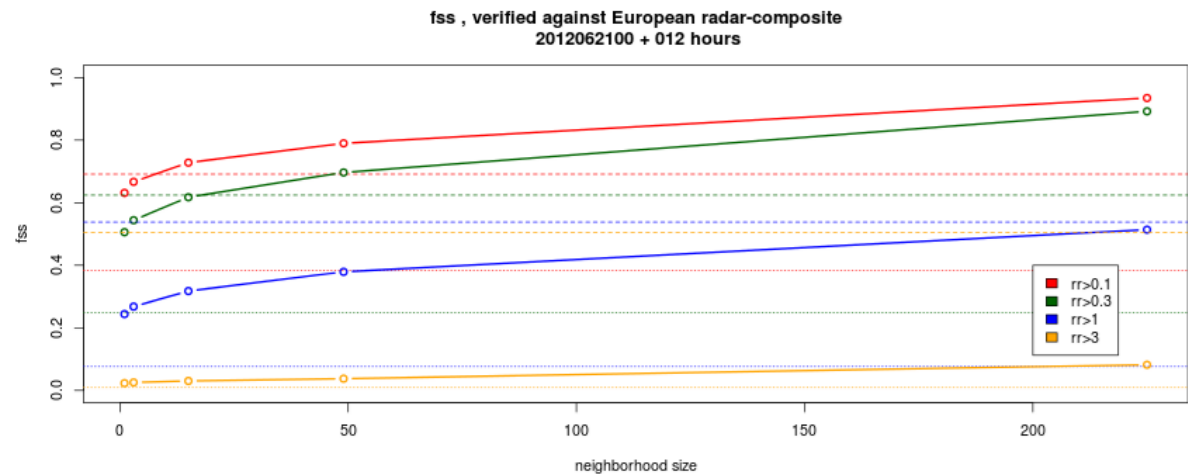
Select threshold

0.1

0.3

1

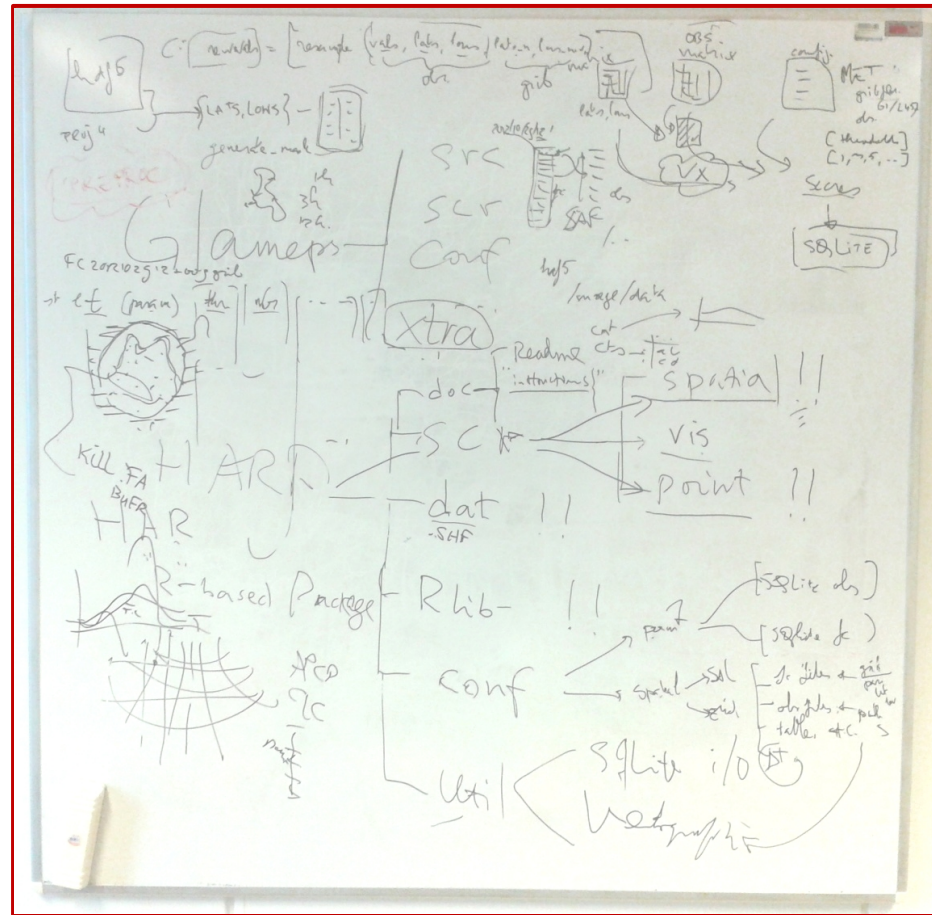
3



Hirlam – Aladin R-Package

Which is not just an R-package

- Provide tools for several verification issues (e.g. work with spatial and point data, ensemble, ...)
- Utilities to read data
- Configuring a verification routine with local data
- Example data and working examples
- Open to extensions, new scores, data sources, ...



TODO's

- First version will be on HARP GIT soon(er or later - before or during summer?)
 - Portable to other systems (to be tested)
 - Need cleanup (increase consistency between eps and spatial tools, conventions)
 - Completion of code (visualization, shiny, methods,...)
 - Update of installation instruction, documentation and examples
 - Script to run from command line

TODO's

- Encourage people to make use of HARP
 - Get code
 - Install
 - Run examples
 - Put your observation data in correct form
 - Add your own methods/utilities and participate

