Zentralanstalt für Meteorologie und Geodynamik
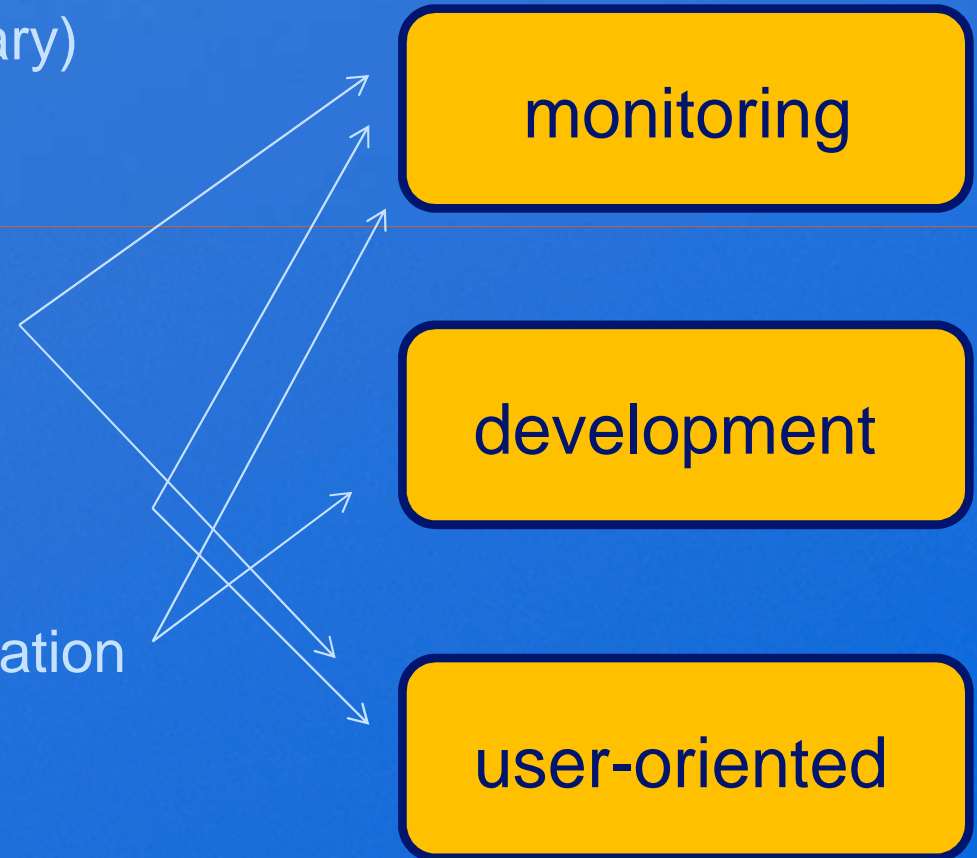
Common HIRLAM / ALADIN plans in verification

EWGLAM / SRNWP meeting

8. - 11.10.2012, Helsinki

o   Monitoring systems (short summary)

o   Tasks

   o   Verification toolbox

   o   Spatial / field verification

   o   Limited area ensemble verification

   o   User oriented verification

o   Summary

monitoring

development

user-oriented

HIRLAM:

- o Reference system (RCR) providing a common benchmark

- o Field data is sent to a common database for verification

- o All EWGLAM stations are used for verification

- o Montoring team is taking care

ALADIN:

- o Extracted forecast data for station location sent to common databas

- o Restricted number of stations used for each contry

Monitoring systems are planned to be kept seperated – each consortia will maintain and improve their own montioring tools (e.g. 1 month visit to Ljubljana to work on reporting)

Verification is seen as a good opportunity to do development in a common framework (to be defined)

- o Each consortia has its own tools for "daily and long term monitoring"

- o With the development towards higher resolution and EPS new challenges for verification are upcoming

- o They need to support further model development, communication with controlling and funding authorities and customers

- o A (preliminary) task force has been set up:

  - o Discussing the fields of common development

  - o Side meeting in Marrakech, Helsinki and Kopenhagen (end October)

Goal:

To get a verification framework that is

o   Modular

o   Extendable in any direction (EPS verification, spatial, end-user
       oriented)

o   Portable to different environments

o   Easy to use - intuitive

o   Flexible to adopted to individual needs

o   If possible adopt same data structure with the monitoring tool
       and with Hirlam verification tools

General decision: New tools will be developed in a common framework.

- o Common verification tools to be developed on existing packages in R.
- o Interface from local archives (model / observation data) to plug data into R-tools (SQLite)
- o Tools should be running locally
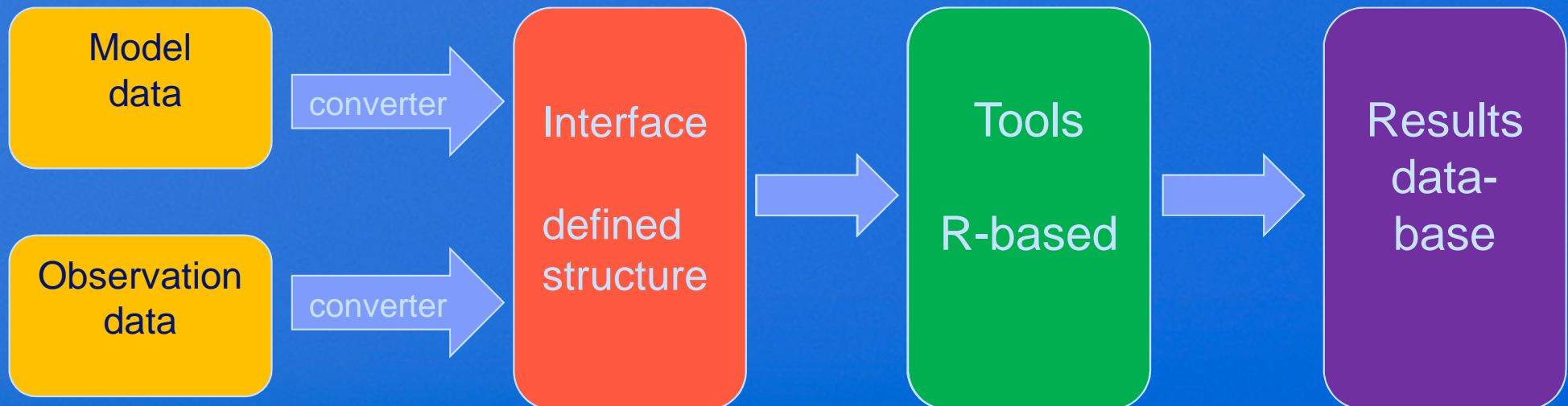
Growing resolution of forecast shows different phenomena / structures

- o Spatial verification methods developed during the latest years
- o Operational implementation is not straight forward (for a large number of forecasting systems)
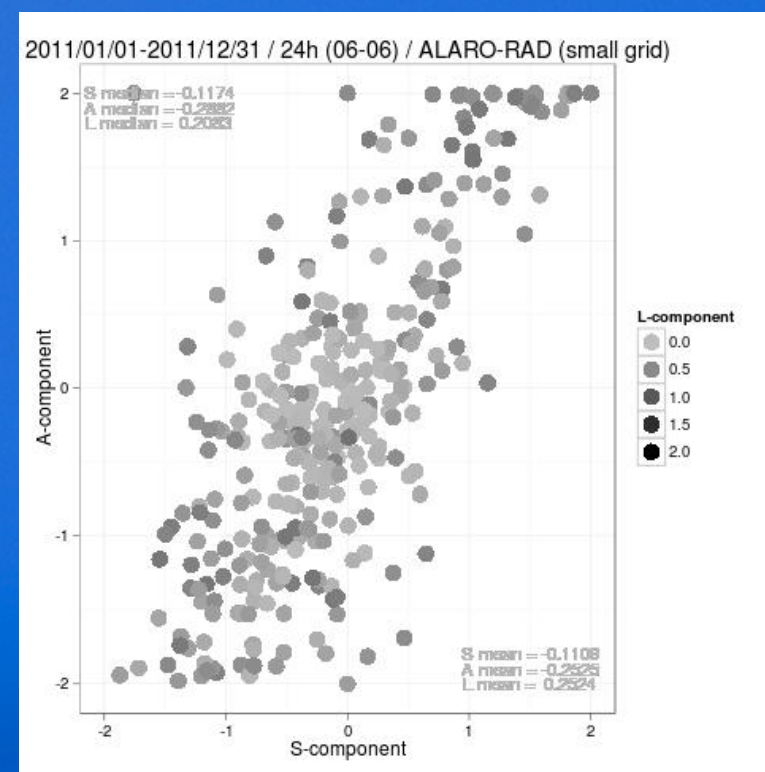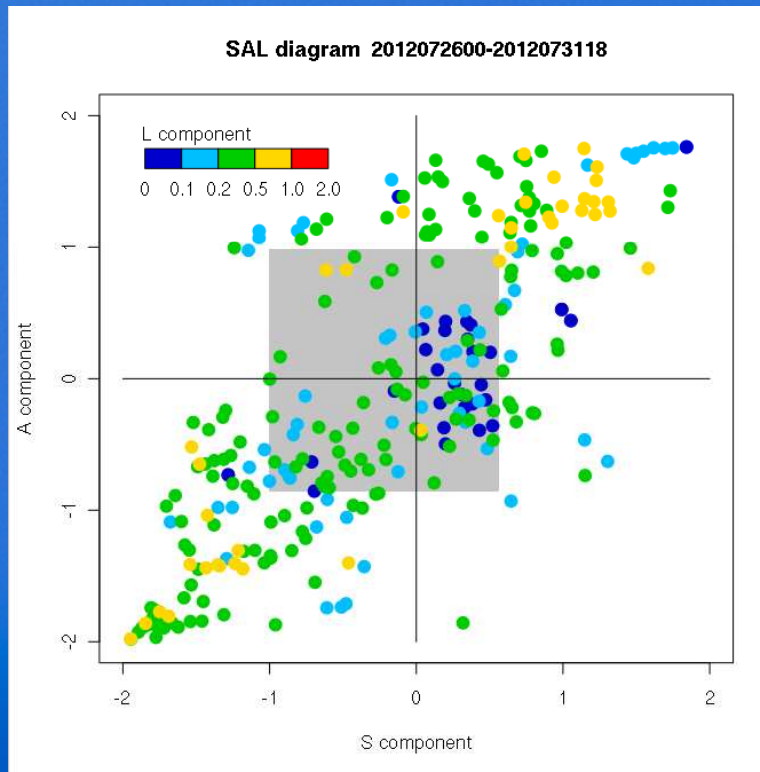
Observations / truth

- o Need for high resolution observation fields
- o Obtained by (new) observation systems – radar, satellites

Spatial /field verification

Work is started in some countries (Austria, Belgium) in an R/SQLite framework

o SAL – Method in R (with a faster SAL core in fortran)

o Testing of other spatial scale methods in Austria

o Based on INCA analysis + plan testing other observational data (satellite and radar)

SAL diagram 2012072600-2012073118

2011/01/01-2011/12/31 / 24h (06-06) / ALARO-RAD (small grid)

Limited area ensemble verification

Members of the consortia are more and more contributing to the field

- o Methods for verification are developed, cooperation is established (GLAMEPS)
- o SQLite interface and some classical EPS-verification methods were implemented (Simona Tascu, Alex Deckmyn)
- o Further tasks need to be defined during verification workshop in Kopenhagen

Who are our users, what do they need, how can we present verification results to them?

Problems:

o   Institutes have different types of customers in a number of sectors.

o   What decisions are taken upon the forecast by the customer

>   "impossible" task?

Need for definition of exemplary end-user

o   Questionnaire was sent to LTMs

o   Elaborate exemplary customers and products per sector (e.g. warnings)

o   Start thinking about what scores are most representative

Verification Task Force provides:

o   the framework for common verification tools:

         common data structure of interface

         co-ordination of the development of tools

         data organization inside the verification tools

         guidelines and documentation, working examples

         support, version control, stable software packages

Not provided by the Task force itself:

o   verification scores / numbers

Thanks!