The HIRALD working group

and some preliminary results

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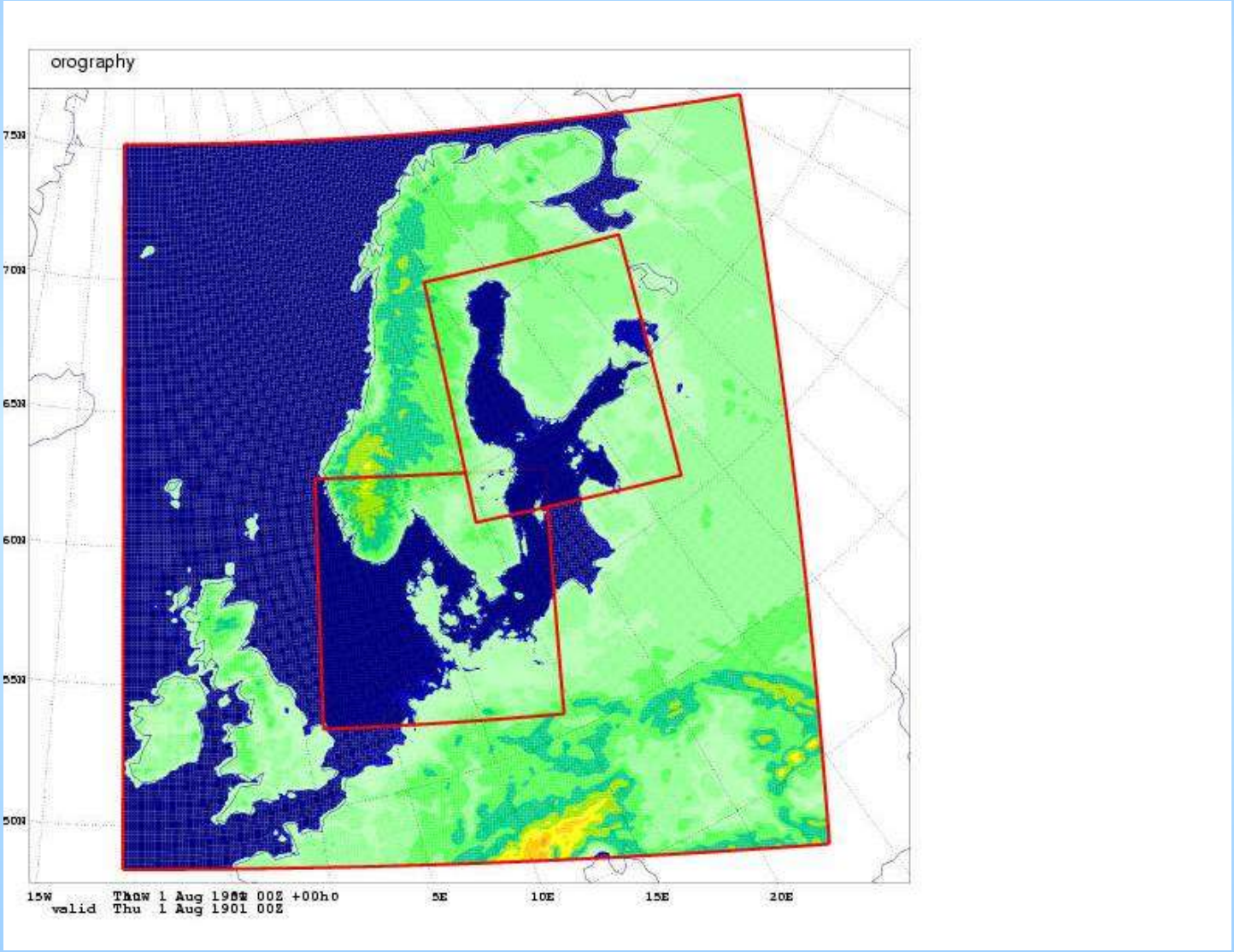
HIRALD website: http://science.dmi.dk/hirald

Thanks to people at Meteo France and the ALADIN countries for help with setting up the code and answering all our questions

Model domains



HIRALD working plan (what have we done so far)

- March 2004: ALADIN-NH Training course at Meteo France.
- July 2004: Working week at DMI with Ryad El Khatib (ALADIN setup at ECMWF, CY26).
- Autumn 2004: setting up CY28T3 at ECMWF on HIRALD domains with a test period of the first week of July 2003 where there are some convective storm cases over Scandinavia.
- November 2004: Training course and working group on physical/dynamical interfacing in ALADIN, in Prague.
- February 2005: HIRALD working week at DMI to update and syncronise work plus making plans for future work.

Work in progress and (near) future plans

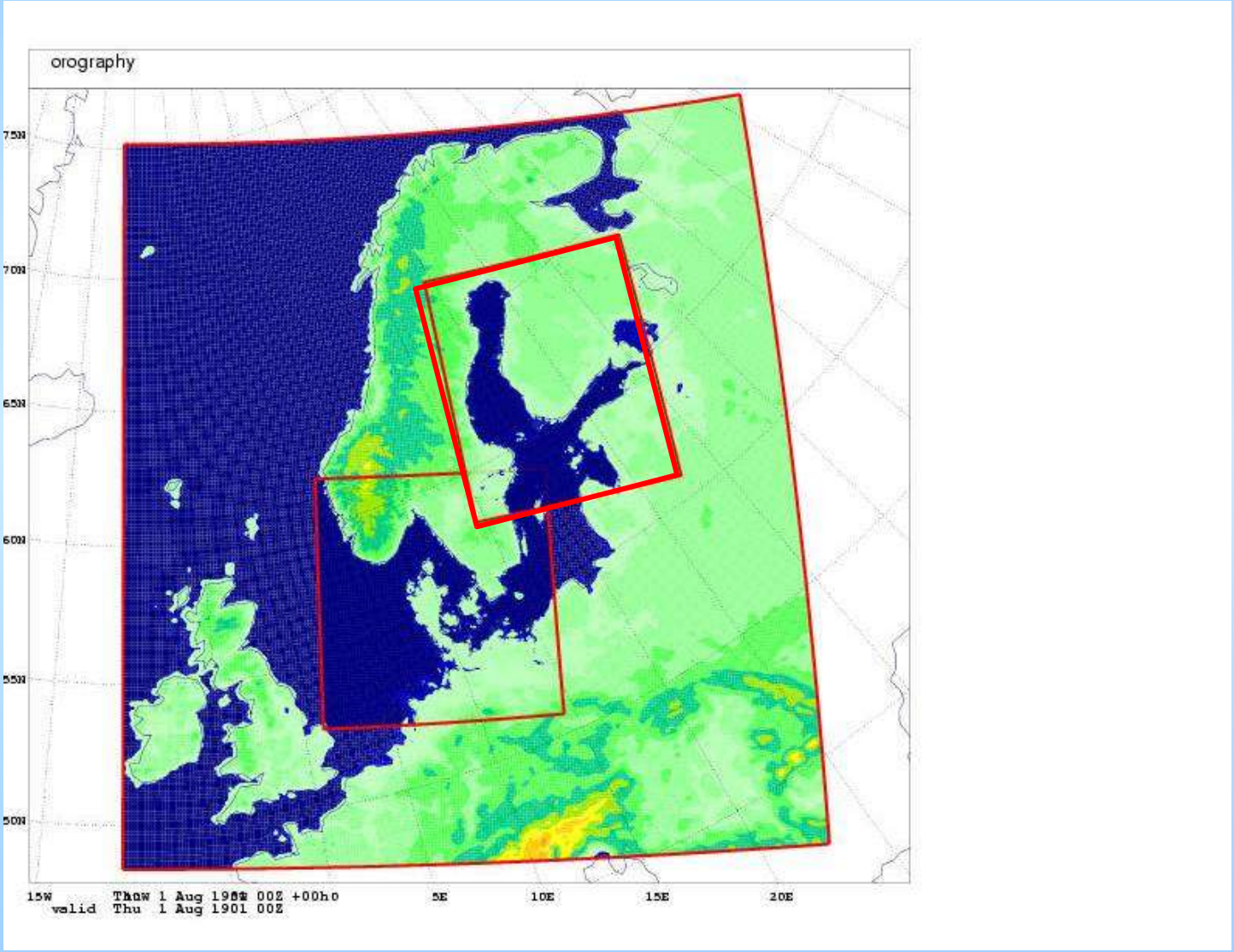
dmi.dk

- Boundary preparation so can use HIRLAM boundaries (preliminary version working on IBM at ECMWF)
- Testing of ALADIN(NH) vs HIRLAM on longer periods
- Integration of HIRLAM physics into the ALADIN system
- Setup on Linux (SMHI) and NEC (DMI) to run operational test setups in parallel on a daily basis

Some preliminary tests of NH-ALADIN over the Finish area

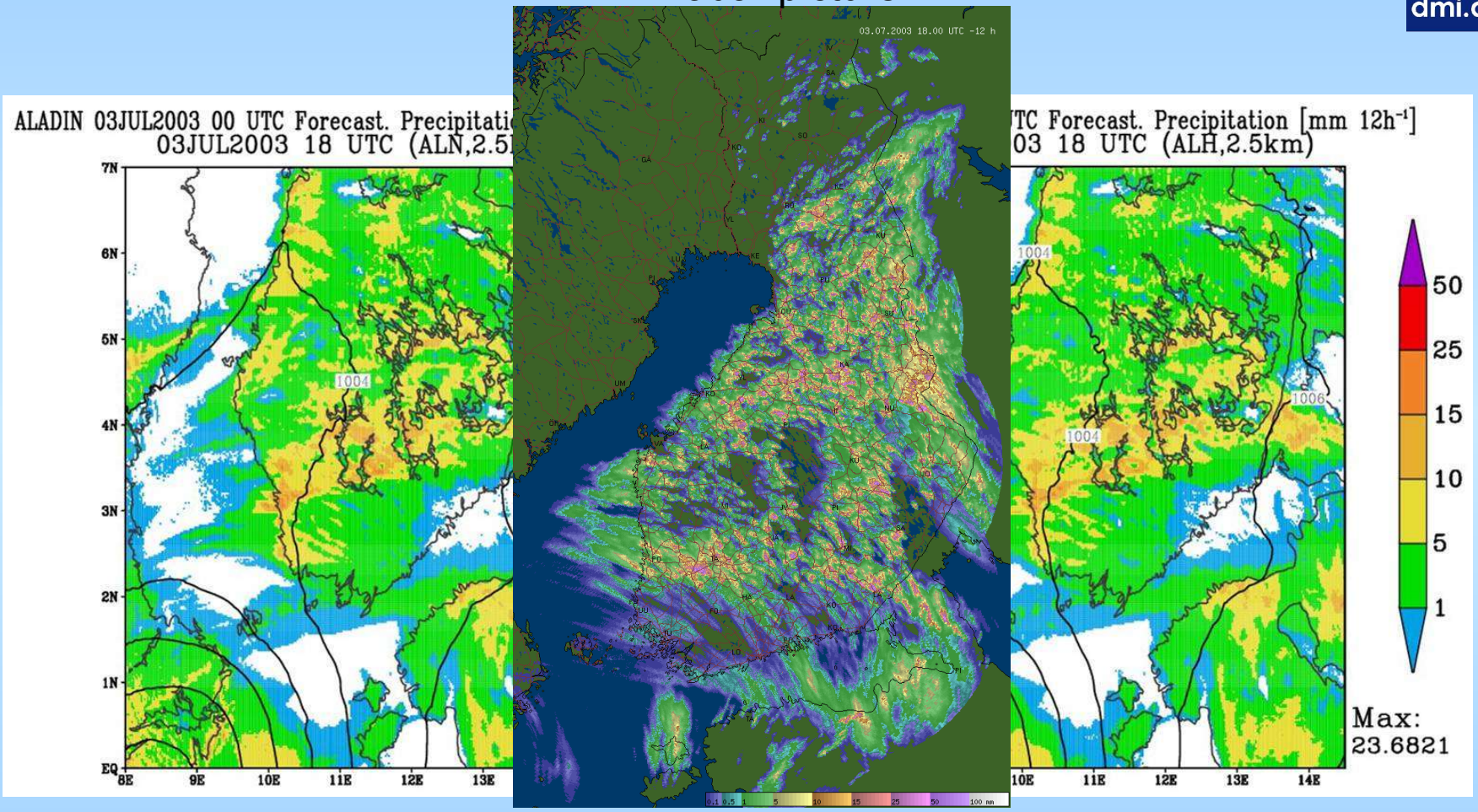
by Sami Niemelä (FMI)

Model domains



Precipitation event

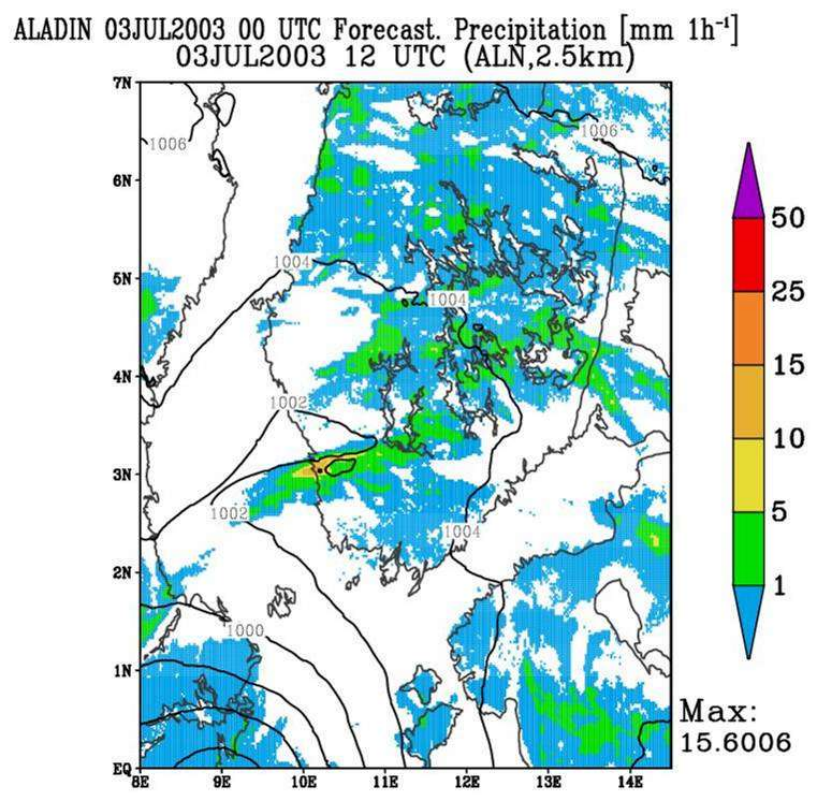
Radar picture



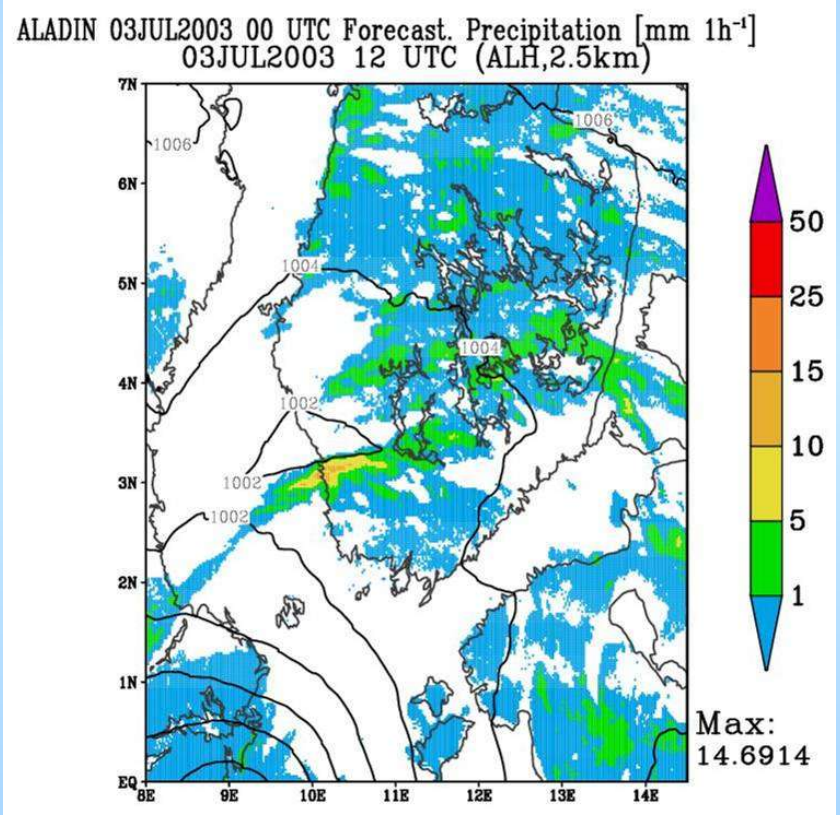
ALADIN Hydrostatic 2.5km resolution

ALADIN Hydrostatic 2.5km resolution

1hour precipitation

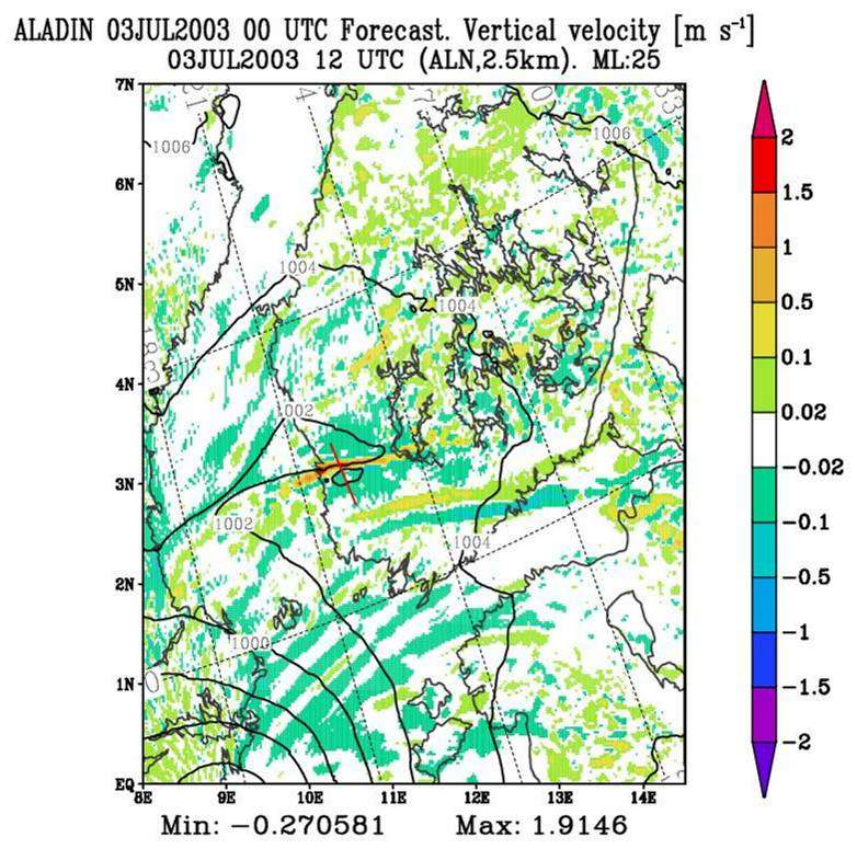


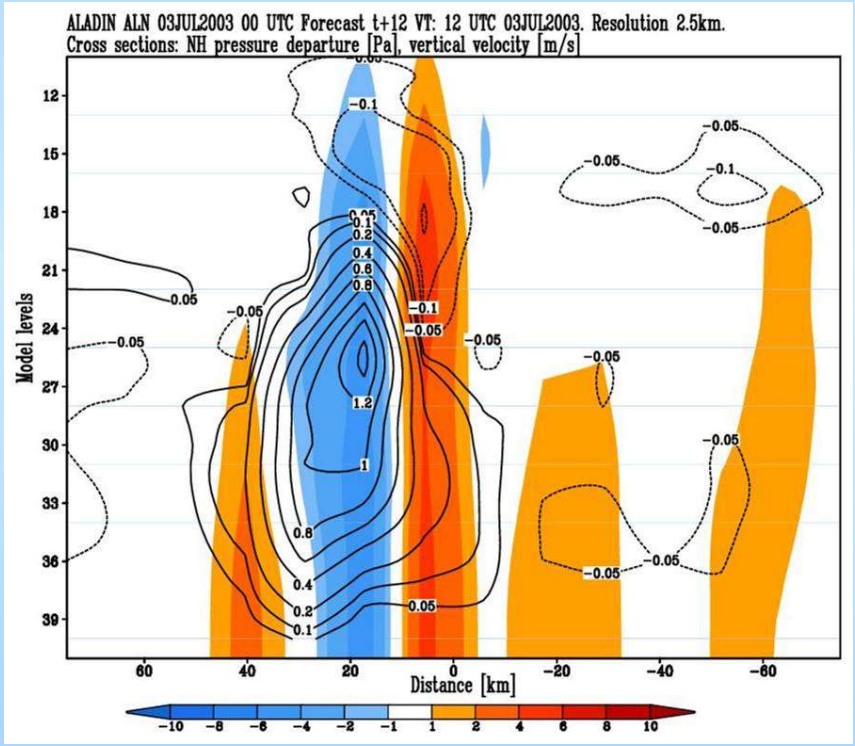
Non-hydrostatic



Hydrostatic

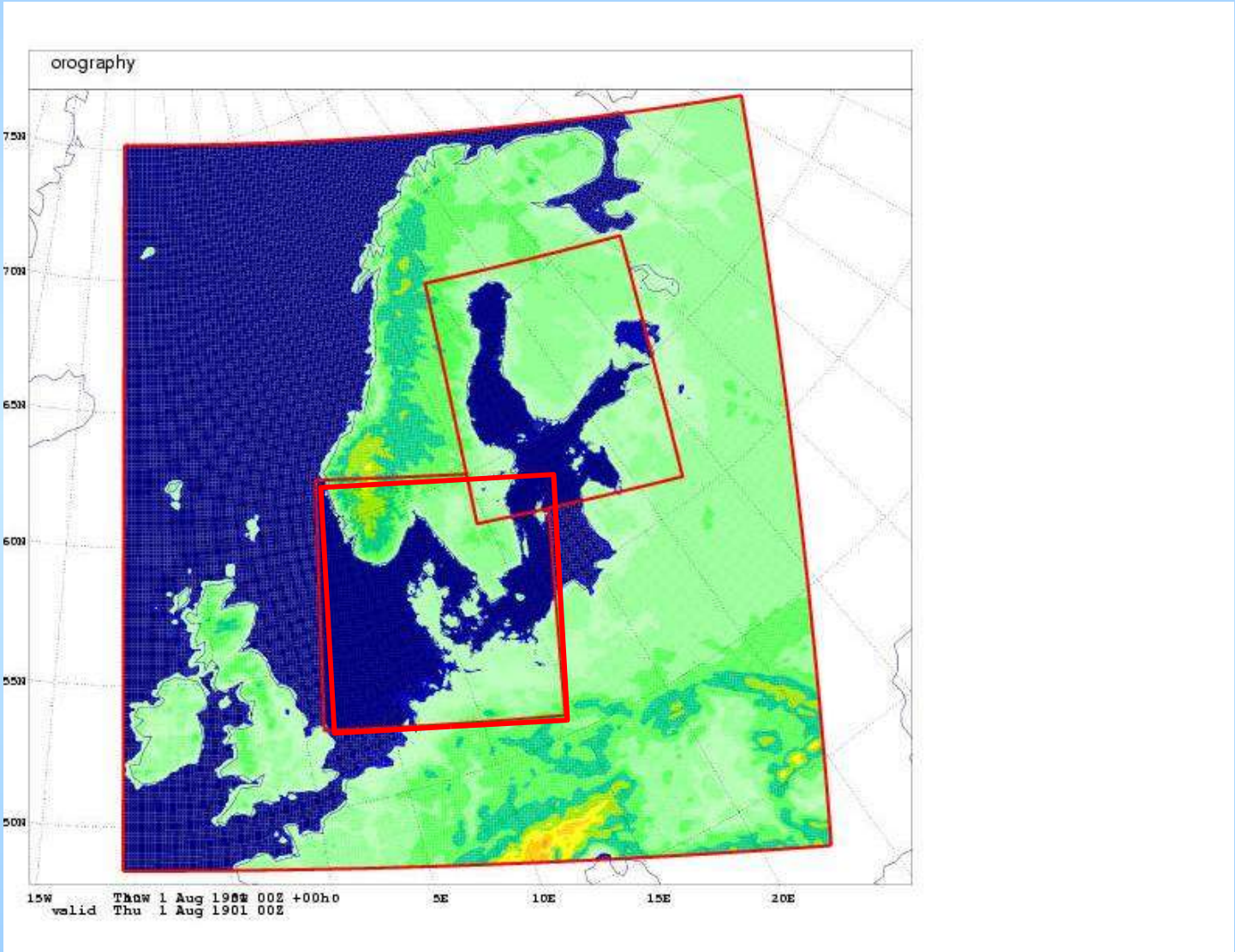
Vertical velocity within precipitation cells



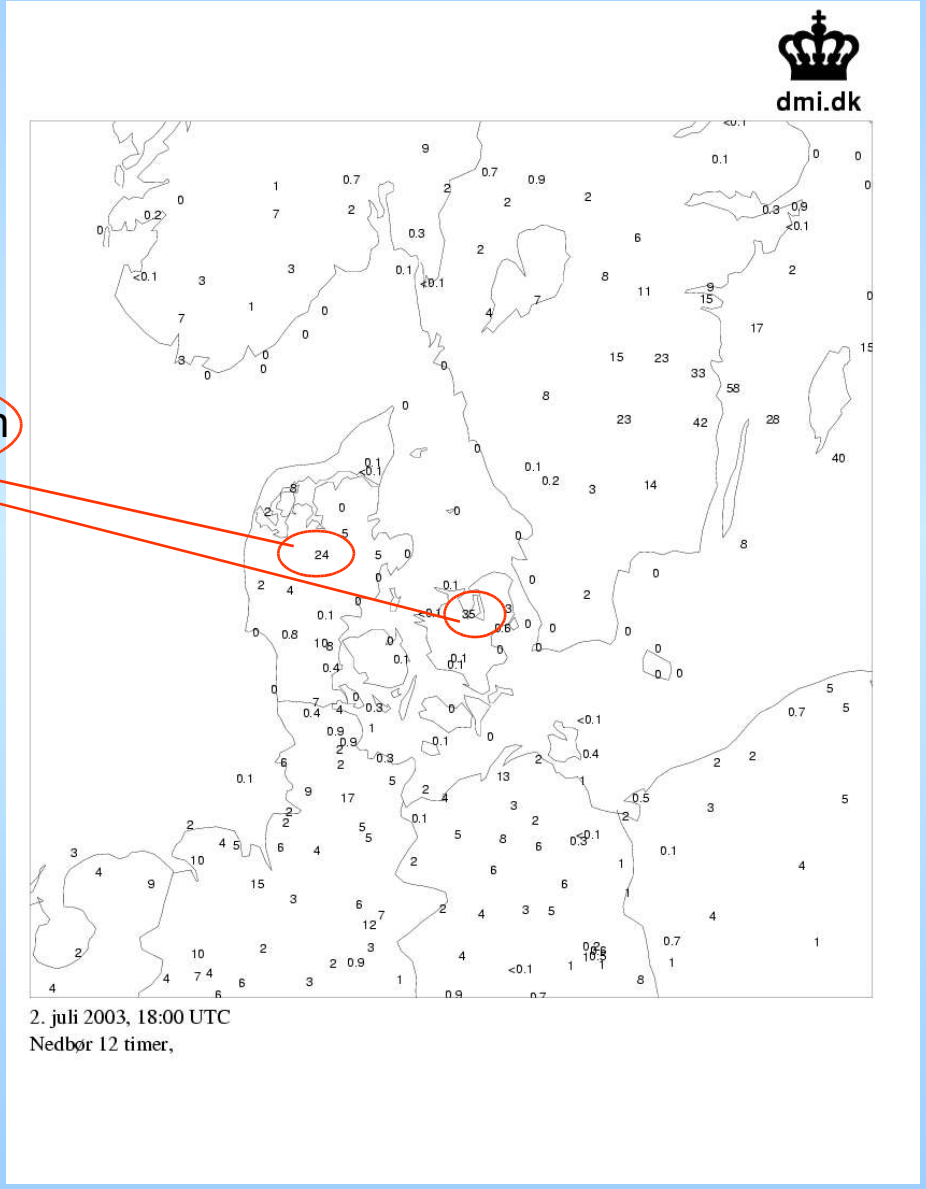


Danish precipitation case (Karina Lindberg, DMI)

Model domains

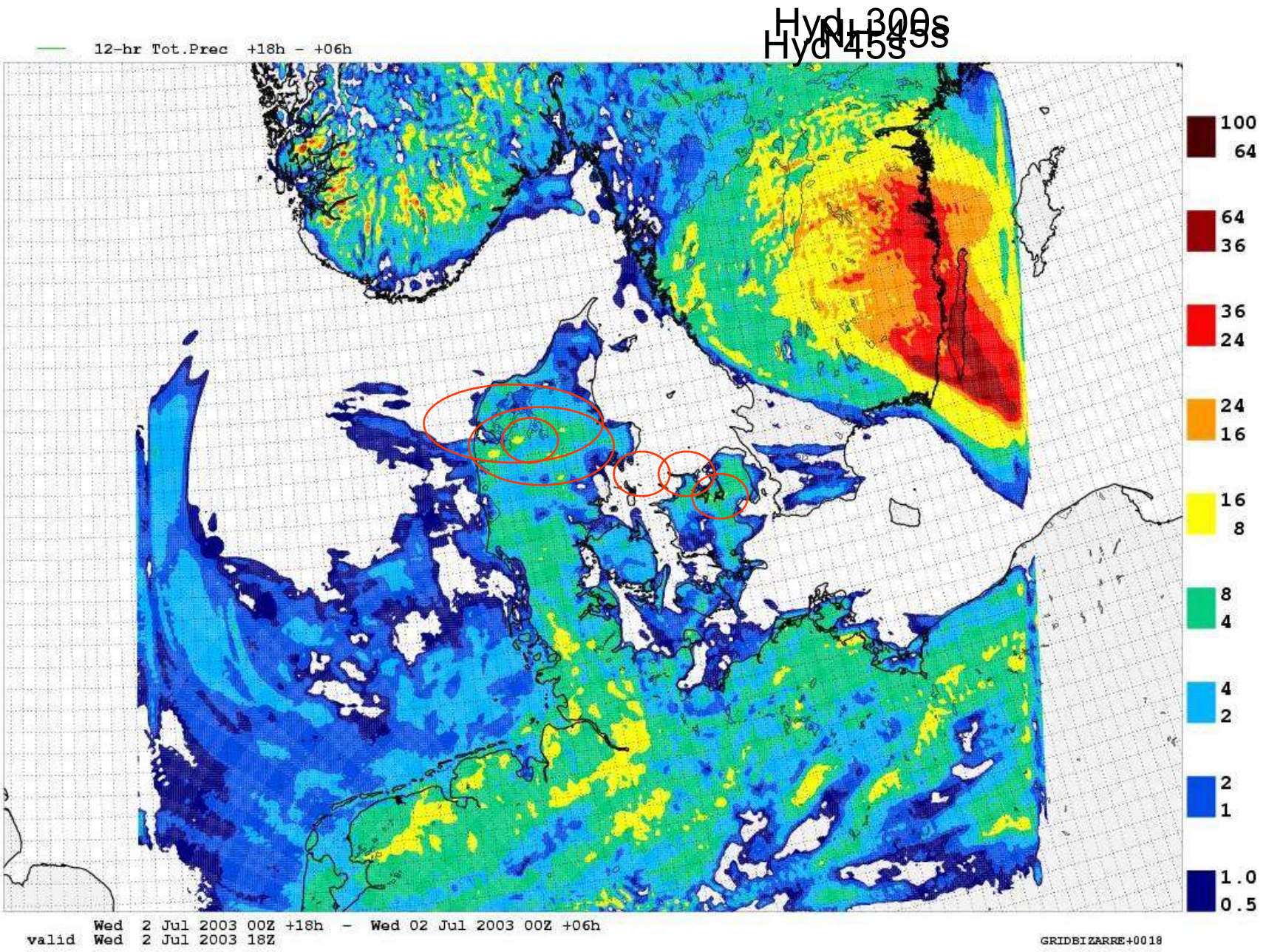


Precipitation observations



Hyd 30s

Hyd 45s



Some preliminary tests comparing HIRLAM and ALADIN

by Ulf Andrae (SMHI)

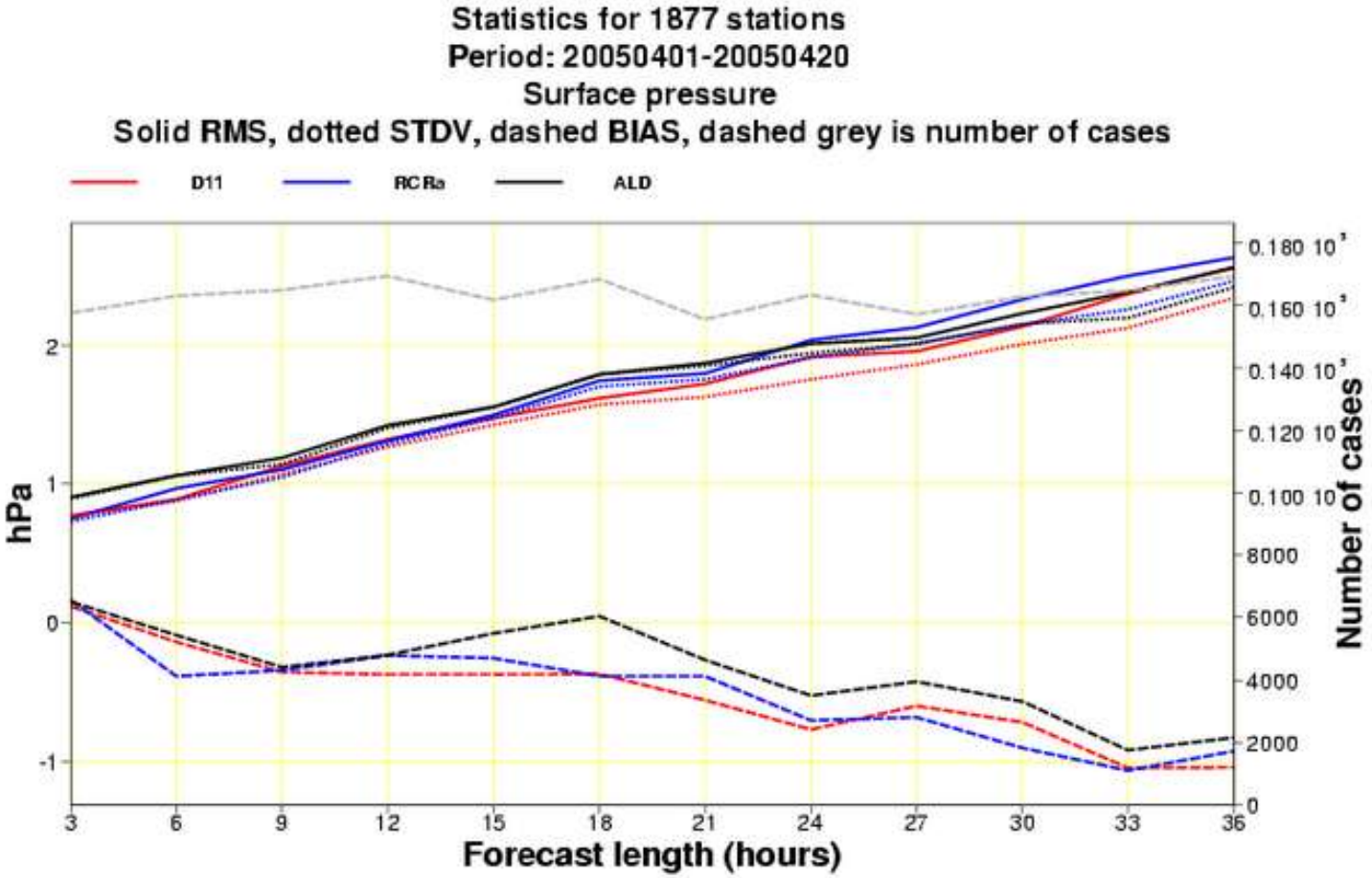
Verification of ALADIN 1st-20th of April 2005

- **ALD**: ALADIN hydrostatic 11 km
- **D11**: HIRLAM hydrostatic 11 km
- **RCRa**: HIRLAM hydrostatic 22 km (boundary for ALD and D11)

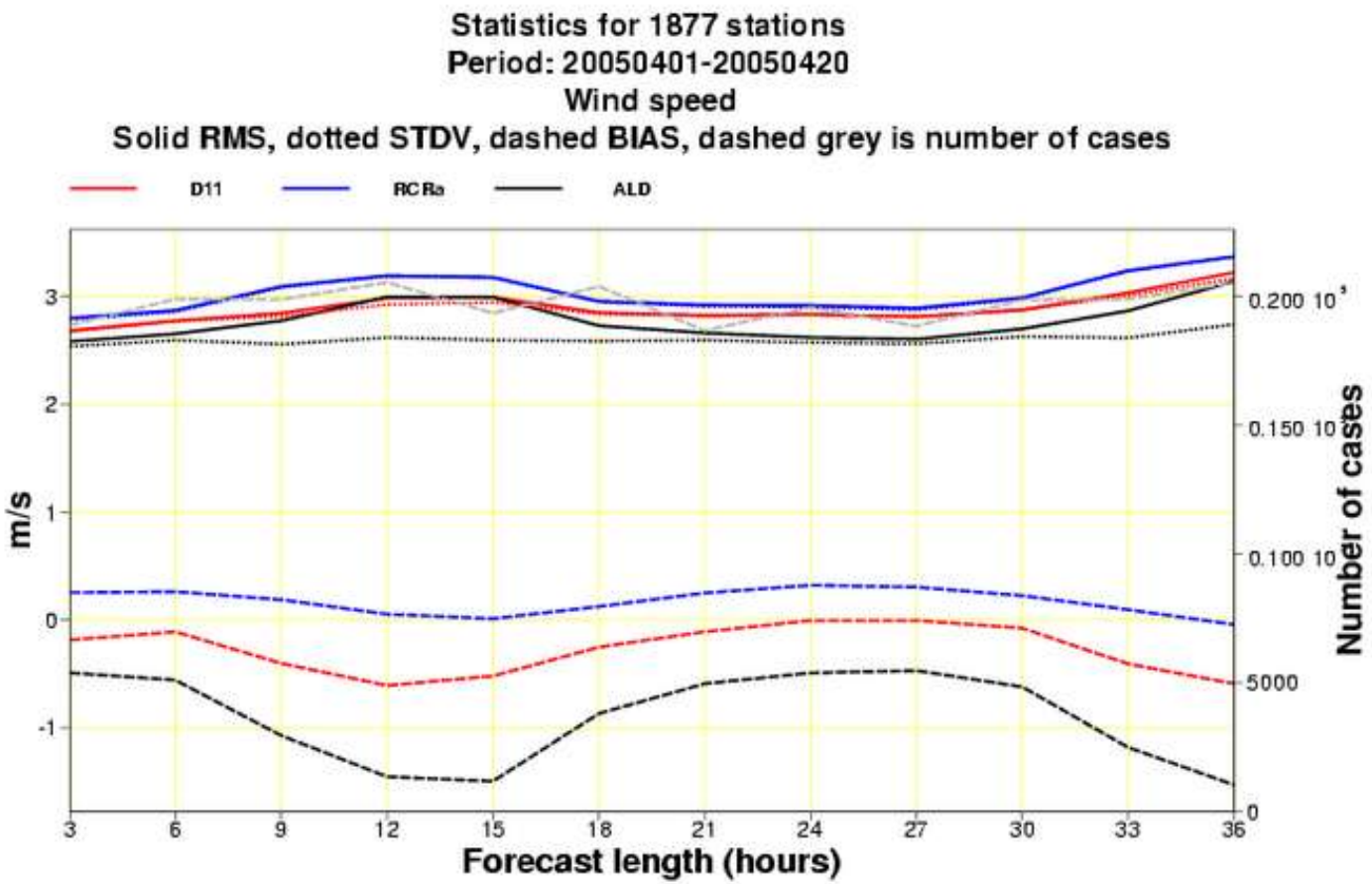
Conditions: One 36h run each day with boundary update every third hour. Initial data is interpolated RCRa forecasts, i.e. "cold start" every time (no data assimilation).

NB!! The difference in the surface parameters is probably due to an errorneous usage of soil moisture and canopy water from RCRa to ALD.

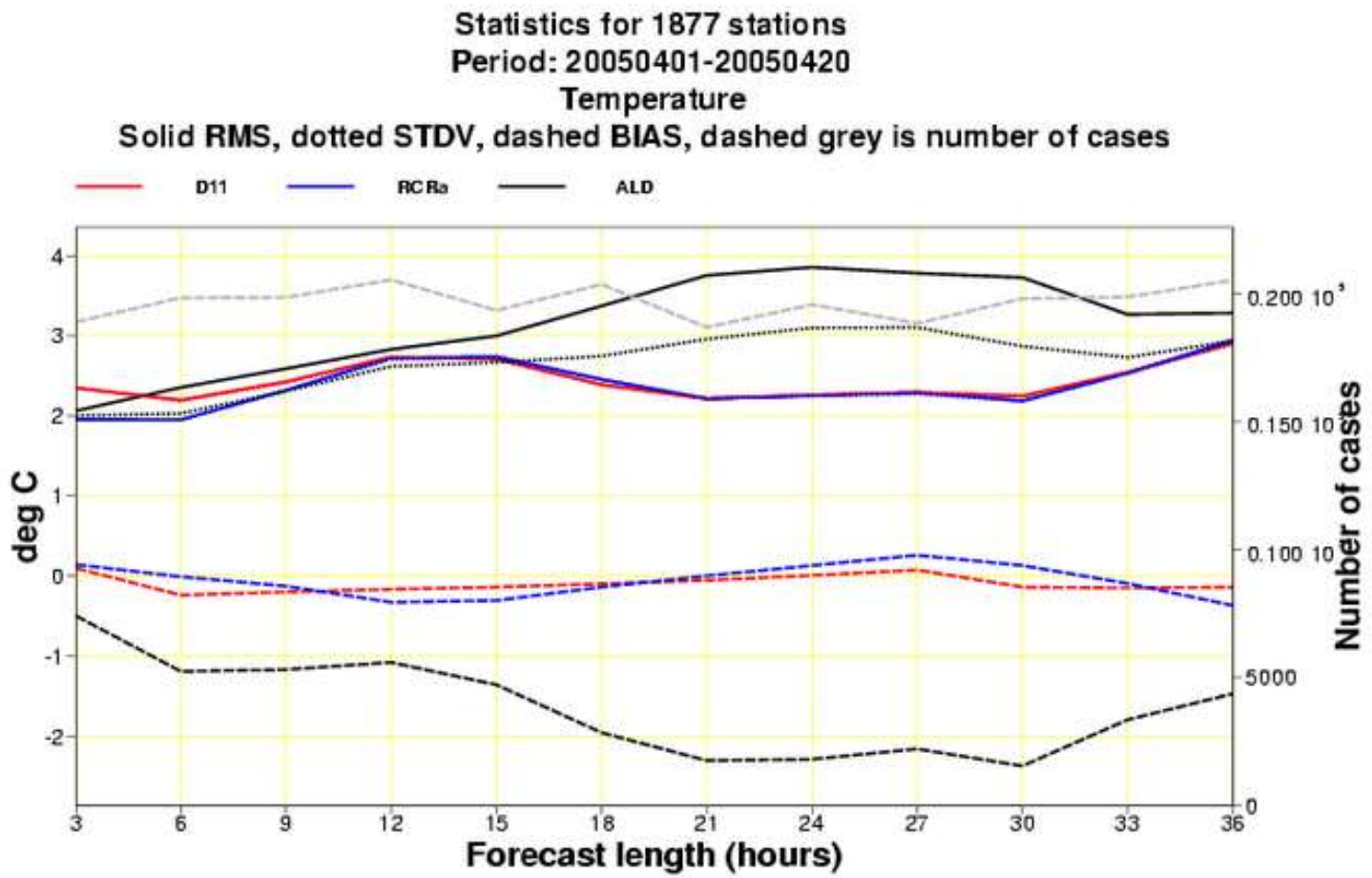
Surface pressure



10 meter Wind speed



2 meter temperature



Future plans

- Parallel test setup of ALADIN (NH) with and without HIRLAM physics on a daily basis (with HIRLAM boundaries)

2006 and onwards

- AROME prototype (CY29T2, CY30 …)
- Data assimilation