Schwerewelle Jahrestreffen 2024

www.blipmaps.nl

Michel Hagoort - setup & fine-tuning

David Hofstee - daily runs

Antoine Megens - website

Sponsored by KNVvL

(Royal Netherlands Aeronautical Association)

RASP BLIPMAP

RASP Regional
Atmospheric
Soaring
Prediction

BLIPMAP Boundary
Layer
Information
Prediction
MAP

Dr. John W. (Jack) Glendening is a retired American boundary layer meteorologist and the founder of RASP

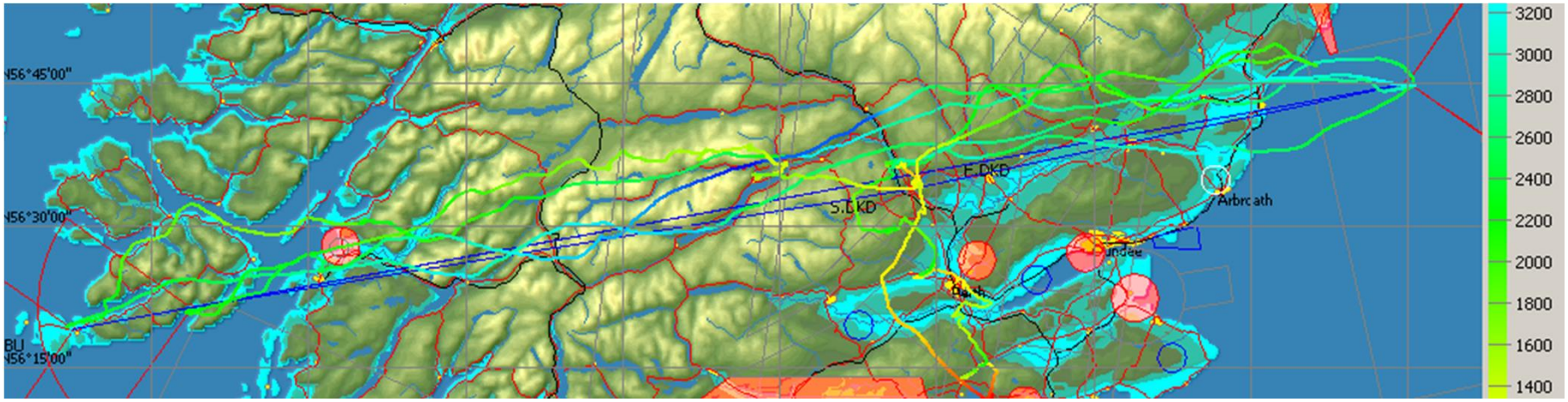
RASP produces highly detailed forecasts specifically for (hang-/para-)gliders. Famous for accurate convergence/wave forecast

RASP is freely available (& blipmaps.nl also for almost 15 years)

Potential of RASP

- OLC 2007 “Flight of the Year”-Award: John Williams 1016 km

- Creative turnpoint inspired by RASP UK



- Turnpoint 25 km from the coastline, rounded 2 times

- RASP predicted wave above the North Sea

RASP uses

- RASP uses the WRF weathermodel. RASP(-skin) translates “meteorological” WRF-parameters into “gliding" parameters

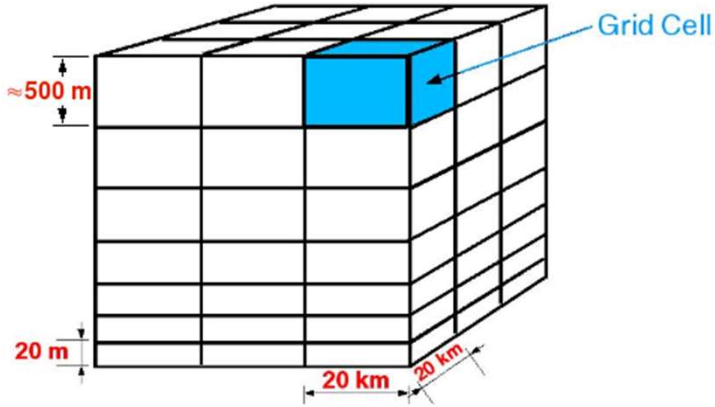
- WRF (Weather Research and Forecasting) weathermodel
  - Developed by: National Center for Atmospheric Research (NCAR), National Oceanic&Atmospheric Administration (NOAA, National Centers for Environmental Prediction (NCEP)), Forecast Systems Laboratory (FSL), Air Force Weather Agency (AFWA), Naval Research Laboratory, University of Oklahoma, Federal Aviation Administration (FAA)

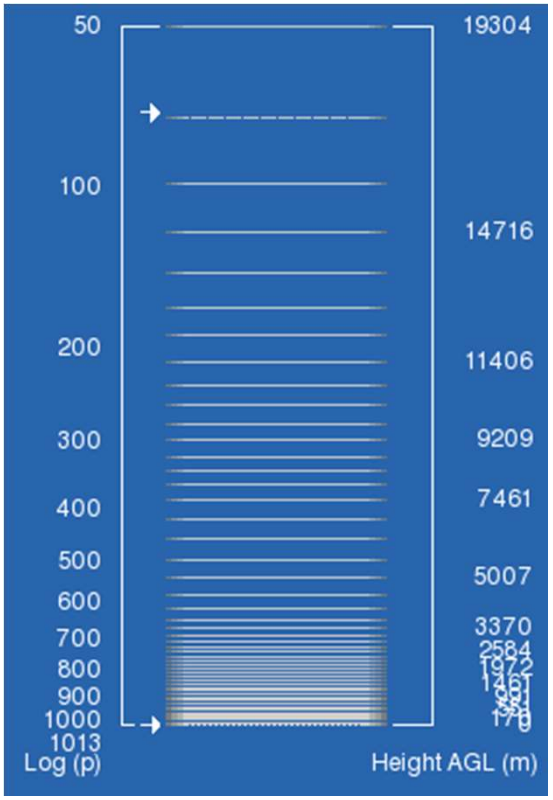
- The coarse GFS-NOAA/NCEP model outcomes as initial data
  - Outside North-America initial data has resolution of 0.25, 0.5, 1.0 deg
  - Every 6 hours (00, 06, 12 & 18 UTC), time steps of 3 hours, 1-10 days
  - Initial data of 00 UTC is available at ~3:15 local time

RASP uses

- 52 Altitude levels (adjustable) from 0 to 19304 meter AGL

- Average predicted forecast per cell/resolution determines size





- Static geographical data
  - Topographical height and slope
  - Land use
  - Soiltype, -temperature and -moisture
  - Greenness/green fraction

  in different resolutions

Calculation time determined especially by

- Resolution (4x4KM Netherlands, 1x1km NL1KM)
- Time interval (30 minutes)
- Time period (6 - 18 UTC)
- Area size
  - Netherlands area is 22.576 cells x 52 altitude levels
  - NL1KM area is 155.350 cells x 52 altitude levels
- Number of parameters

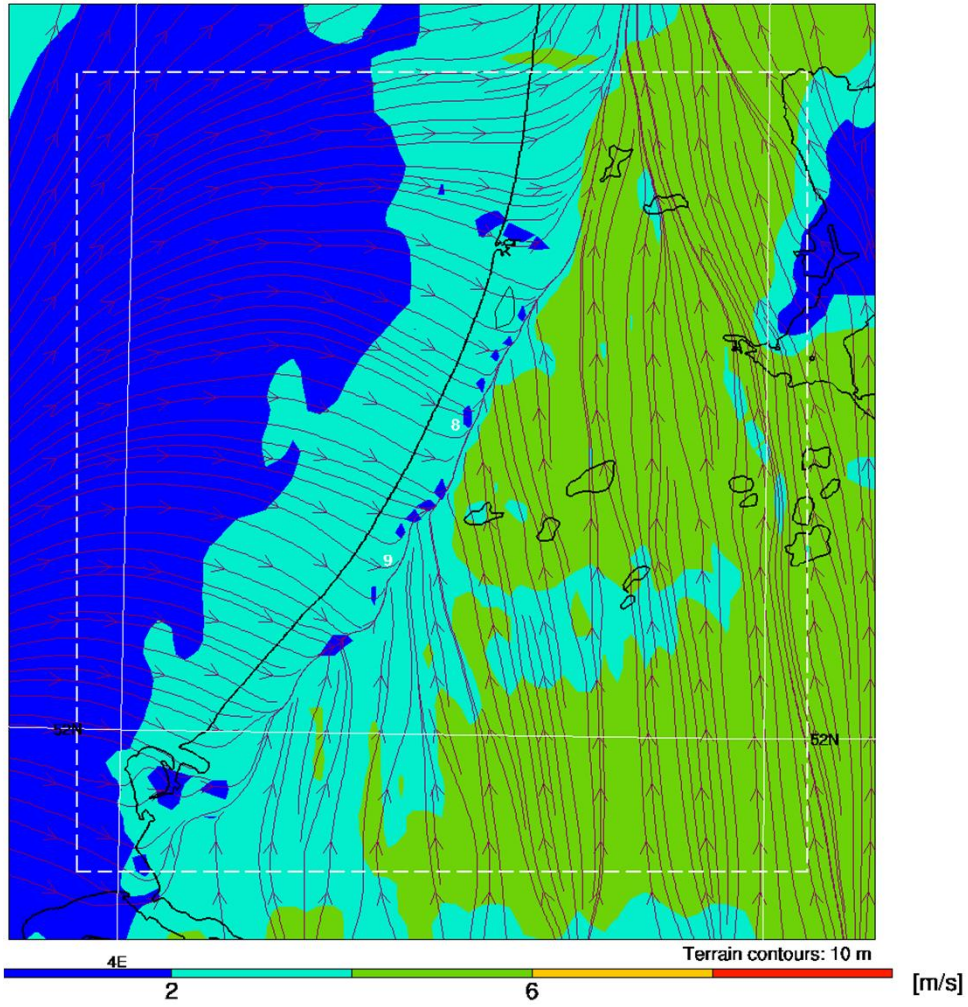
General remarks

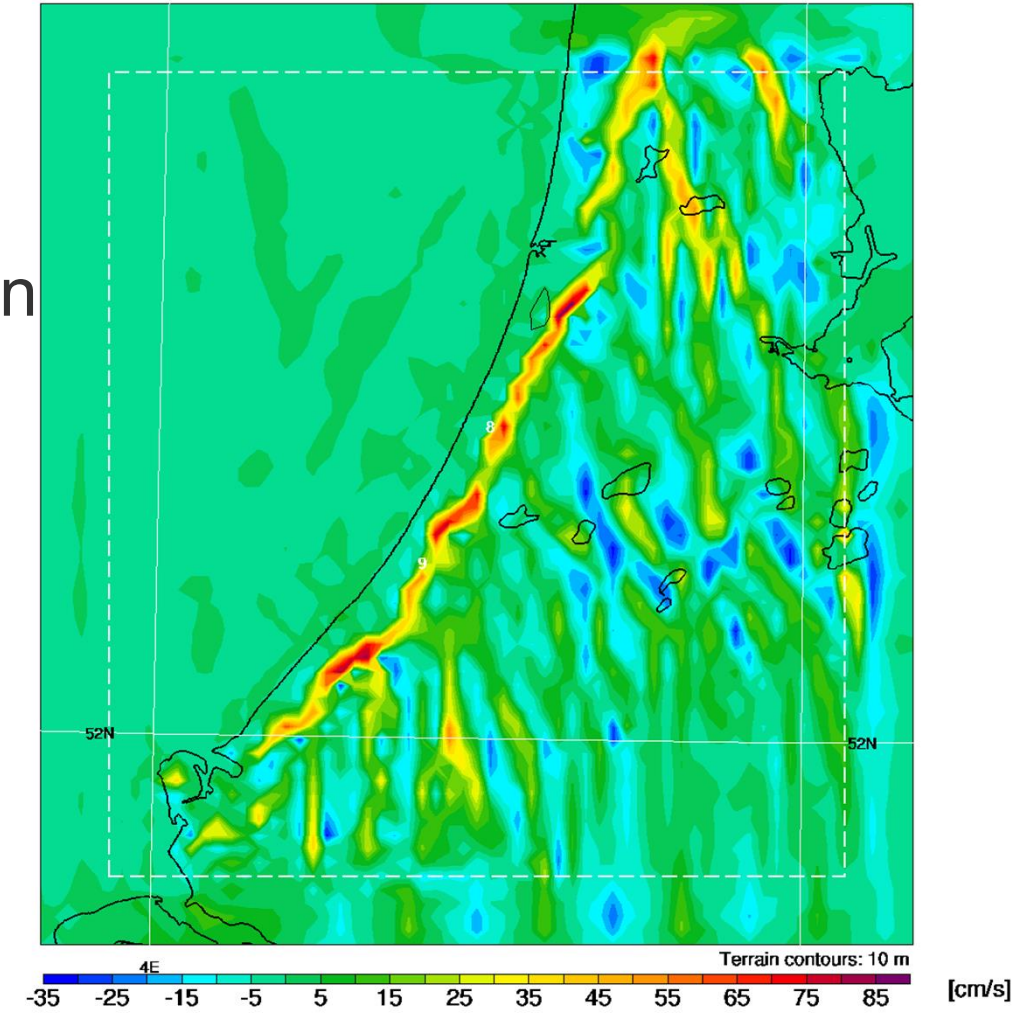
- Dotted line on the edge of the area
  - The model knows what happens outside the area but only at a coarse resolution. The fine and coarse results are not exactly the same. In the region outside the dotted line the results are merged into one another.
- Relative predications are better than absolute predictions
- Specific model difficulties
  - Clouds which are thinner than the height of a gridcell
  - When the land use varies strongly within a gridcell
  - Strong seasonal changes in the land use
- Expected underuse of NL1KM during summertime
  - Use “BL Max. Up/Down motion” for air movement within boundary layer
  - Enjoy blue/cloudstreets, seabreeze, ridge, convergence & wave in summer
  - See the massive effect of thunderstorms and downdrafts

Seabreeze

- Max. upward- or downward motion

- 1.4x1.4 km 01-06-’08 14:00



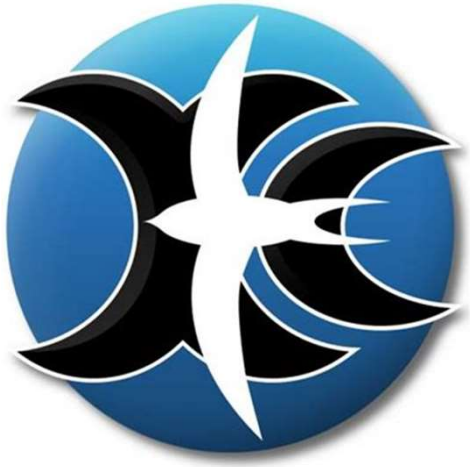


- Along the Dutch coast

- Surface wind at 10 meters

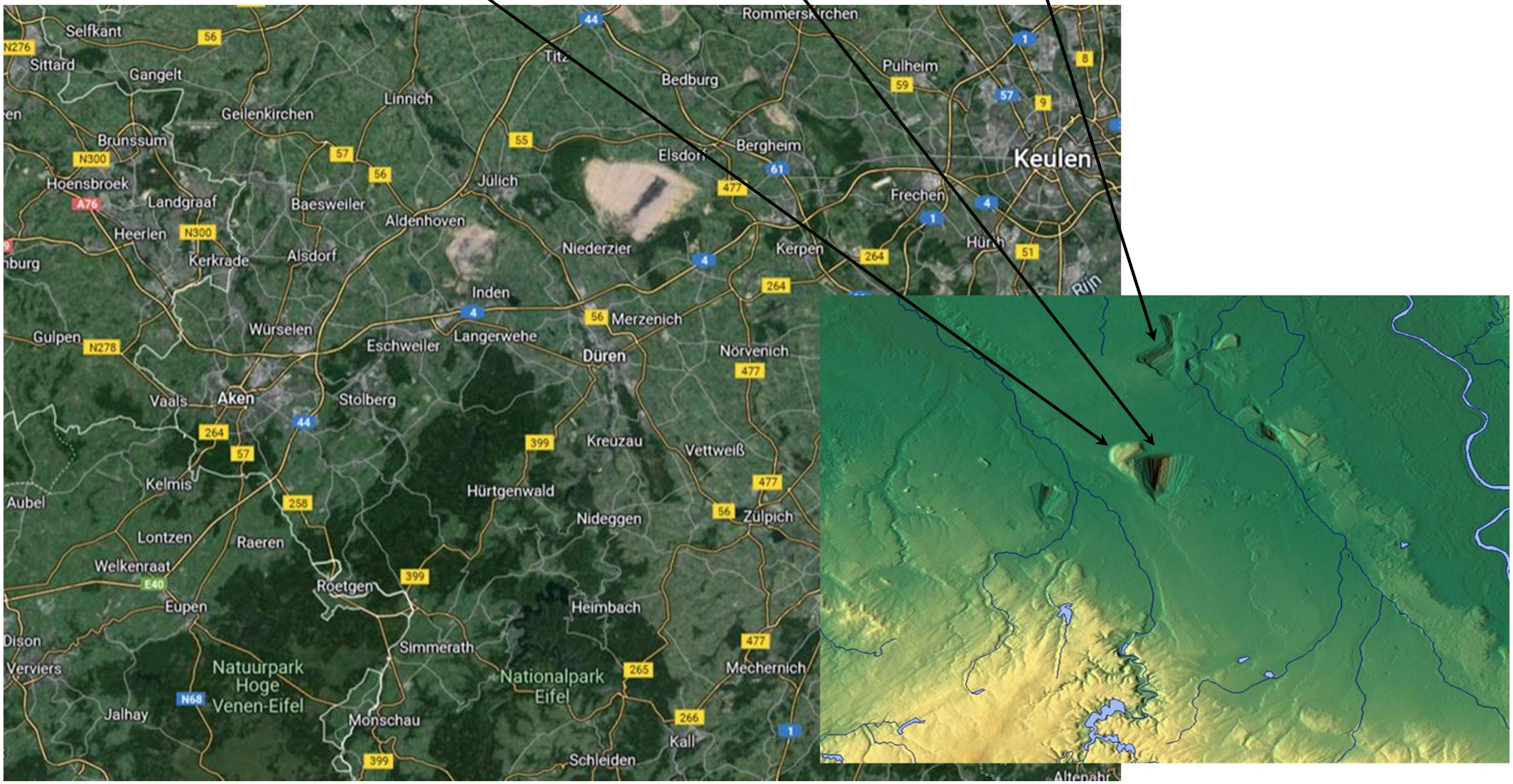
Blipmaps in flight XCSoar - Work in progress

- Wave parameters as field names not available
- Current legend/color schemes to render RASP data not suited
- Informed at XCSoar
  - Different way to import RASP data to be developed
  - Due to unknown reasons not applied
- Soon proposal by Blipmaps.nl
  - Similar to recently added for www.thermalmap.info
  - Hardcode wave parameter field names and legend
  - Hopefully in new XCSoar version this year

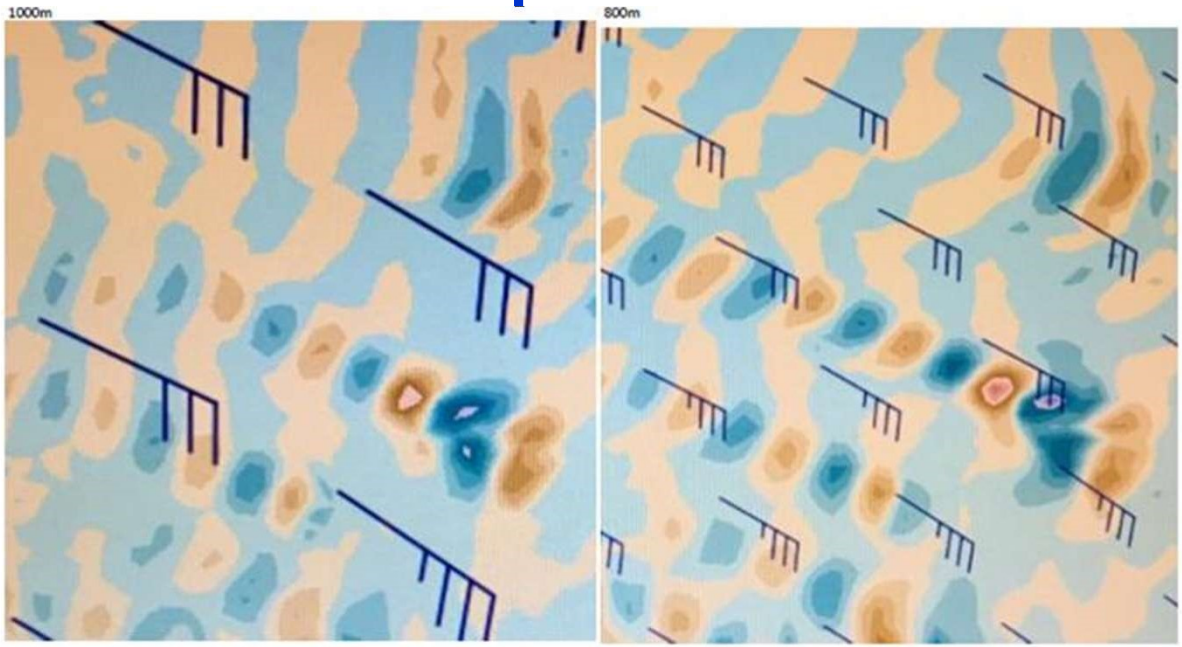


Some experiments: resolution and wave

- Test area Sophienhöhe and the Etzweiler and Garzweiler browncoalfields
- SRTM 90x90m elevation data



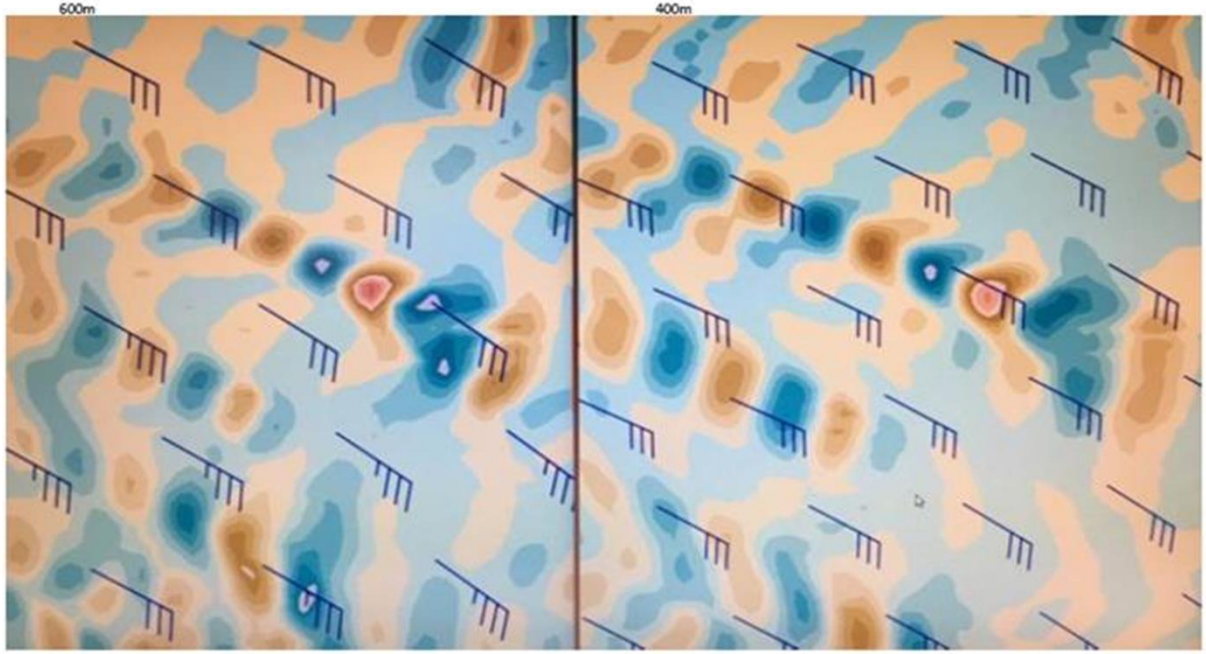
Some experiments: resolution and wave



1000x1000m 800x800m

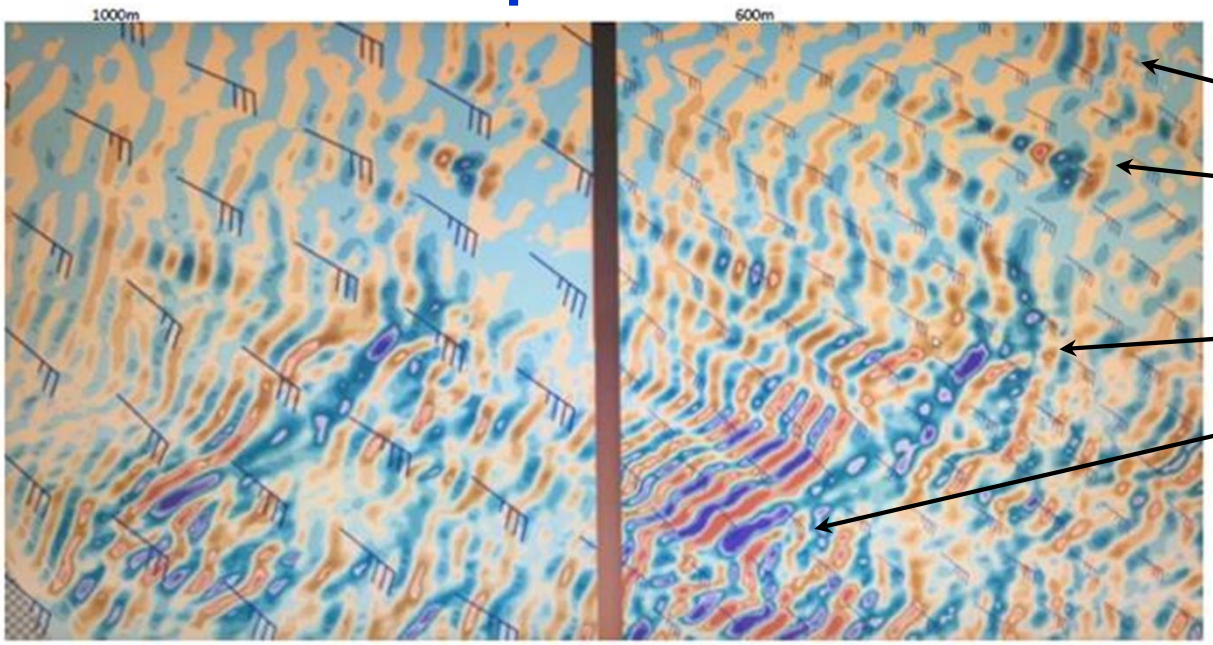
- Higher resolution leads to greater propagation of wave and more lift/sink (detail)

600x600m 400x400m



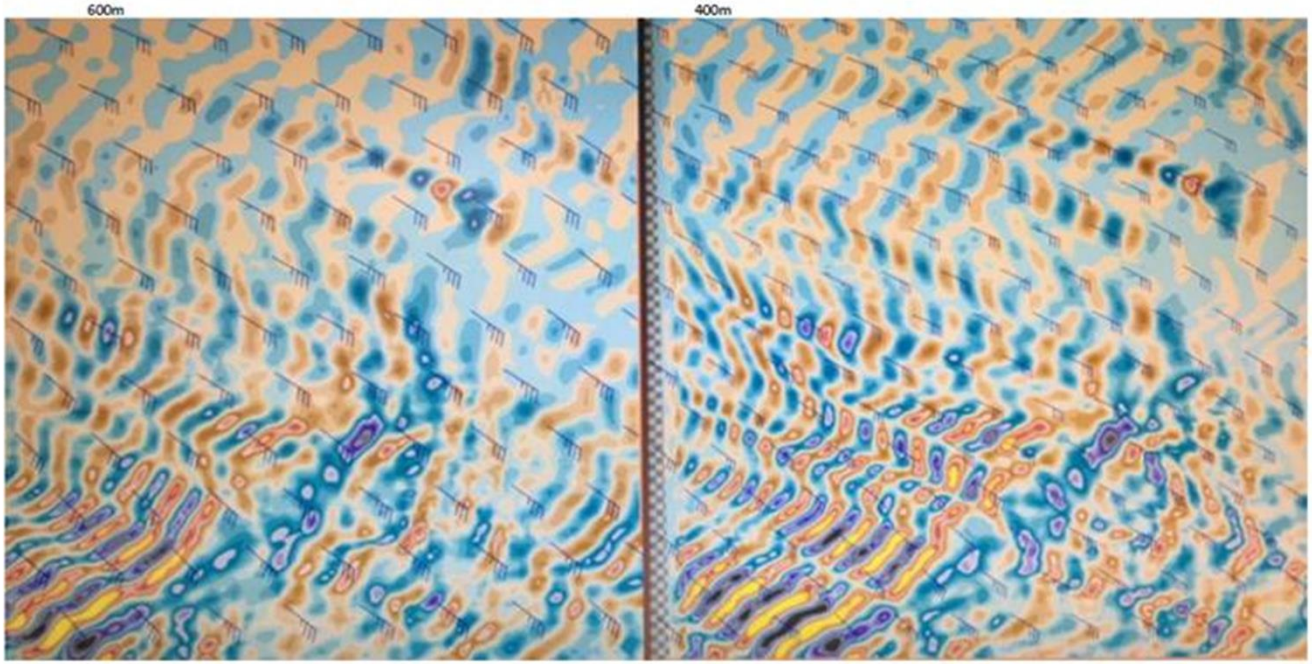
- (model)reality?

Some experiments: resolution and wave



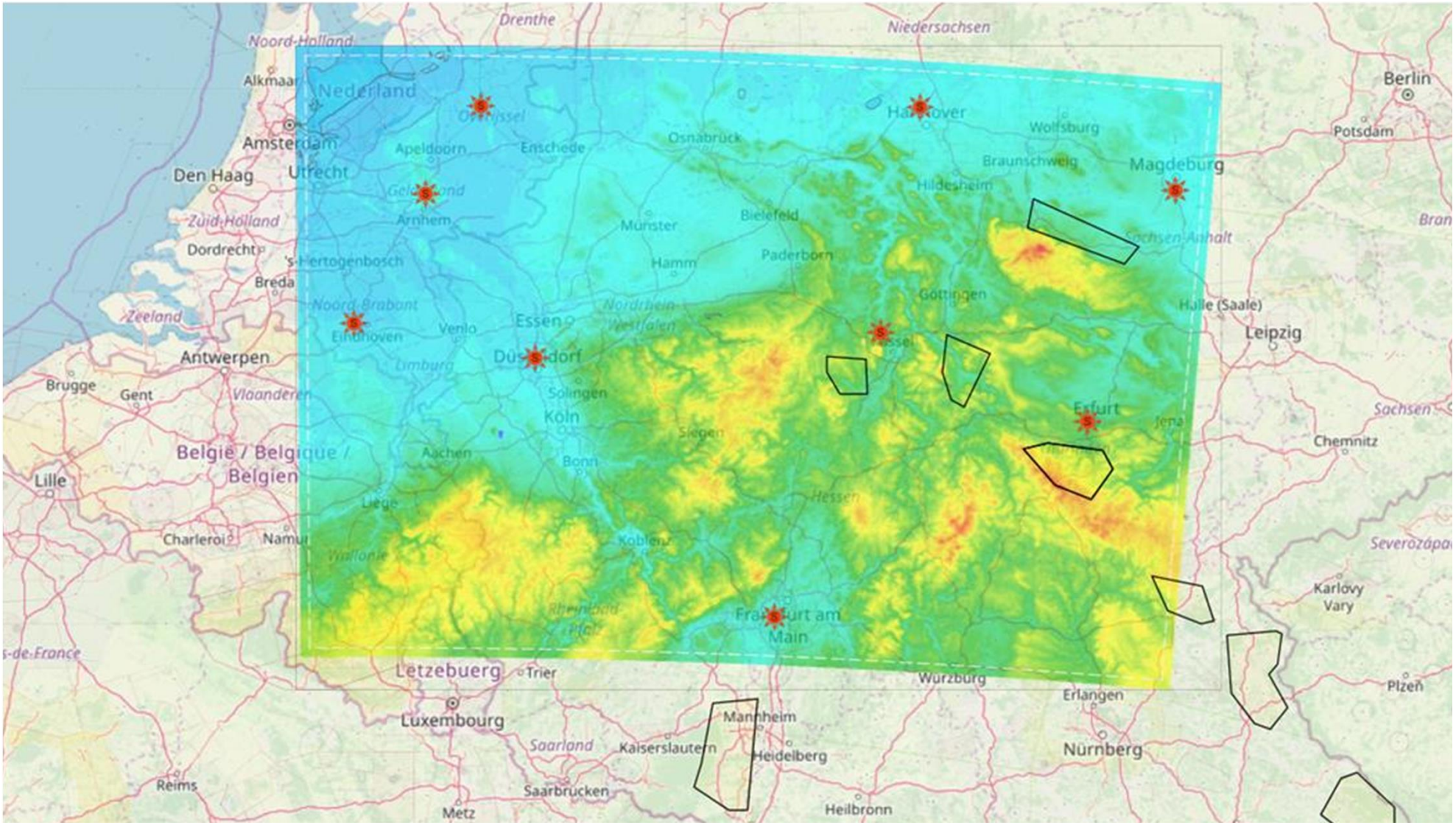
- Garzweiler
- Etzweiler
- Hoge Venen-Eifel
- Ardennes

1000x1000m 600x600m 600x600m 400x400m



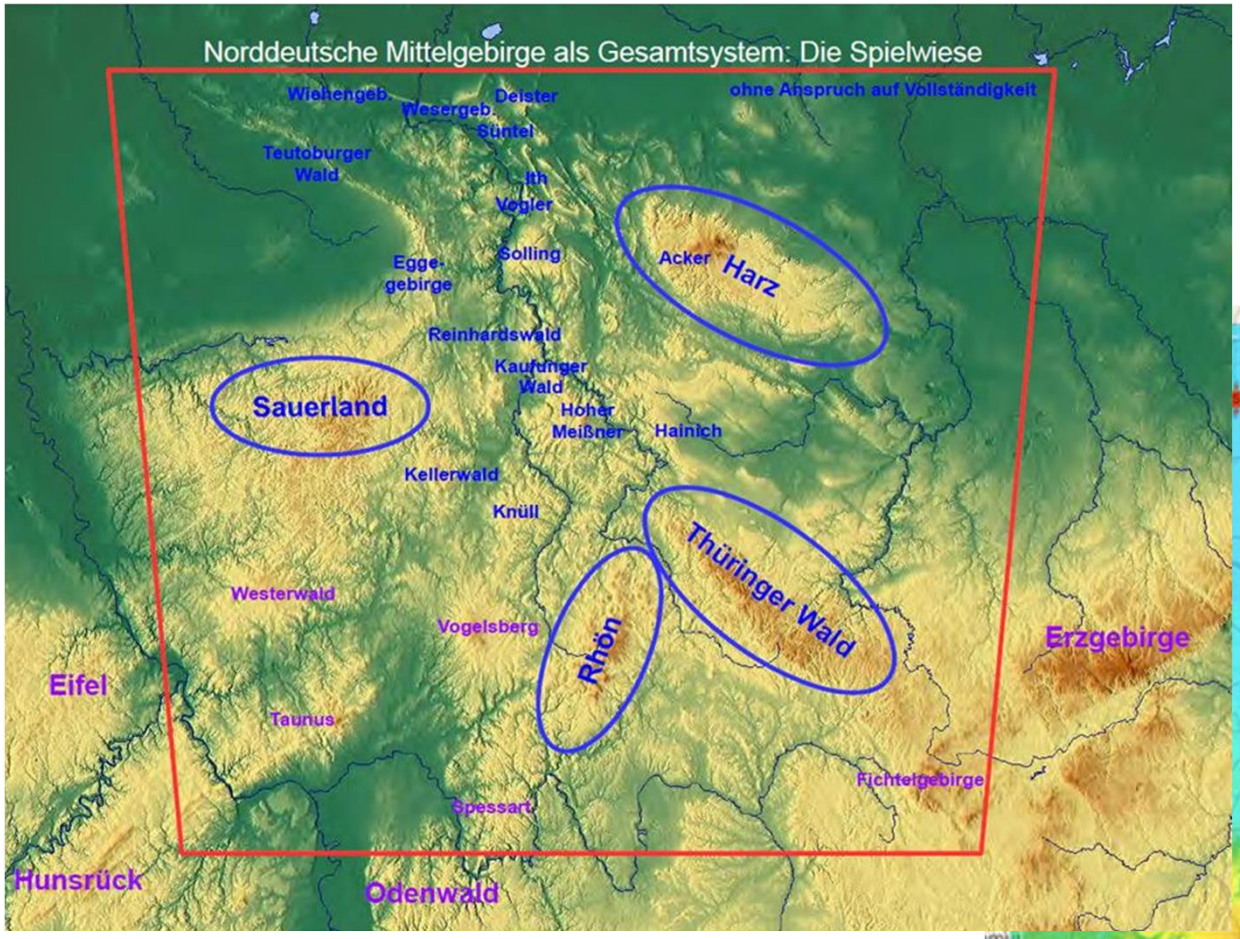
Discuss new winter wave model area

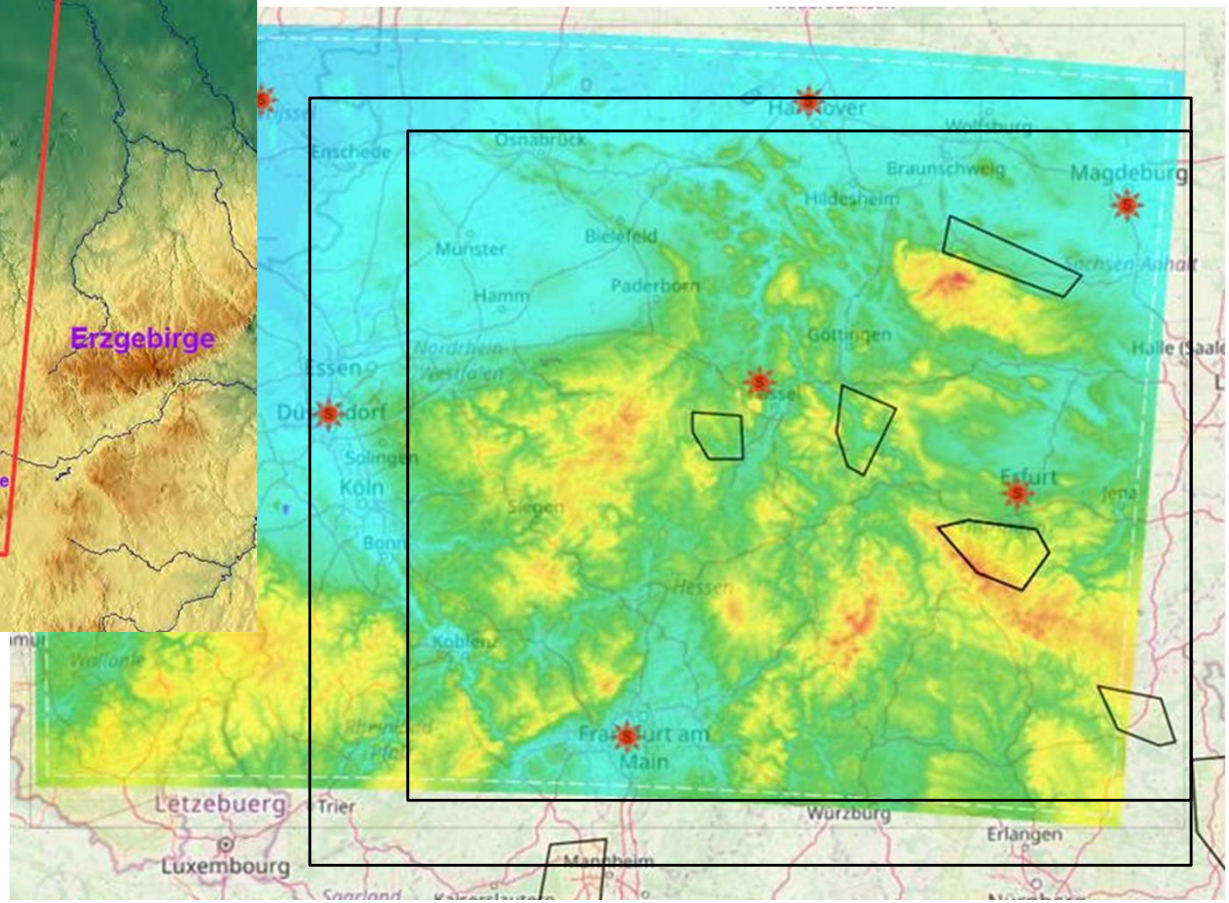
- Balancing between cell resolution, area size and available/calculation time
- Current considerations for the NL1KM 1x1KM model area



Discuss new winter wave model area

- Christof Maul during Schwerewelle Jahrestreffen 2023





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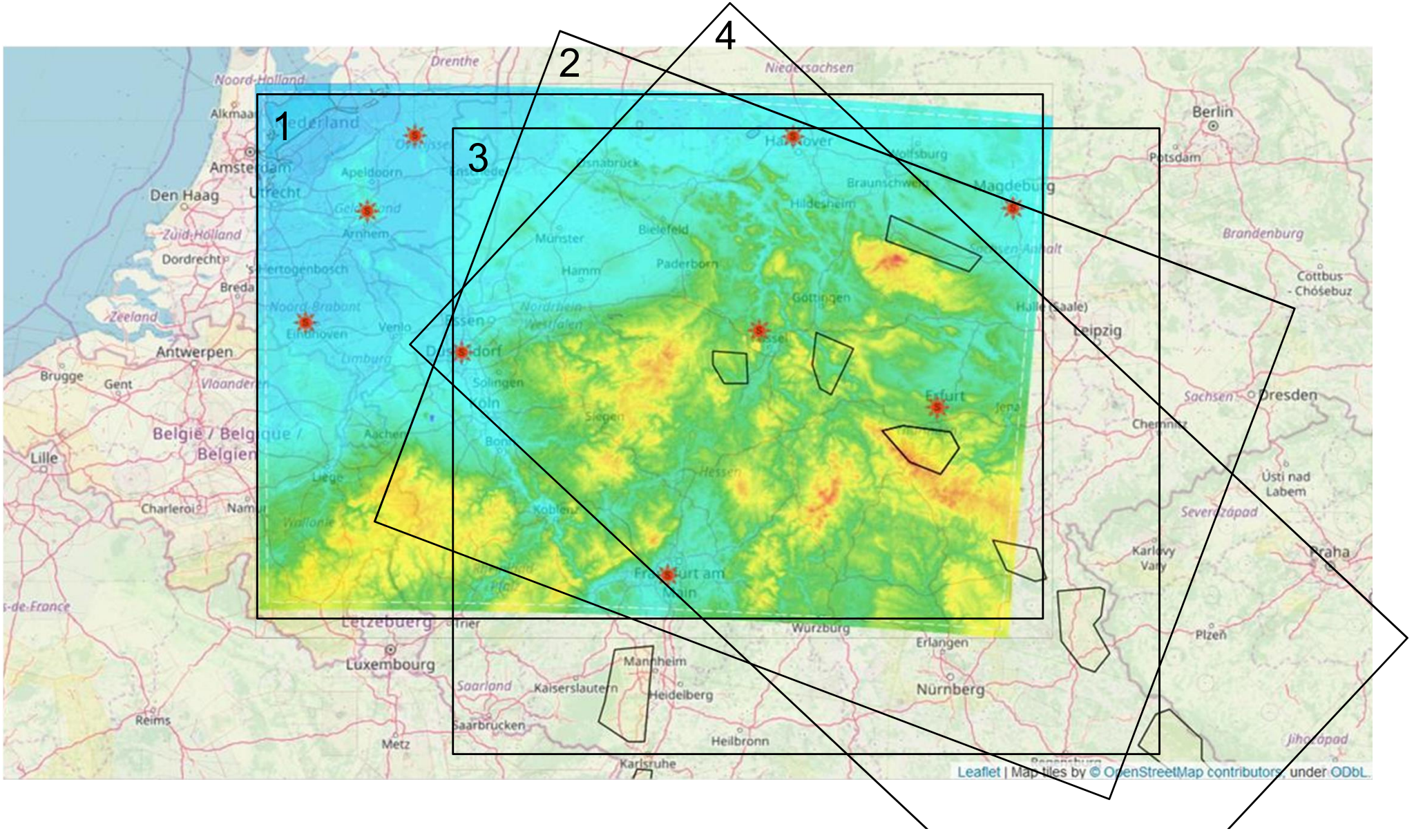

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Questions or requests? Email rasp@blipmaps.nl