PROBABILISTIC APPROACH IN COMPARATIVE VERIFICATION OF HIGH RESOLUTION MODELS

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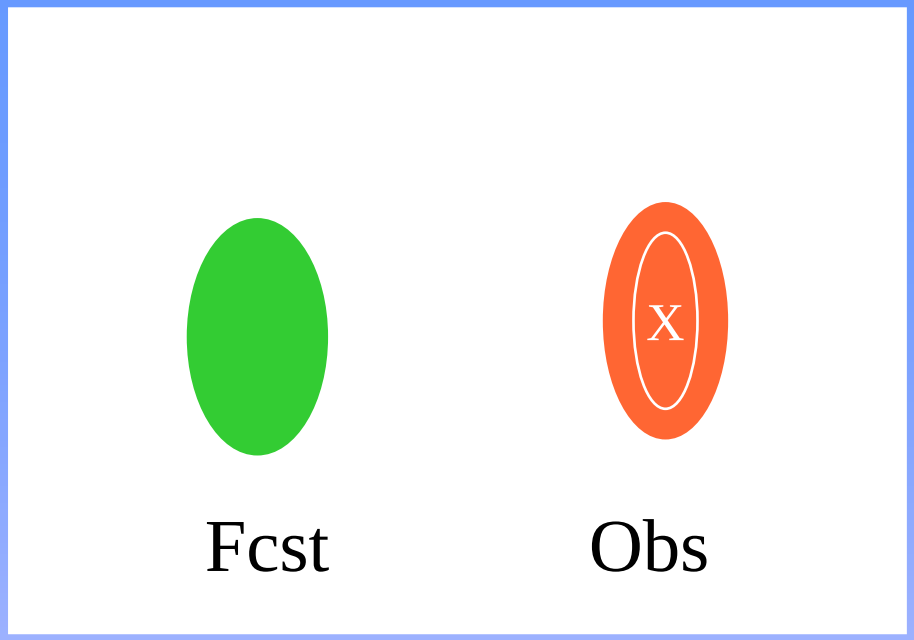
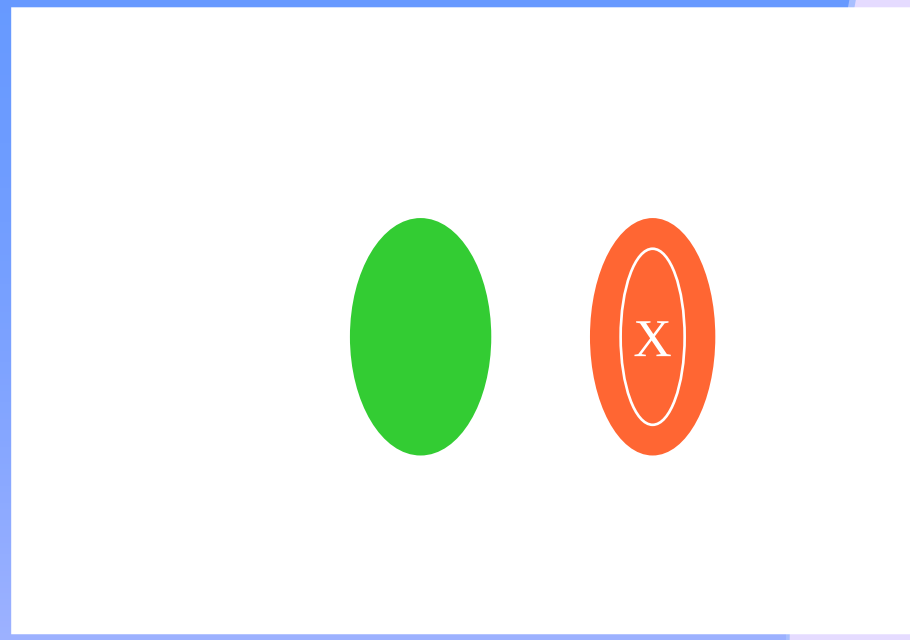
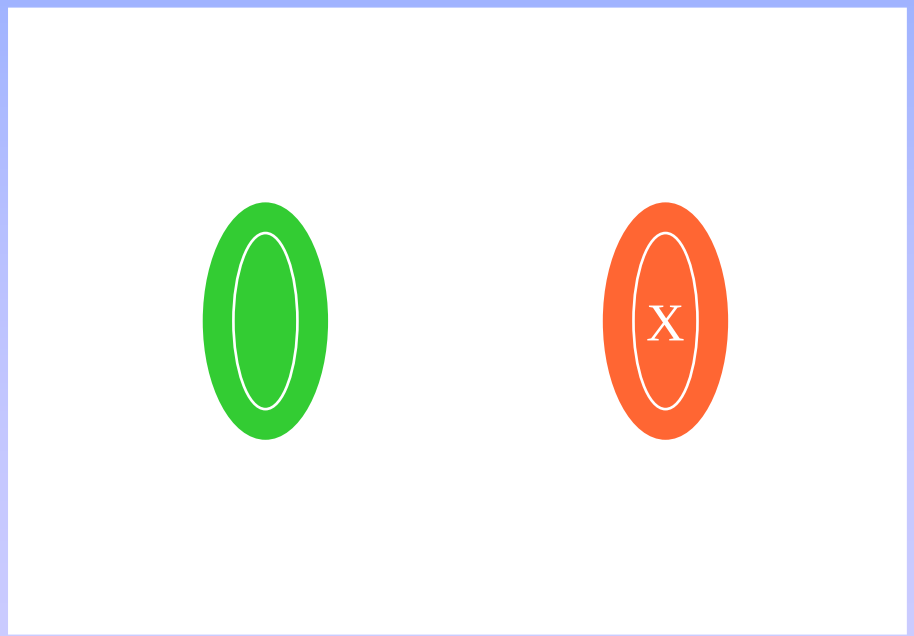
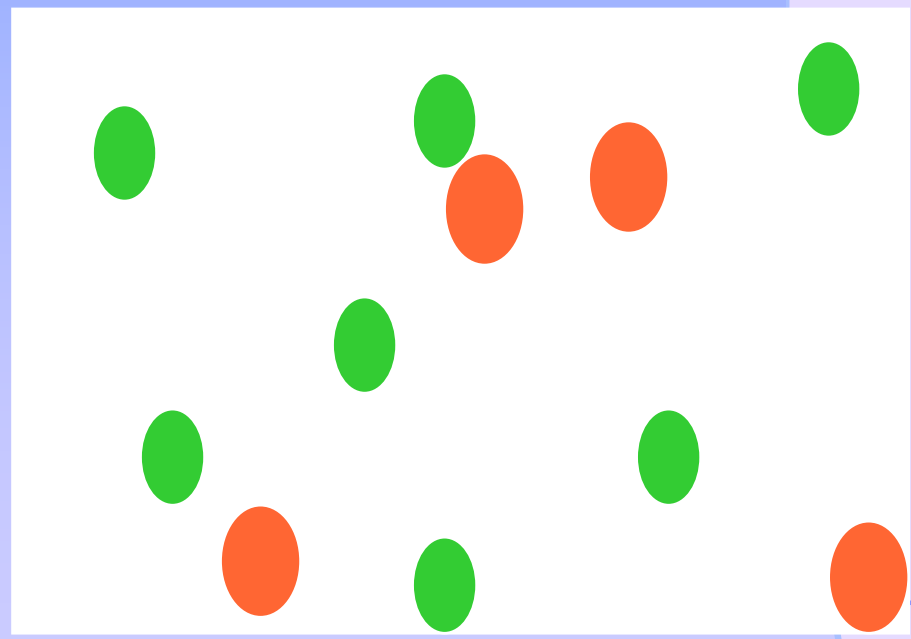

Fcst
Obs







Model1
(LRM)

statistical
post-processing

prob. forecast
equation

potential
predictors

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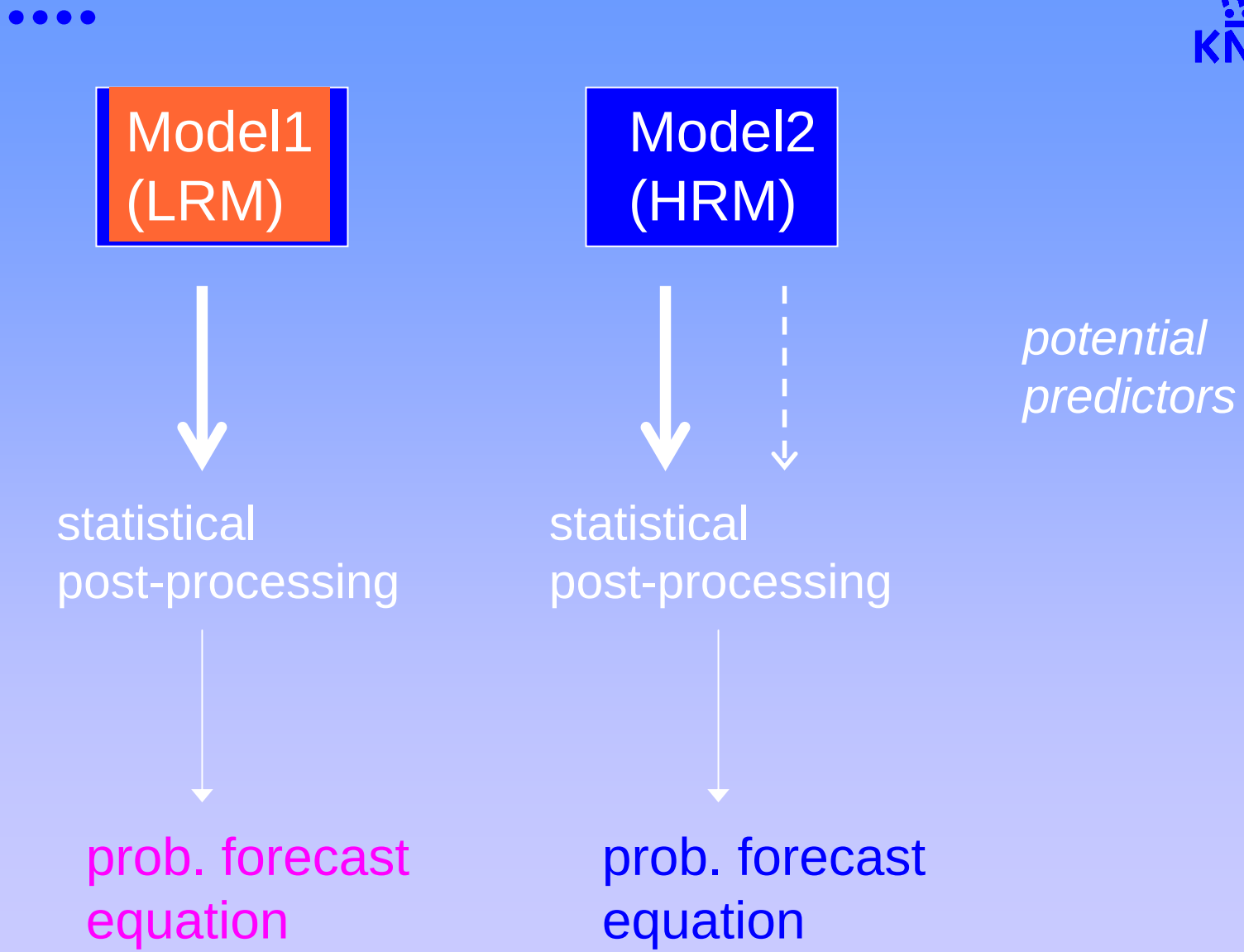
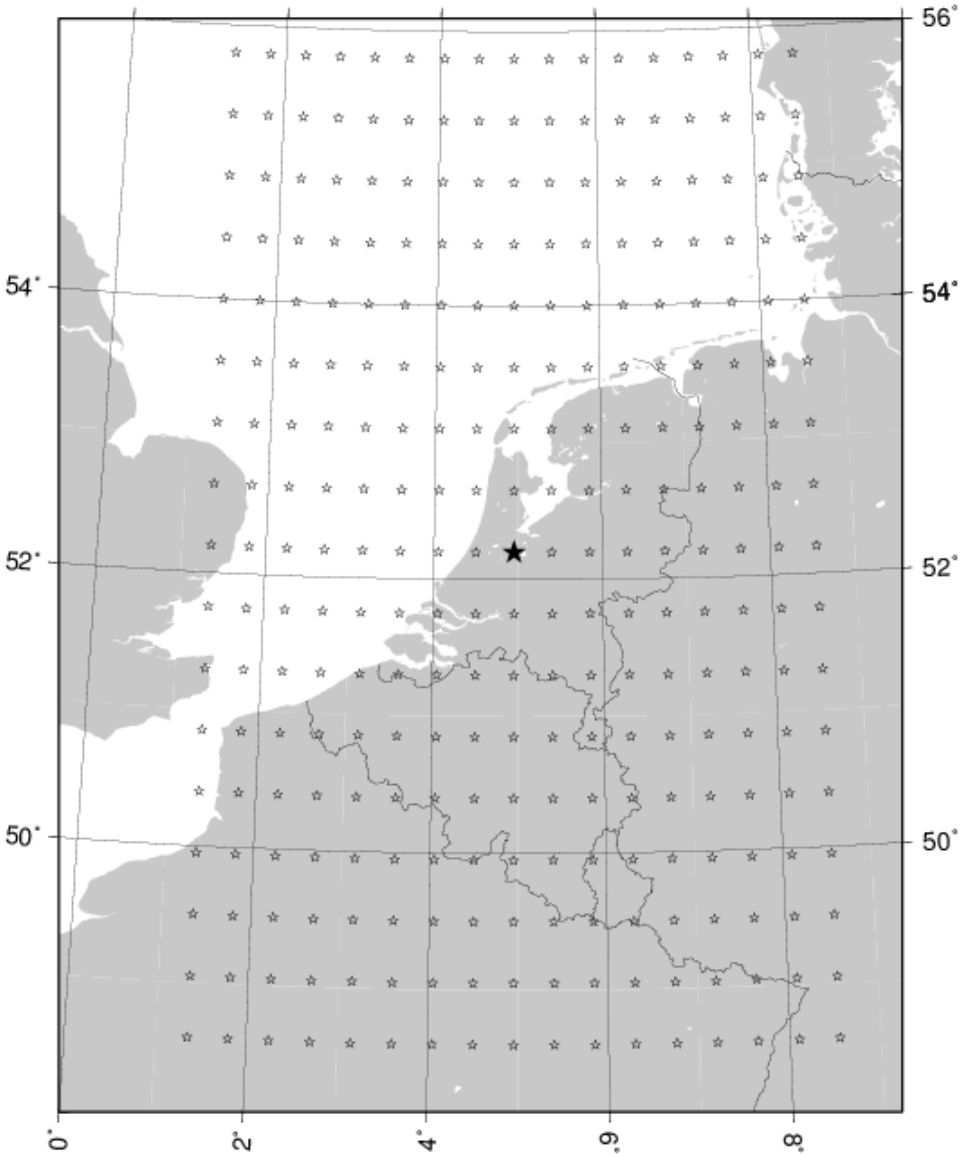


Experimental setup

Operational (HR-model) vs control (LR-model)
* N400 versus N200 (0.225° and 0.450° resp.)
* from 1 Feb 2006 until Dec
* forecasts of 3 hour accumulated precipitation for 18UTC (+6, +30, +54)
* verified against *station* De Bilt

Low (EPS) Resolution



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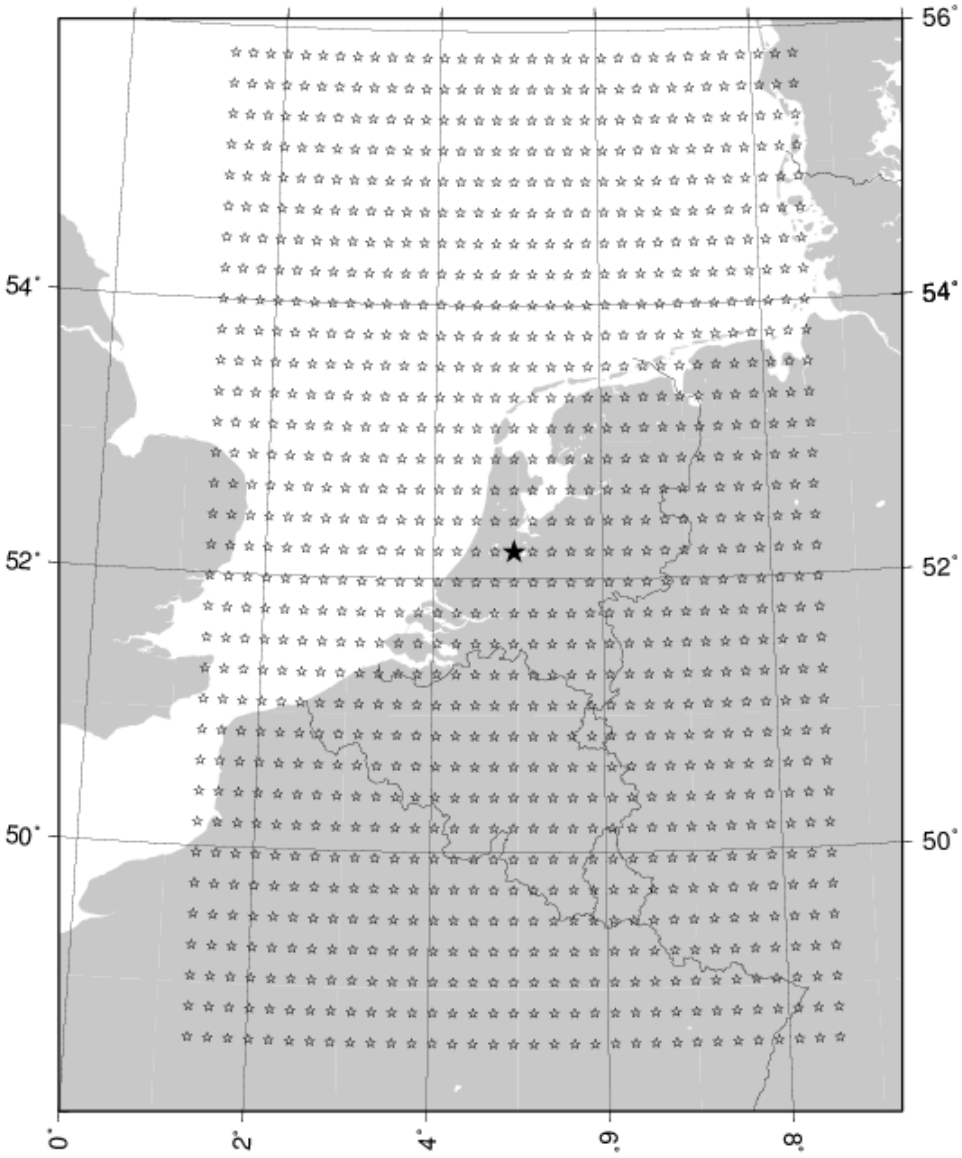
High (OPR) Resolution



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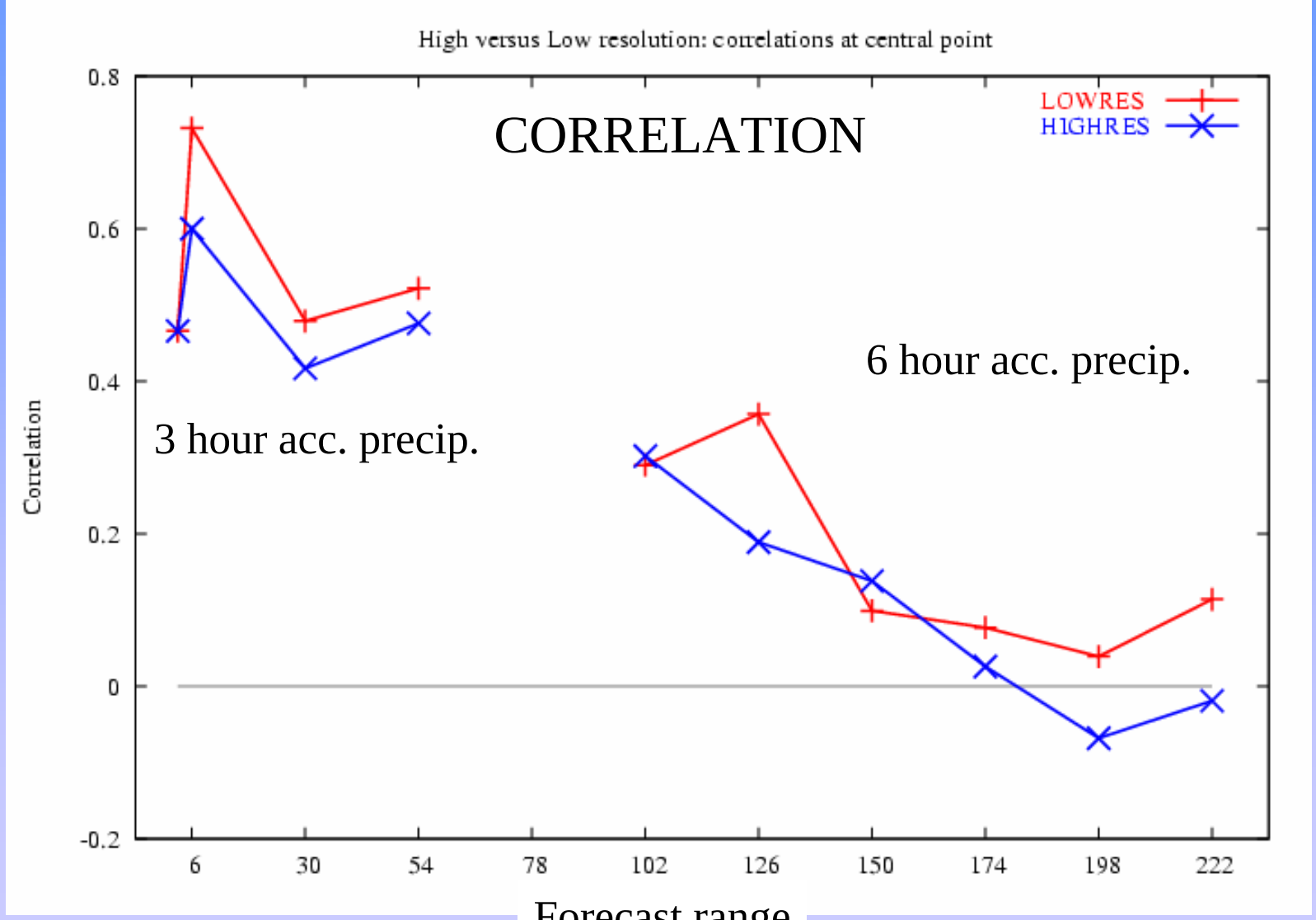


potential predictors

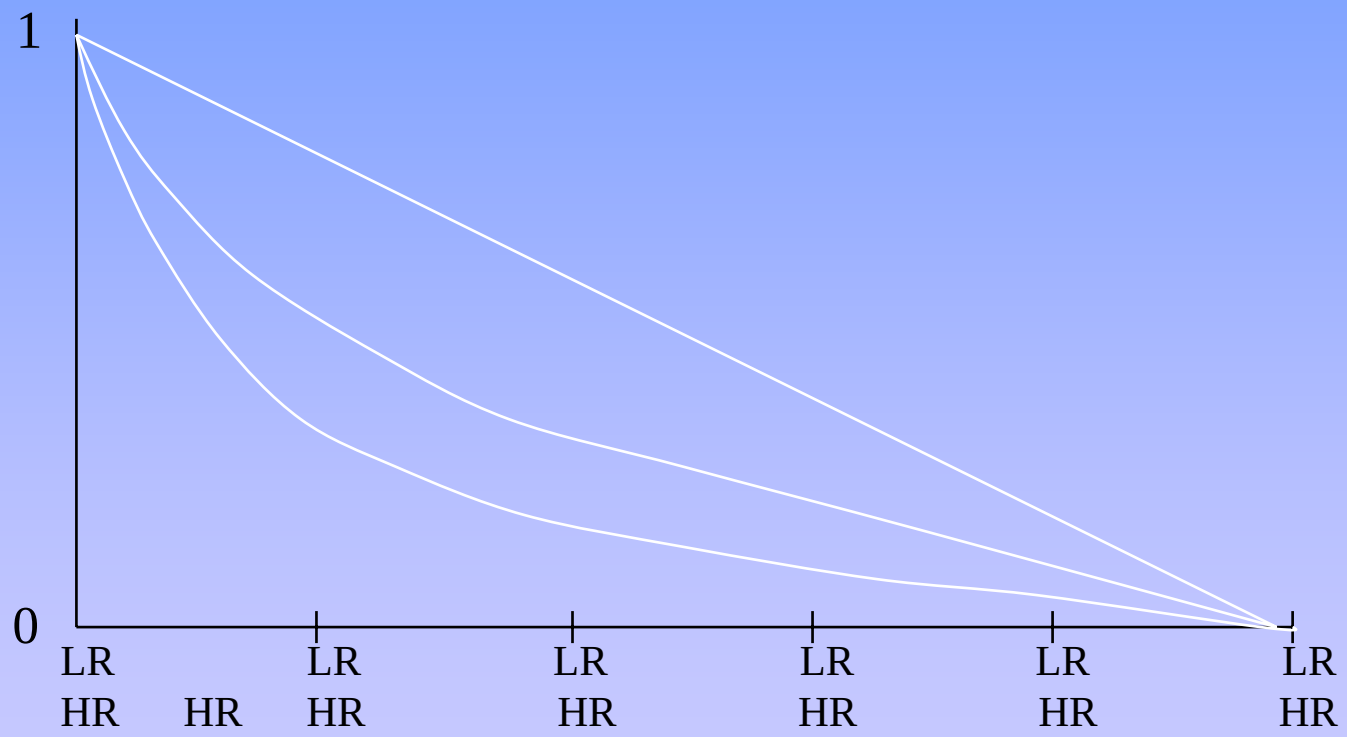
* central grid point value

* extent of rain area, distance to rain area

on circular areas around central grid point:
* mean and maximum precipitation

* maximum precip. weighted with distance

Weighting functions



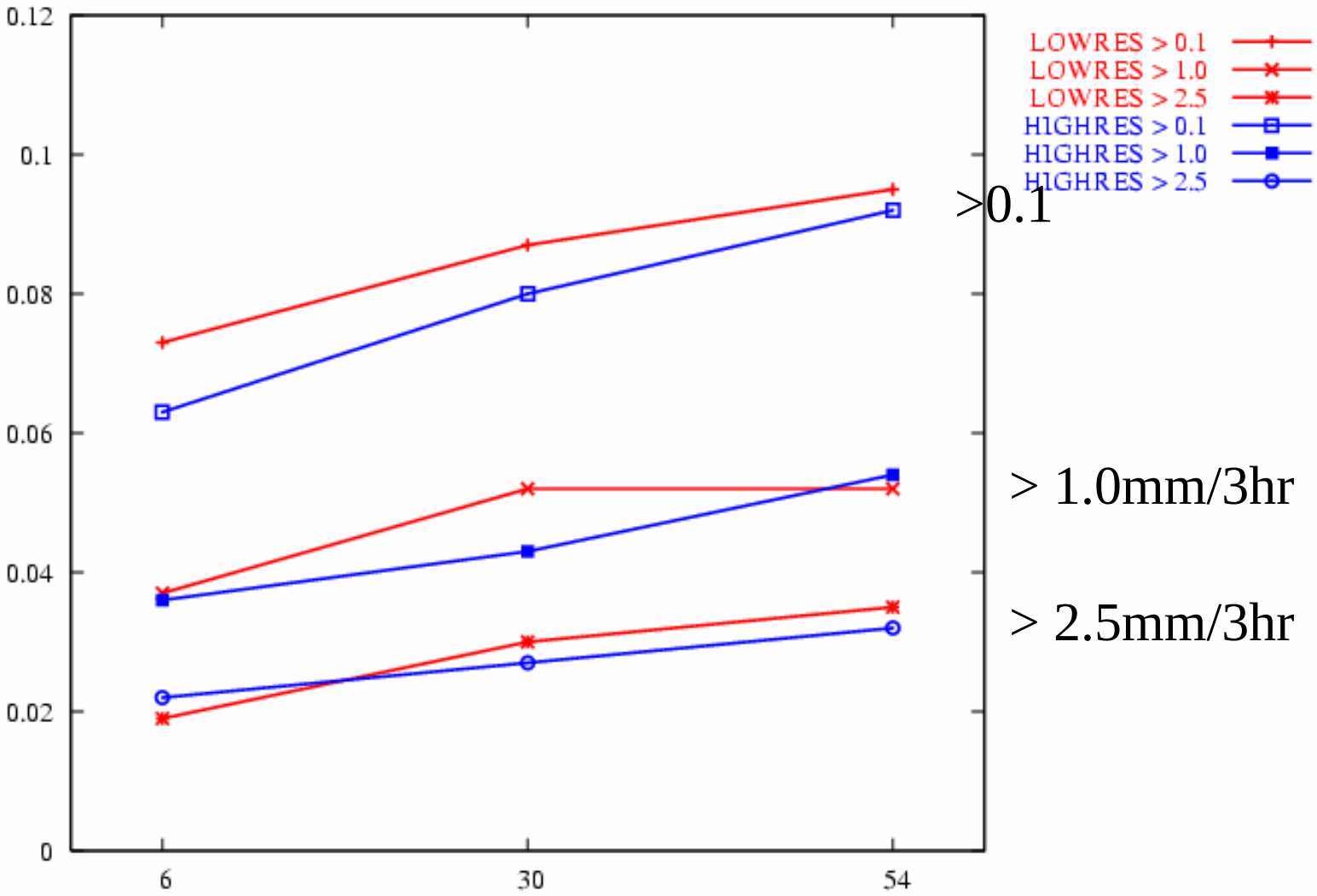
Selected predictors

* central grid point value, only at +6 of control run

* in all cases “circular” predictors

* with increasing radius with forecast period

Prob. forecasts based on HR and LR for station De Bilt



Brier score

Forecast range

>0.1

> 1.0mm/3hr

> 2.5mm/3hr

CONCLUSIONS

* not only the DMO is important
  but also what you can do with it

* statistically processed model output should be
  included in (comparative) verification

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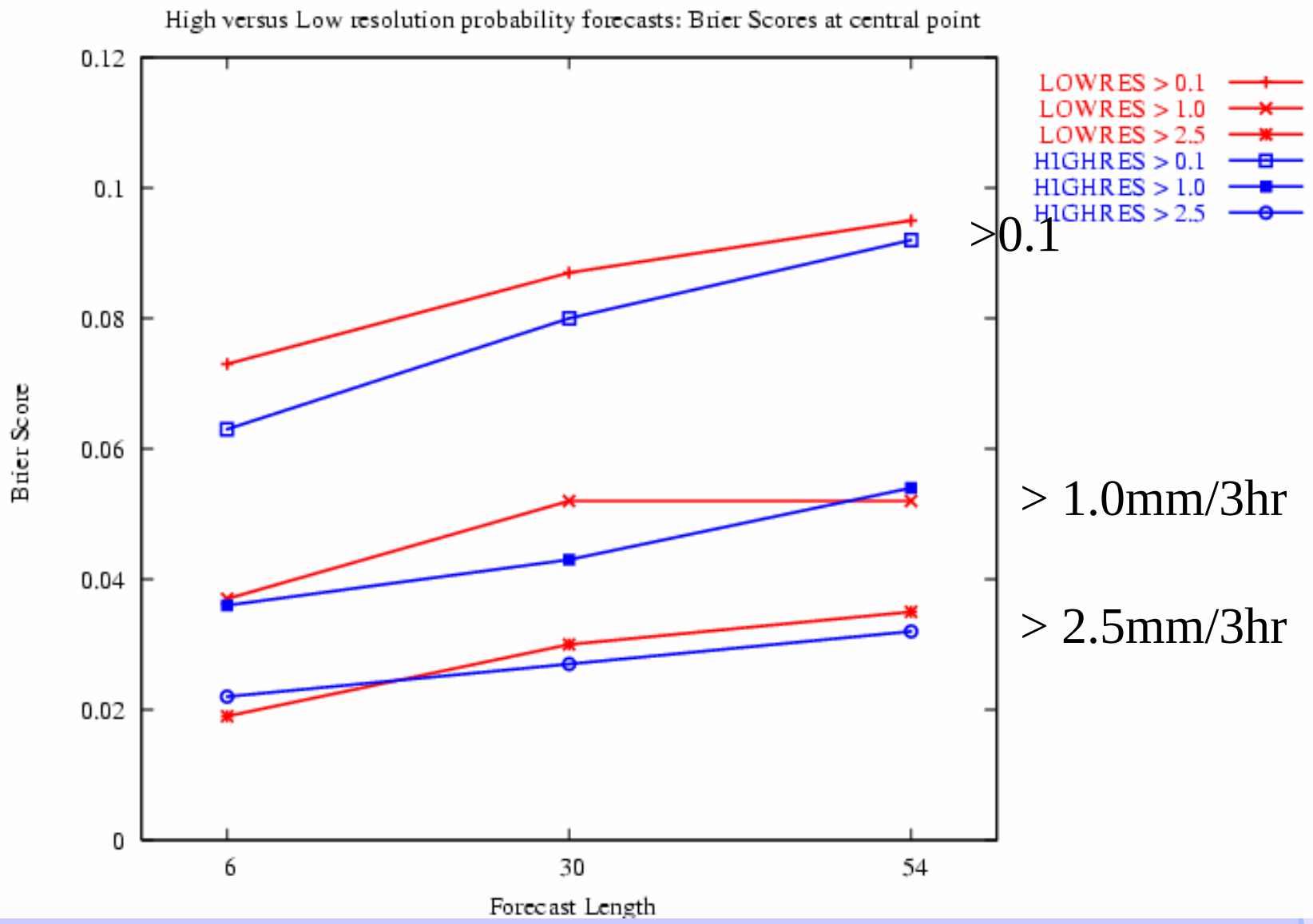

DMO-prob's : BS ~ 0.04 – 0.25