PROBABILISTIC APPROACH IN COMPARATIVE VERIFICATION OF HIGH RESOLUTION MODELS

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2. DESCRIPTION PROBABILISTIC METHOD
3. PRELIMINARY EXPERIMENT
4. CONCLUDING REMARKS
Model1 (LRM)

statistical post-processing

prob. forecast equation
Model1 (LRM)

\[ \Downarrow \]

statistical post-processing

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prob. forecast equation

Model2 (HRM)

\[ \Downarrow \]

statistical post-processing

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prob. forecast equation

potential predictors
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
CORRELATION

High versus Low resolution: correlations at central point

- 3 hour acc. precip.
- 6 hour acc. precip.

Forecast range
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

LOWRES > 0.1
LOWRES > 1.0
LOWRES > 2.5
HIGHRES > 0.1
HIGHRES > 1.0
HIGHRES > 2.5

> 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
DMO-prob’s : BS ~ 0.04 – 0.25

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