Agenda

- Pres:

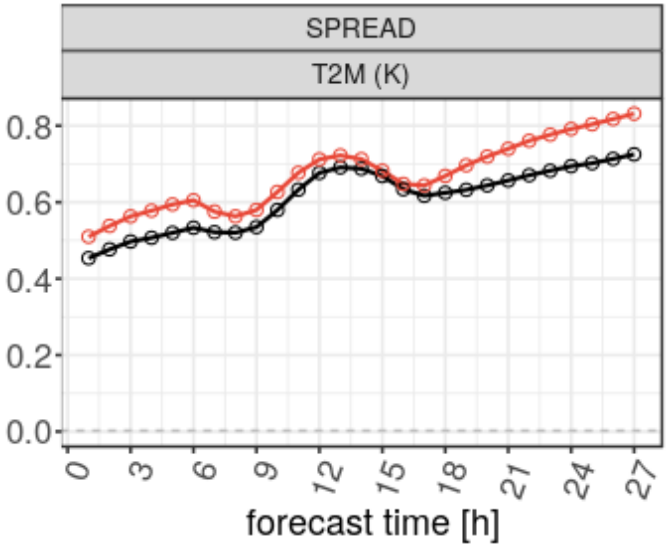
Nigel Roberts: “How to produce probabilistic forecasts for extreme weather focusing on types of neighbourhood processing”

- Discussion: probabilistic forecasts for extreme weather, ensemble products, spatial treatment and neighbourhood …
- Discussion: model error representation, ensemble spread, spread/error relation …

Some discussion items

- Spread/skill relation
  - model systematic error
- Initial conditions for the ensemble: DA & EPS
- Verification adapted to the model skill

How to increase the ensemble spread?



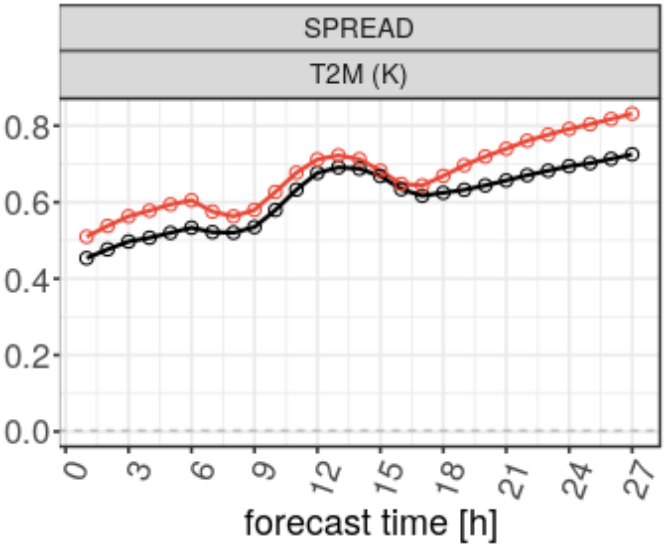
control

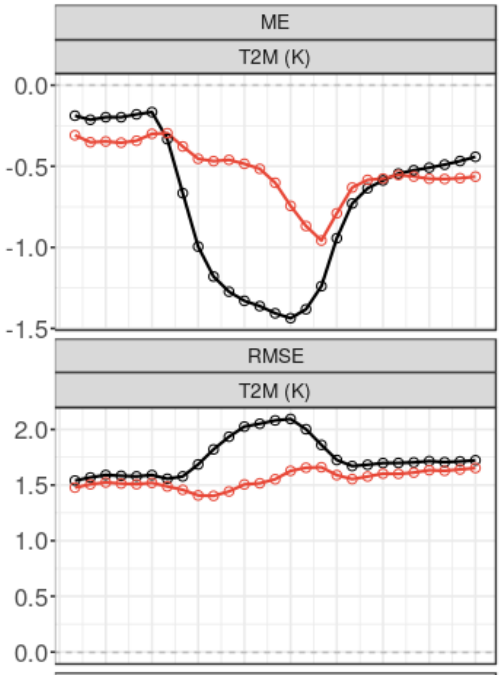
experiment

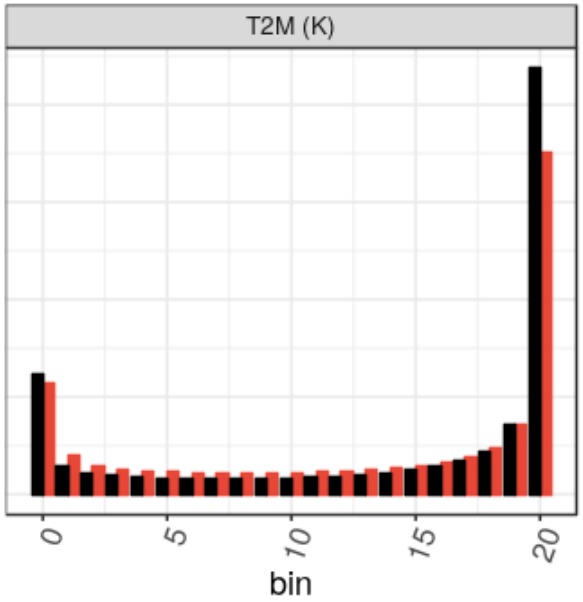
- SPPT?
- Parameter perturbation?
- Stochastic physics?
- Multi-physics?

How to increase the ensemble spread?

- Effect of reduction of the systematic model error on ensemble spread







control

experiment

J.-P. Schulz: Improved land surface processes

Initial conditions

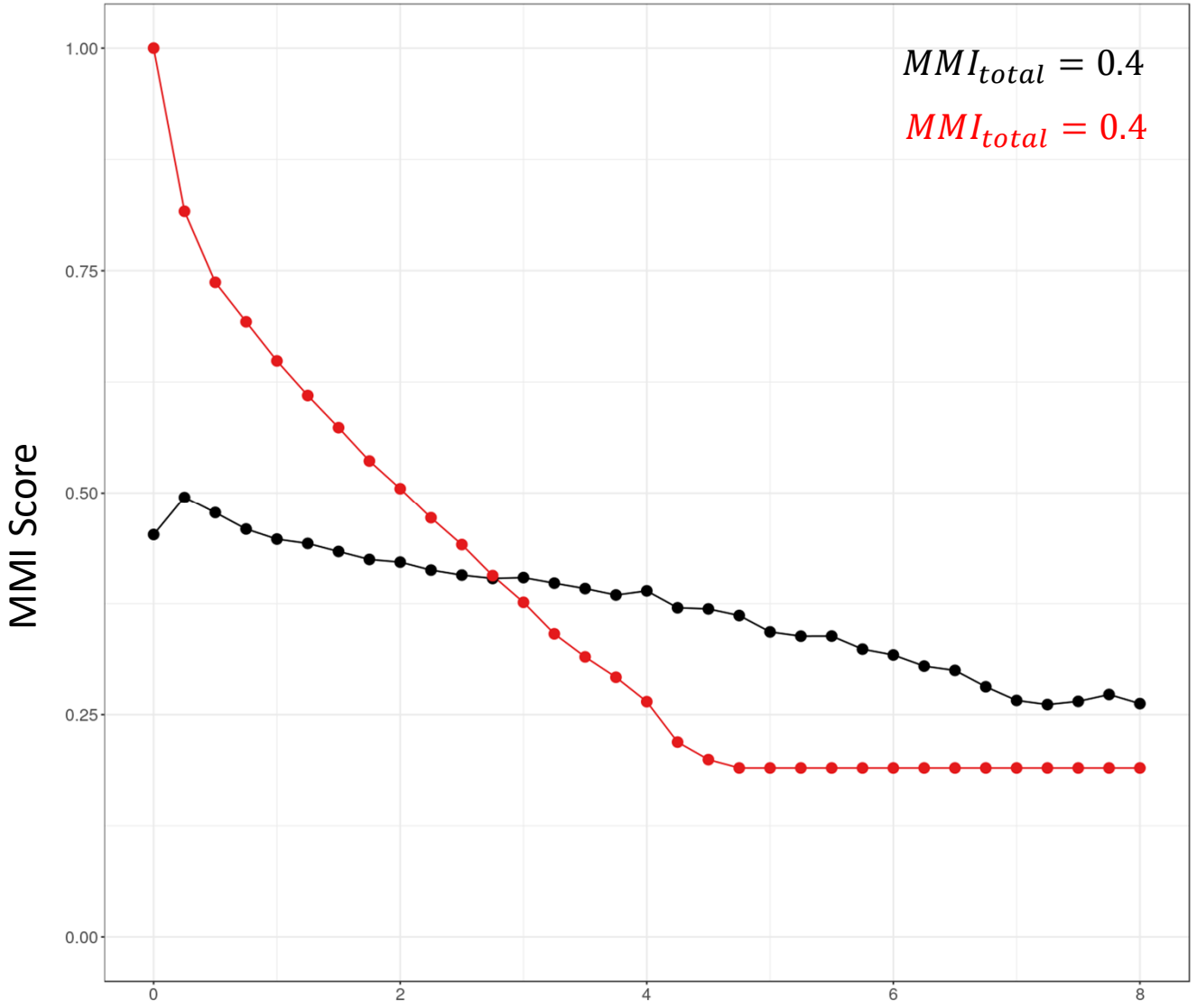
- Initial conditions for the COSMO ensembles provided by KENDA LETKF analyses

- Is this the “optimal” choice for ensemble forecasting?
- Data assimilation requirements are not the same as ensemble forecast requirements

or

- The ensemble which is suitable for data assimilation may not the same which is suitable for weather forecast (e.g. spread) -> two problems with **almost** the same solution

Verification of simulated reflectivities



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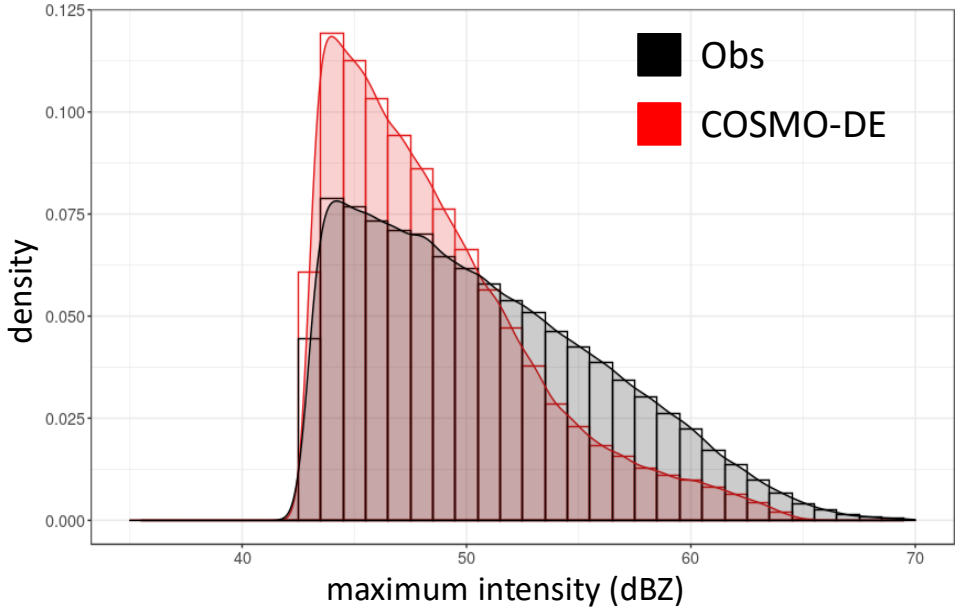
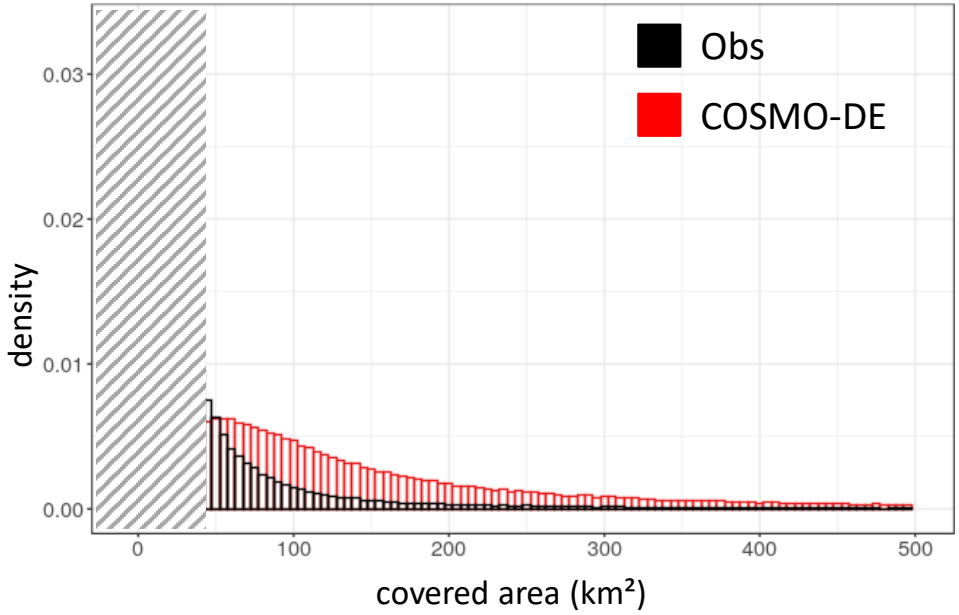
Verification of simulated reflectivities

- Is the comparison between observation and model forecast really fair?

- too many small objects in observation
- too many large objects in forecast

- experiment: What happens if we:
  - exclude features with area < 50km² (effective model resolution)
  - set 30 dBZ basic threshold to observed objects (instead of 35 dBZ) → results in larger observed objects





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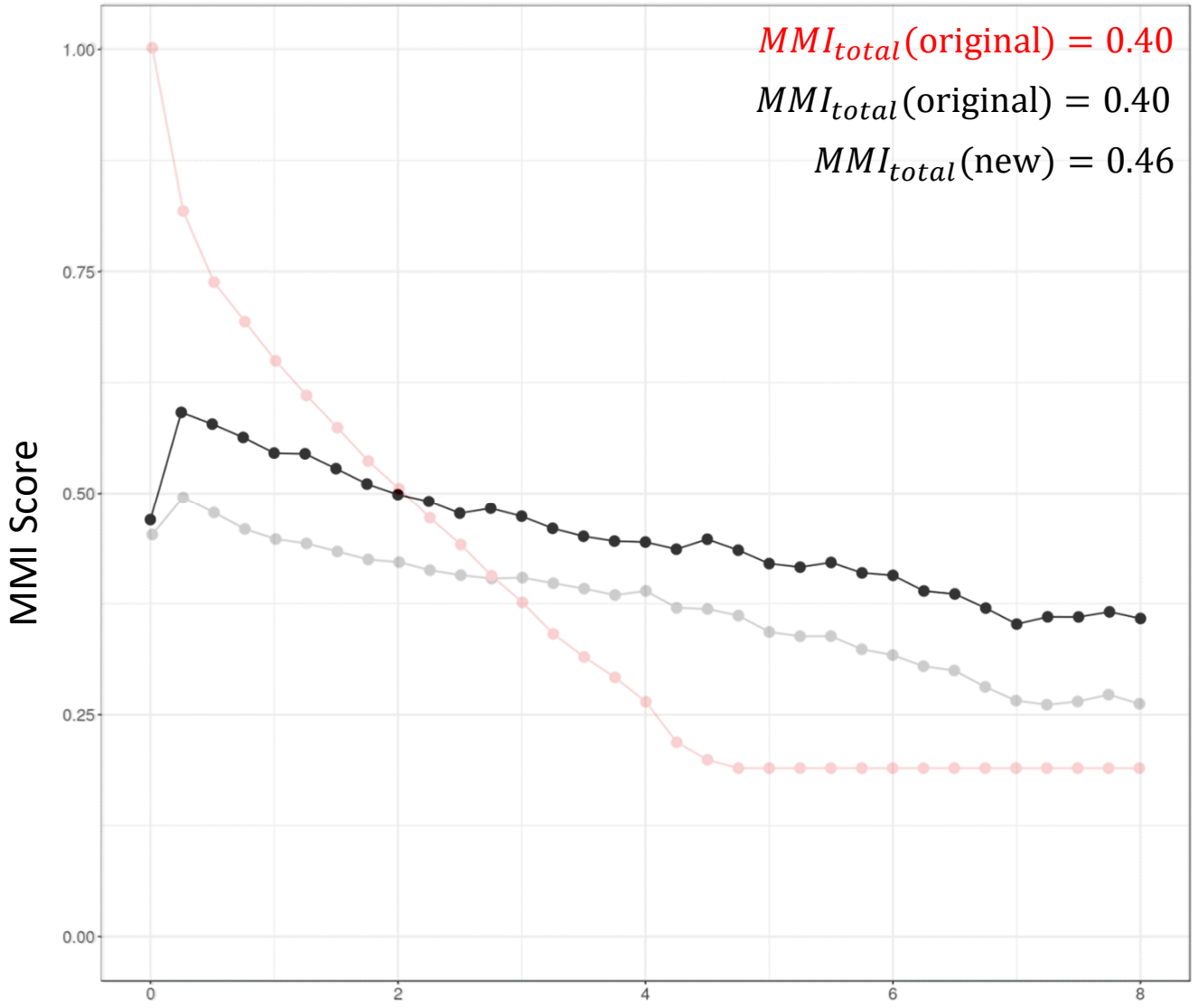
Adapt the verification to predictable scale and biases



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