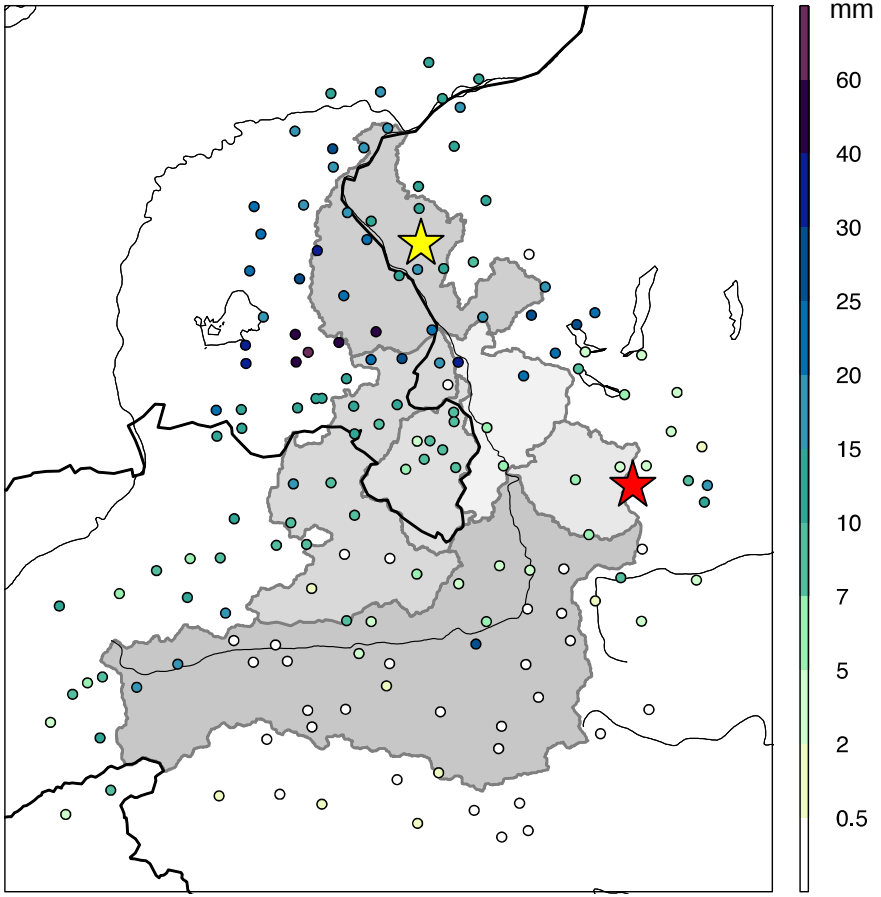
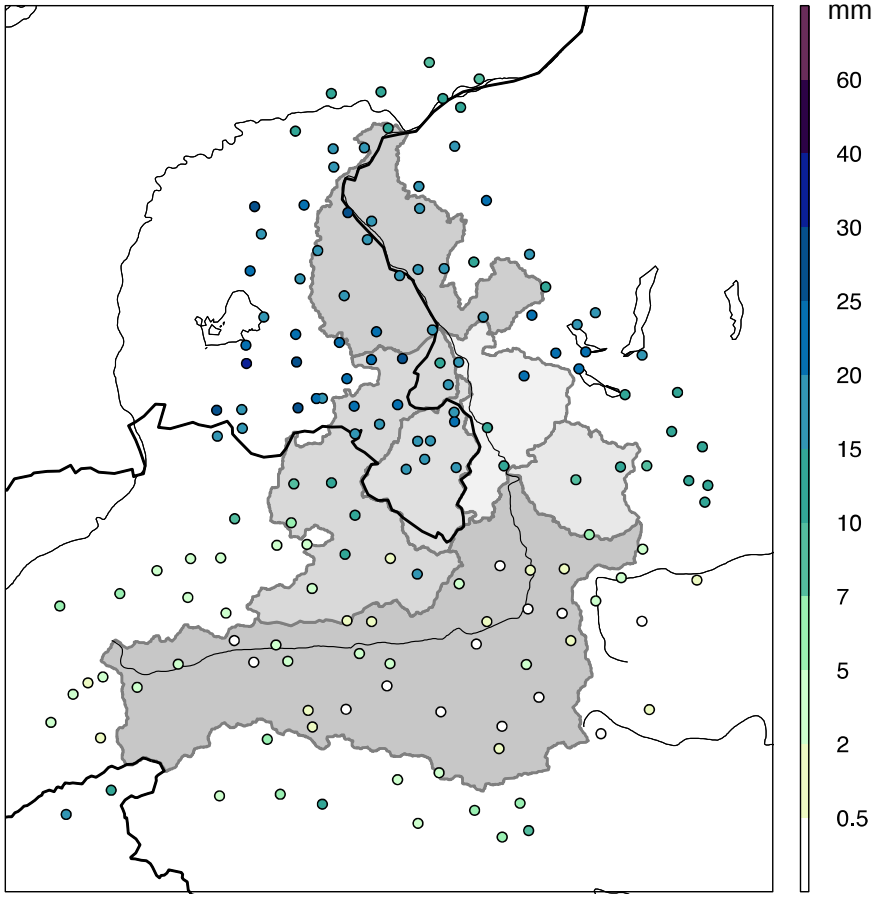
Illustration – Data

1990.06.30, convective



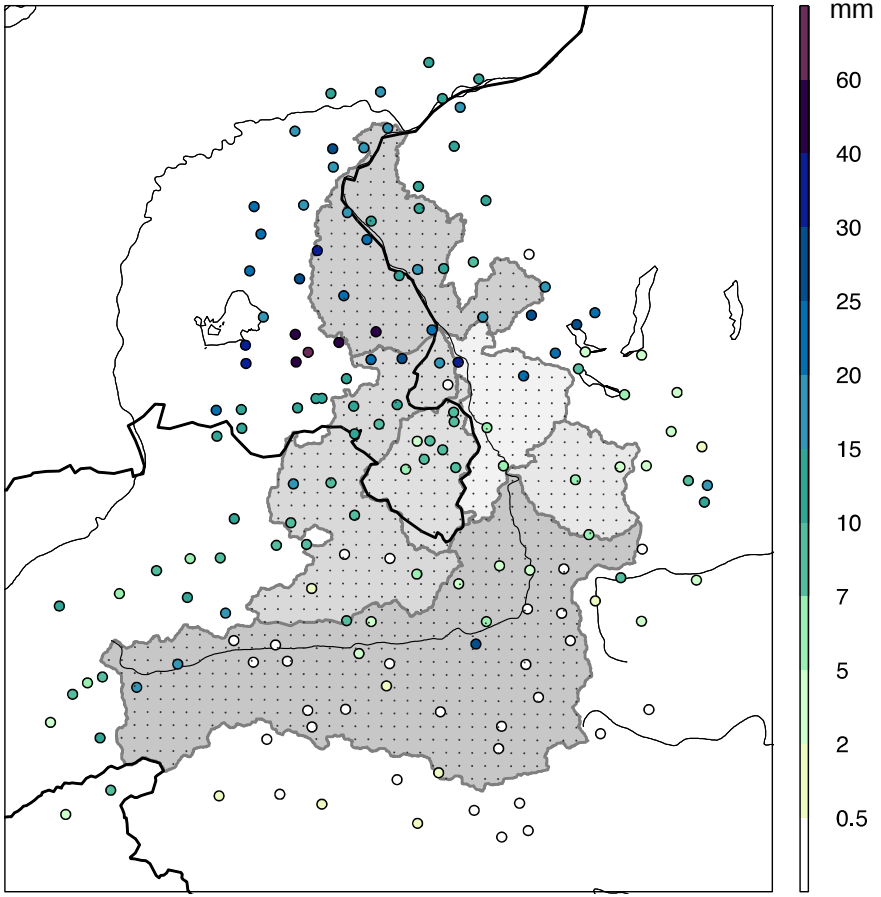
1990.10.29, stratiform



Salzach (6738 km²), Lower Salzach (1086 km²), Lammer (395 km²)

Illustration – Simulation

1990.06.30, convective



1990.10.29, stratiform

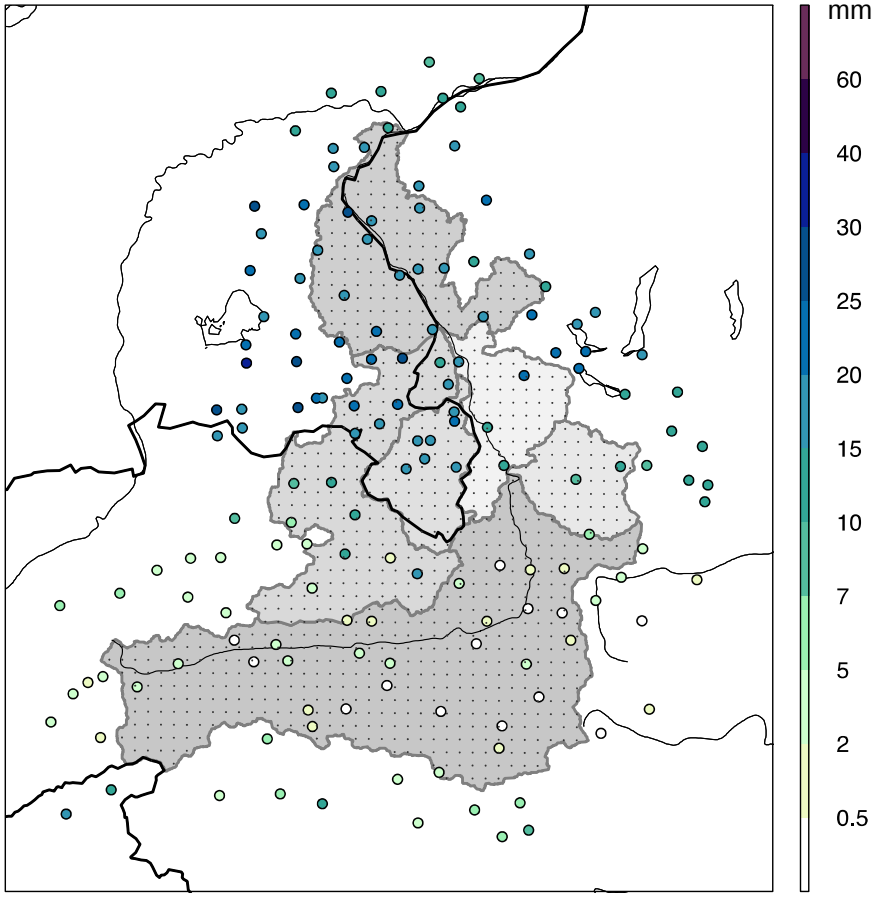


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Illustration – Simulation

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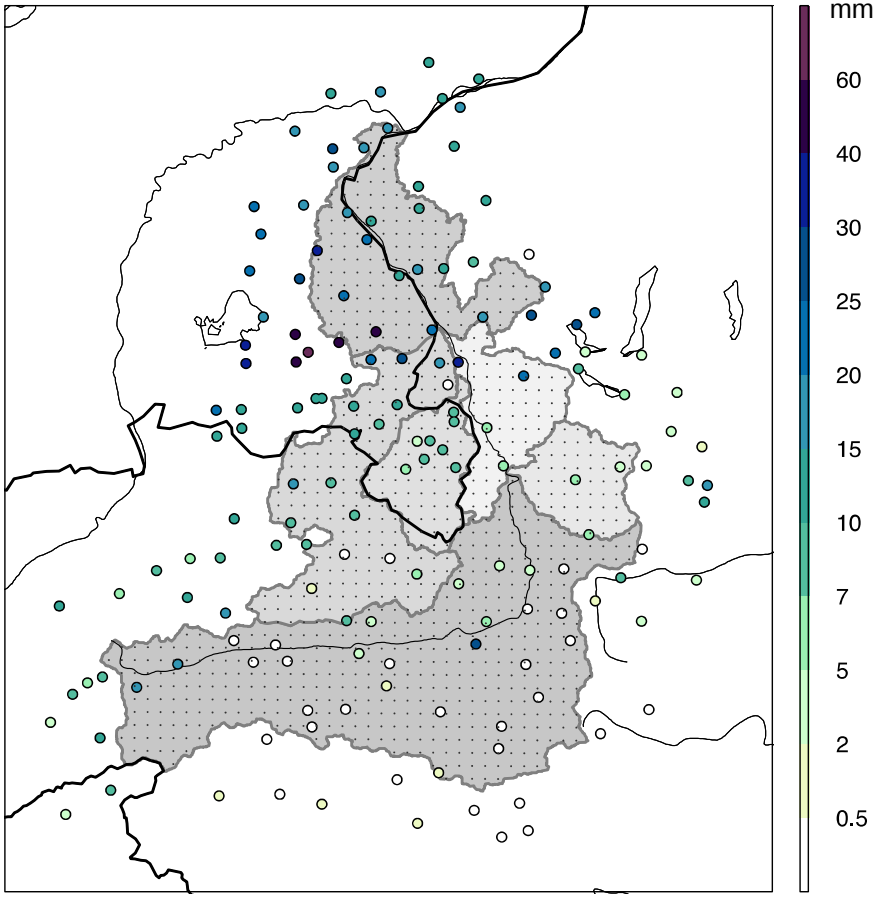

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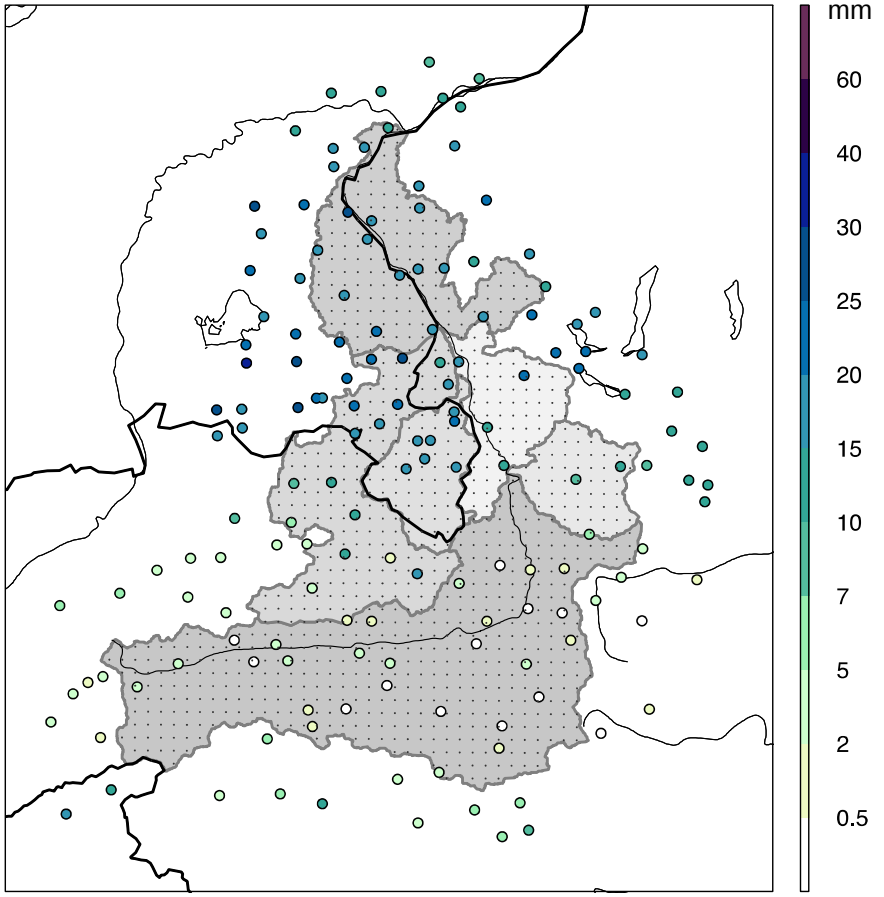

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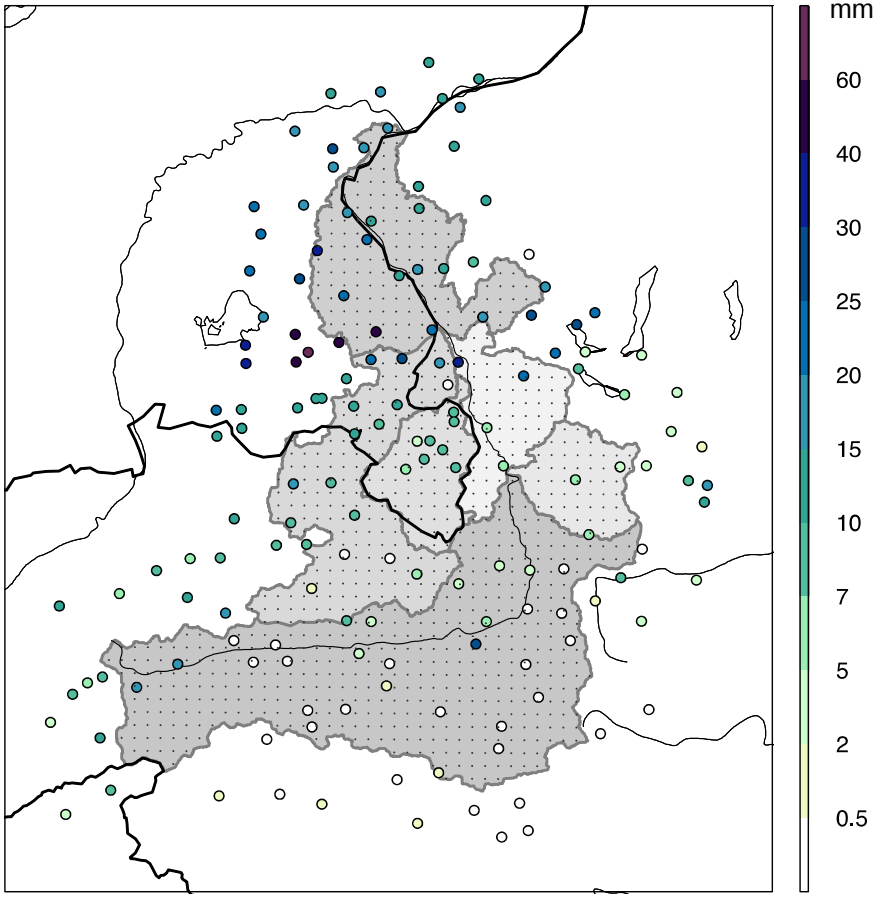

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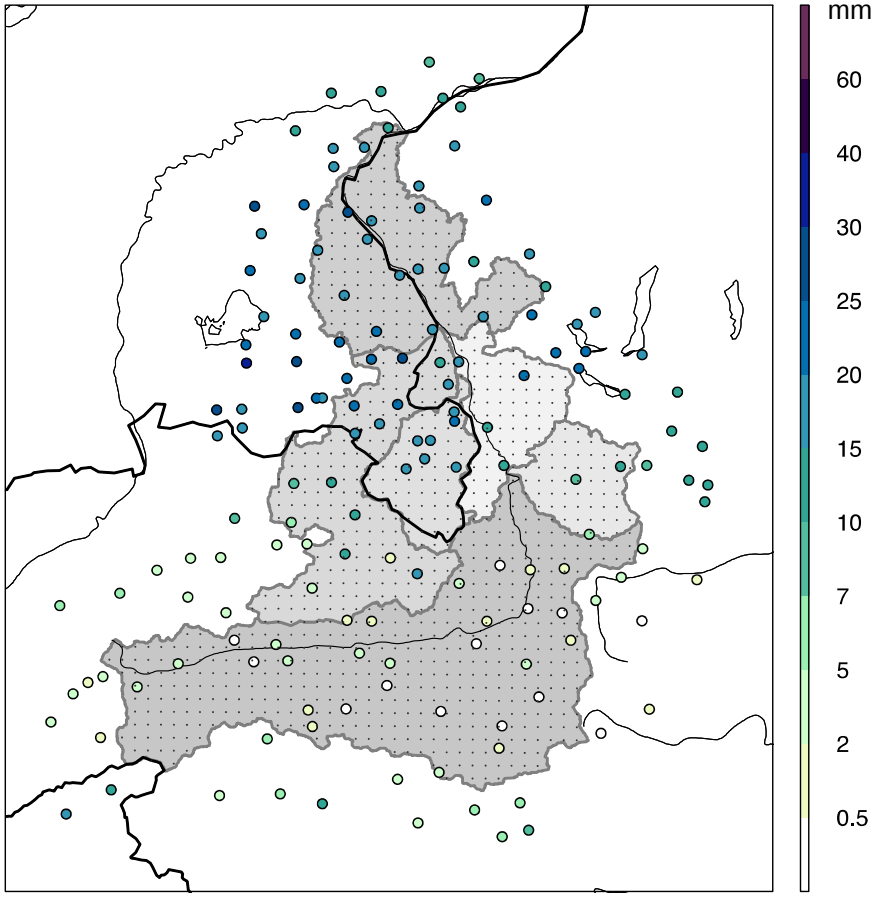

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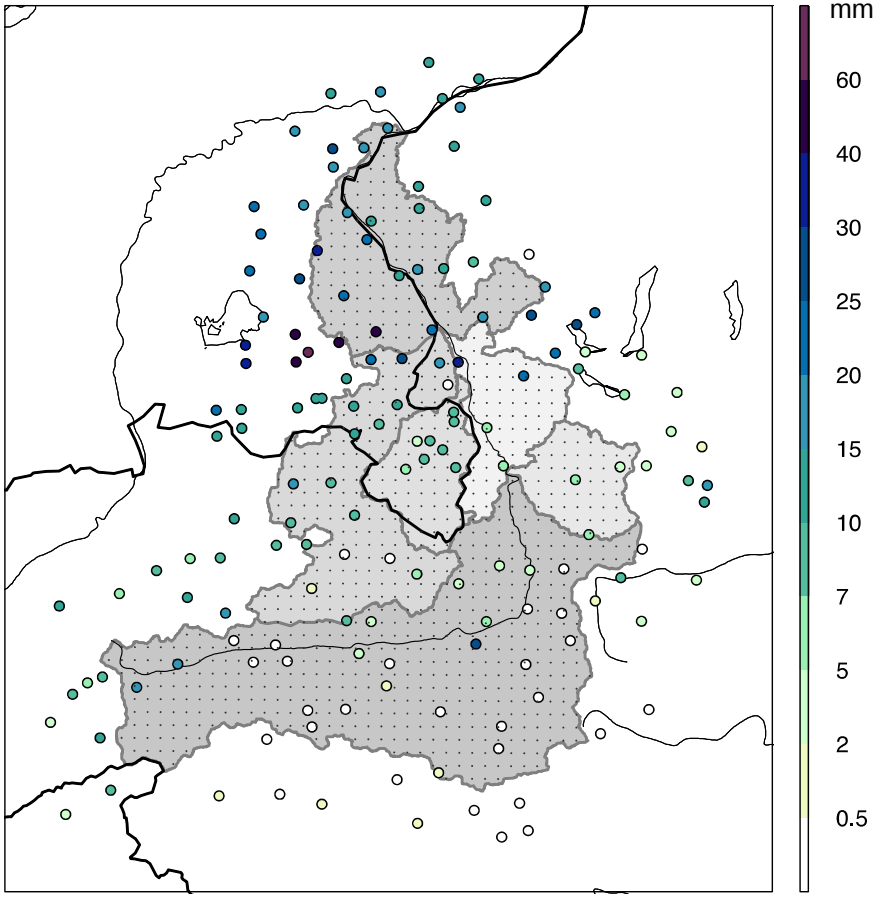

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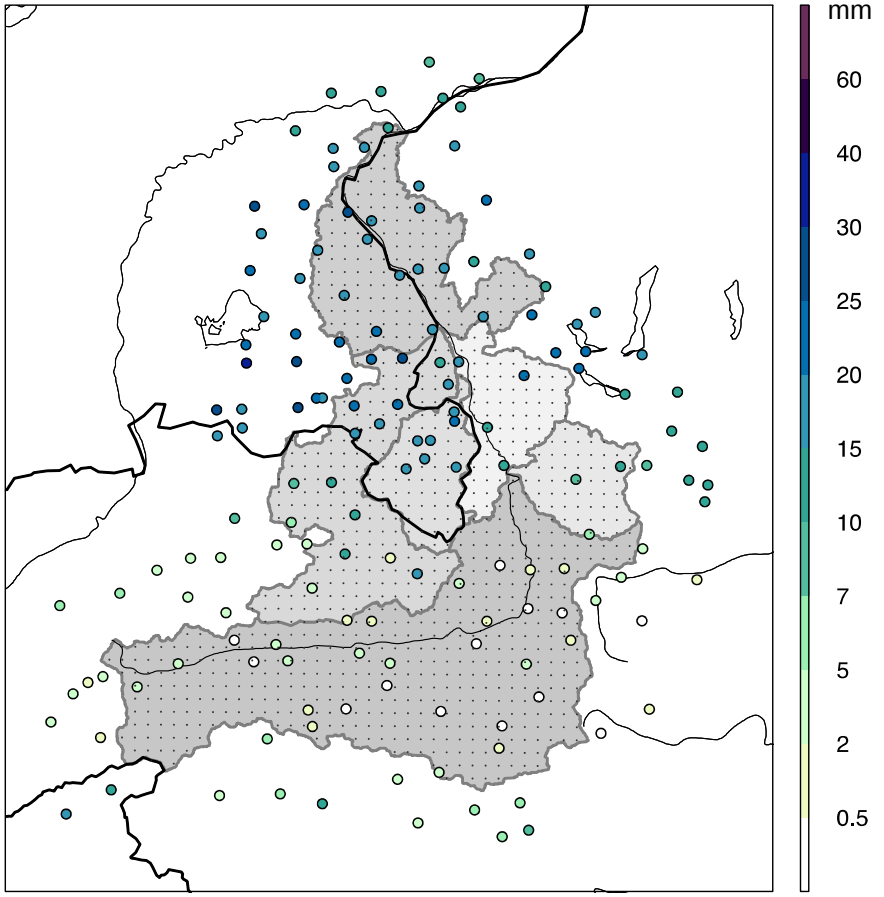

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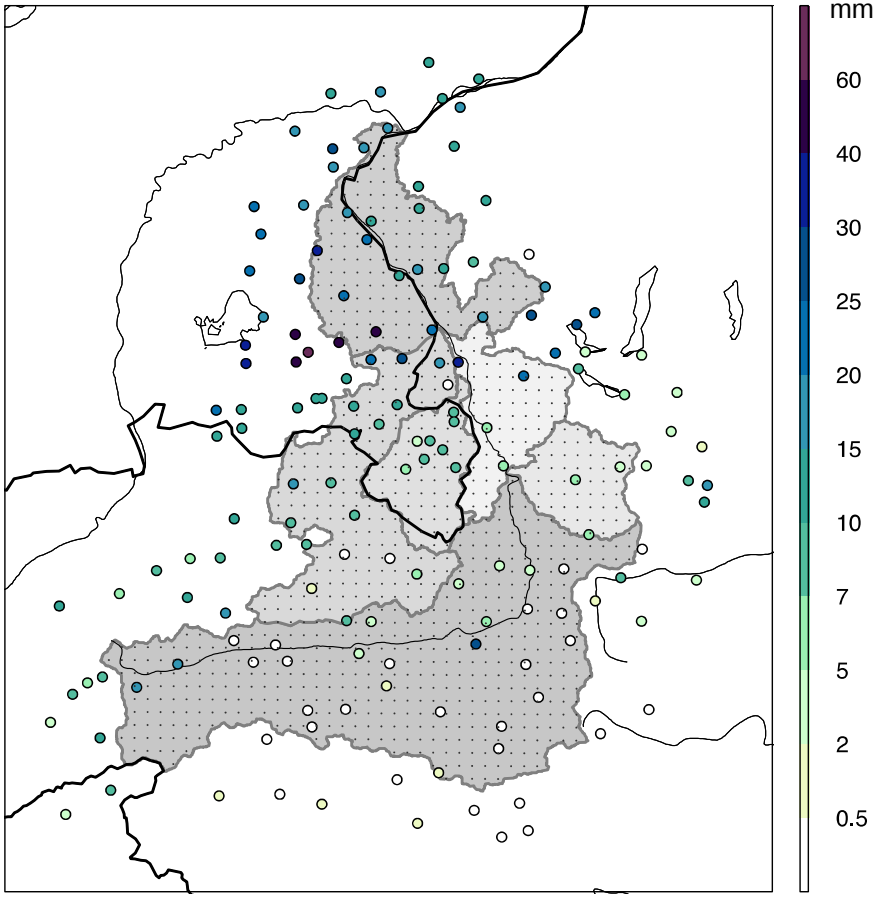

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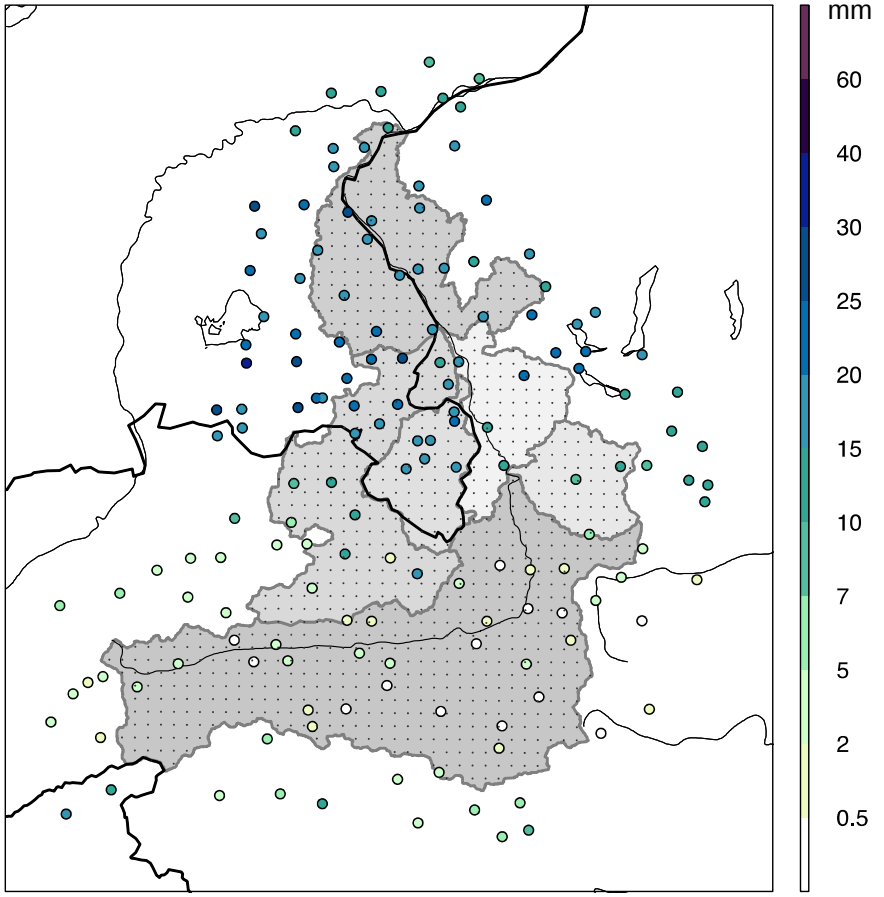
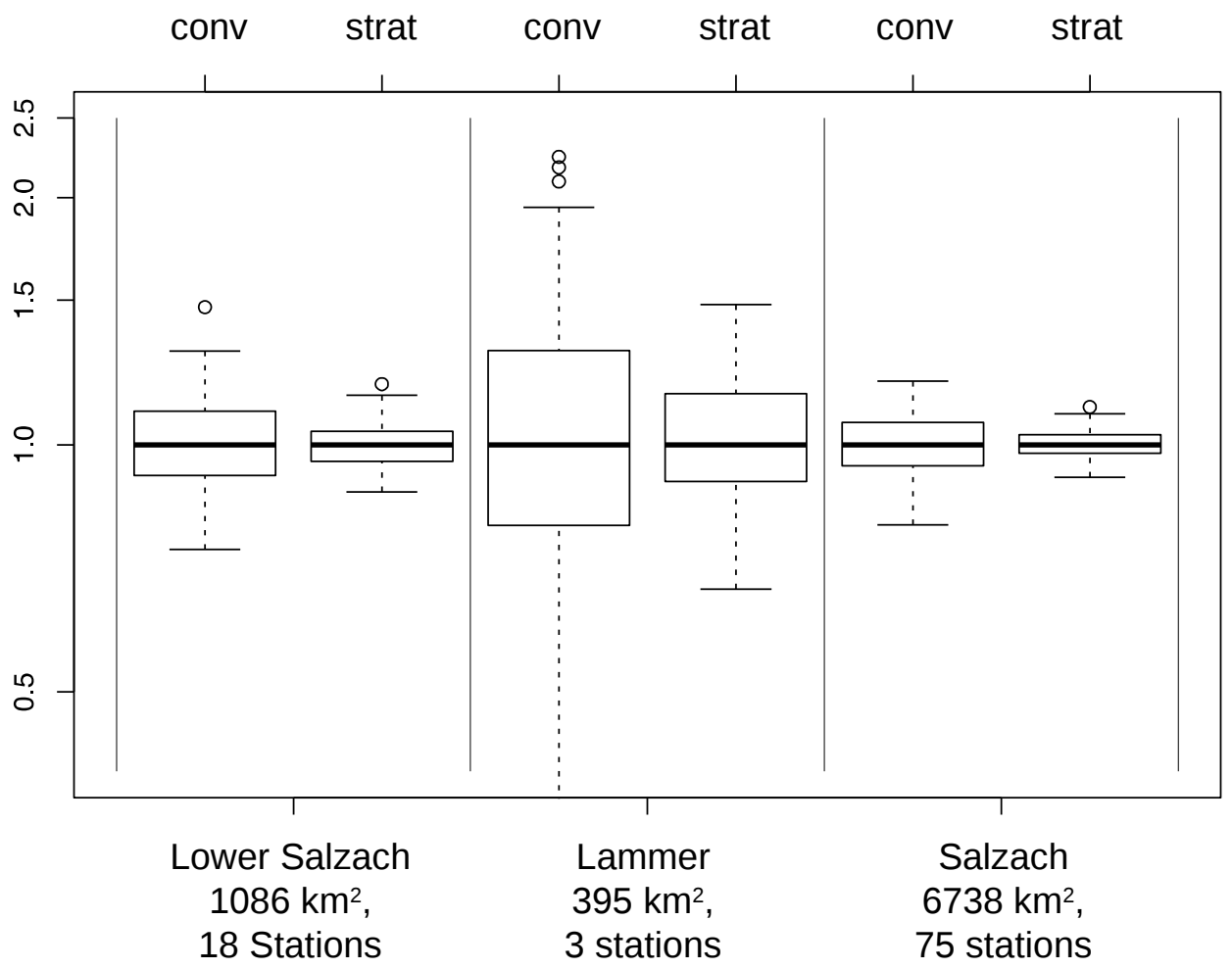


Salzach (6738 km²): Lower Salzach (1086 km²), Lammer (395 km²)

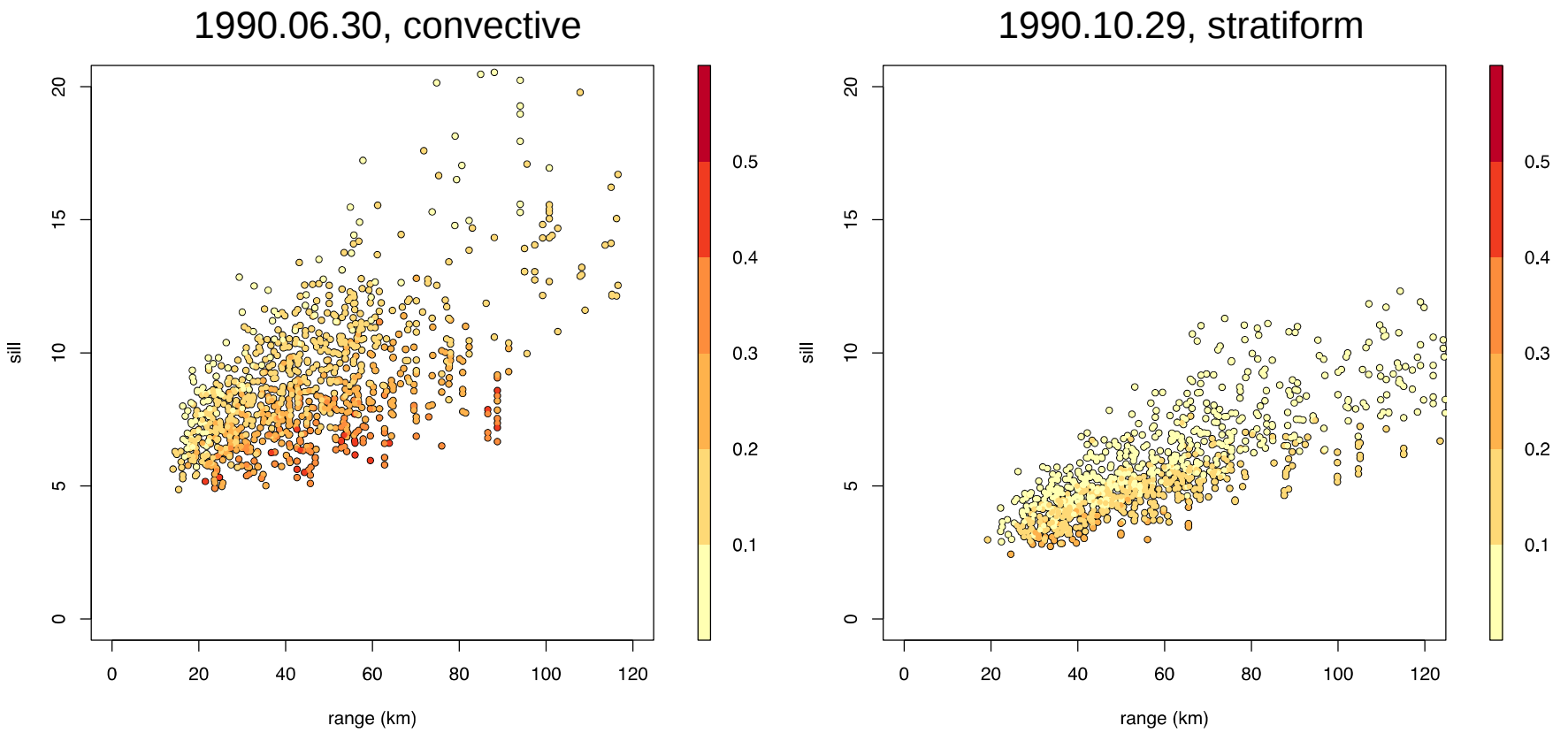
Illustration – Catchment Mean Spread



100 members

spread of catchment mean, relative (i.e. divided by median)

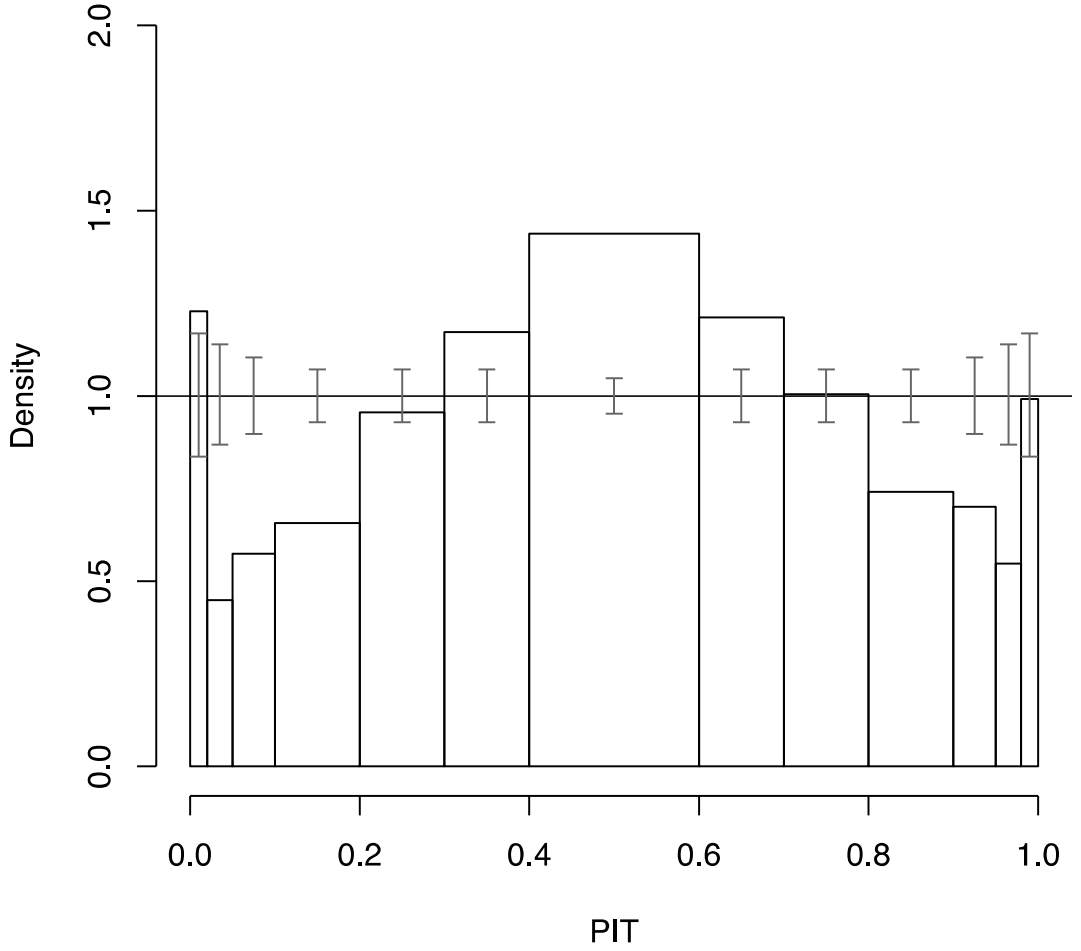
Illustration – Model Parameters



x: range (km), y: sill ($mm^{2\lambda}$), color: nugget/sill (-)

Reliability

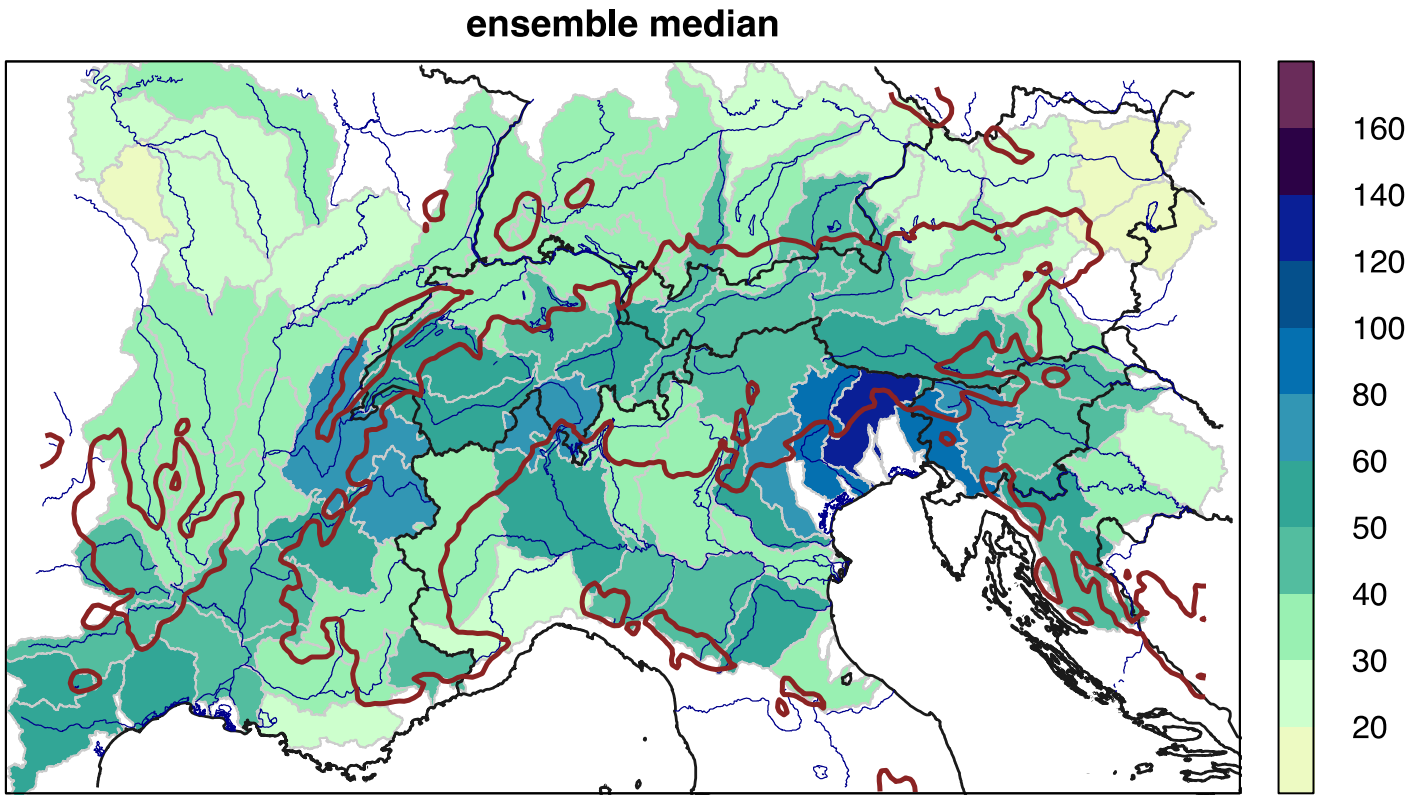
PIT Histogram (similar to Rank Histogram, Talagrand diagram)



Crossvalidation:
158 stations,
Salzach catchment
43 days in 1990

Uncertainty and Station Density

Scale B, largest event per catchment in 1990



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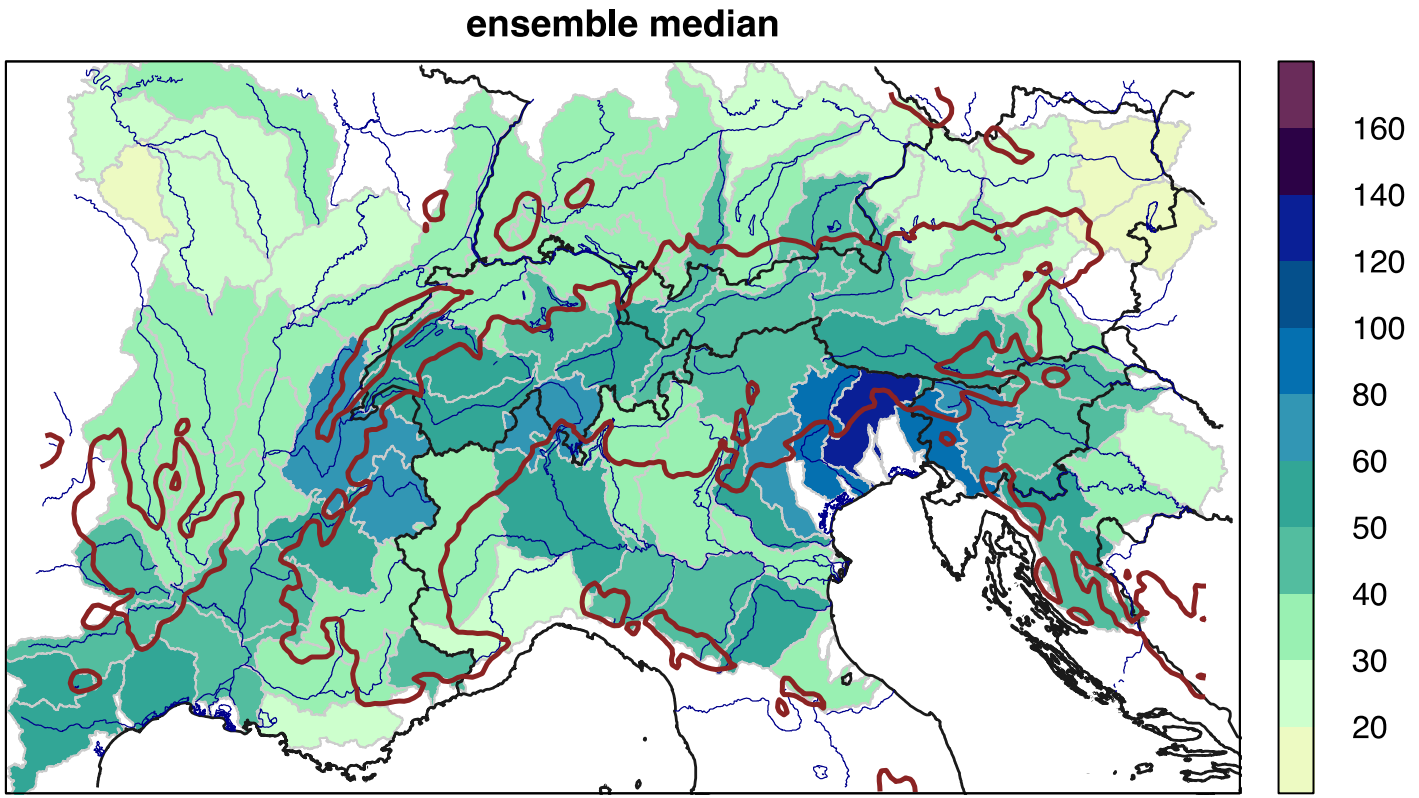

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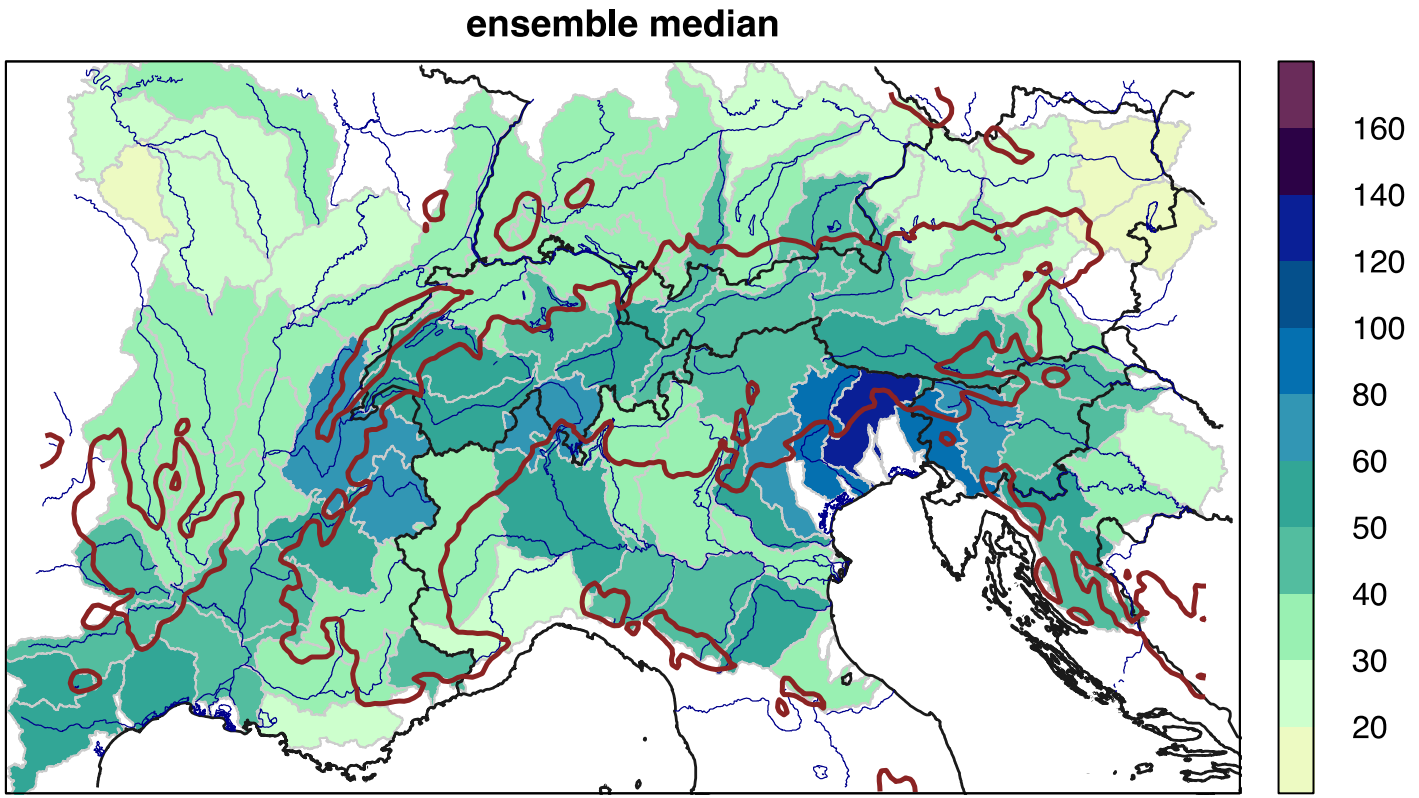

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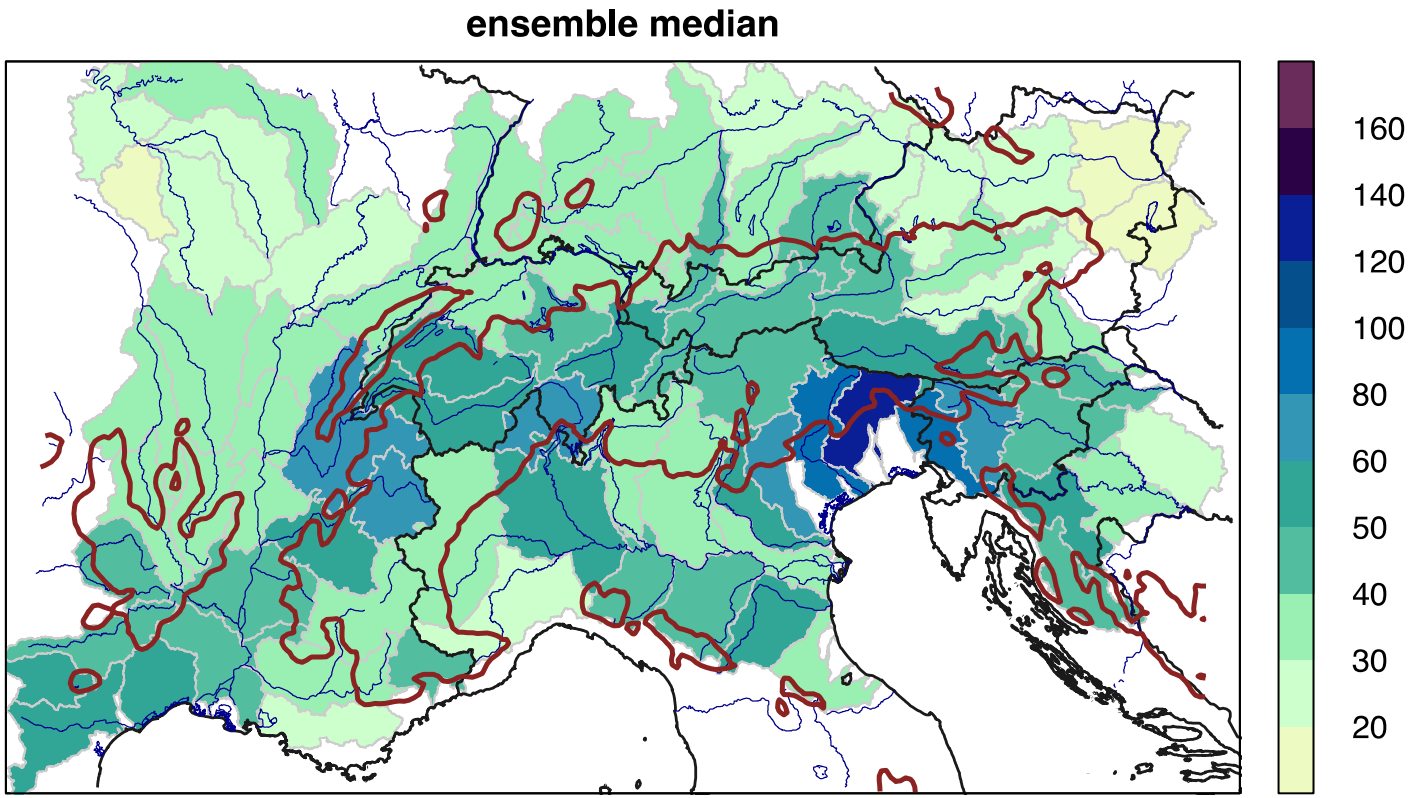
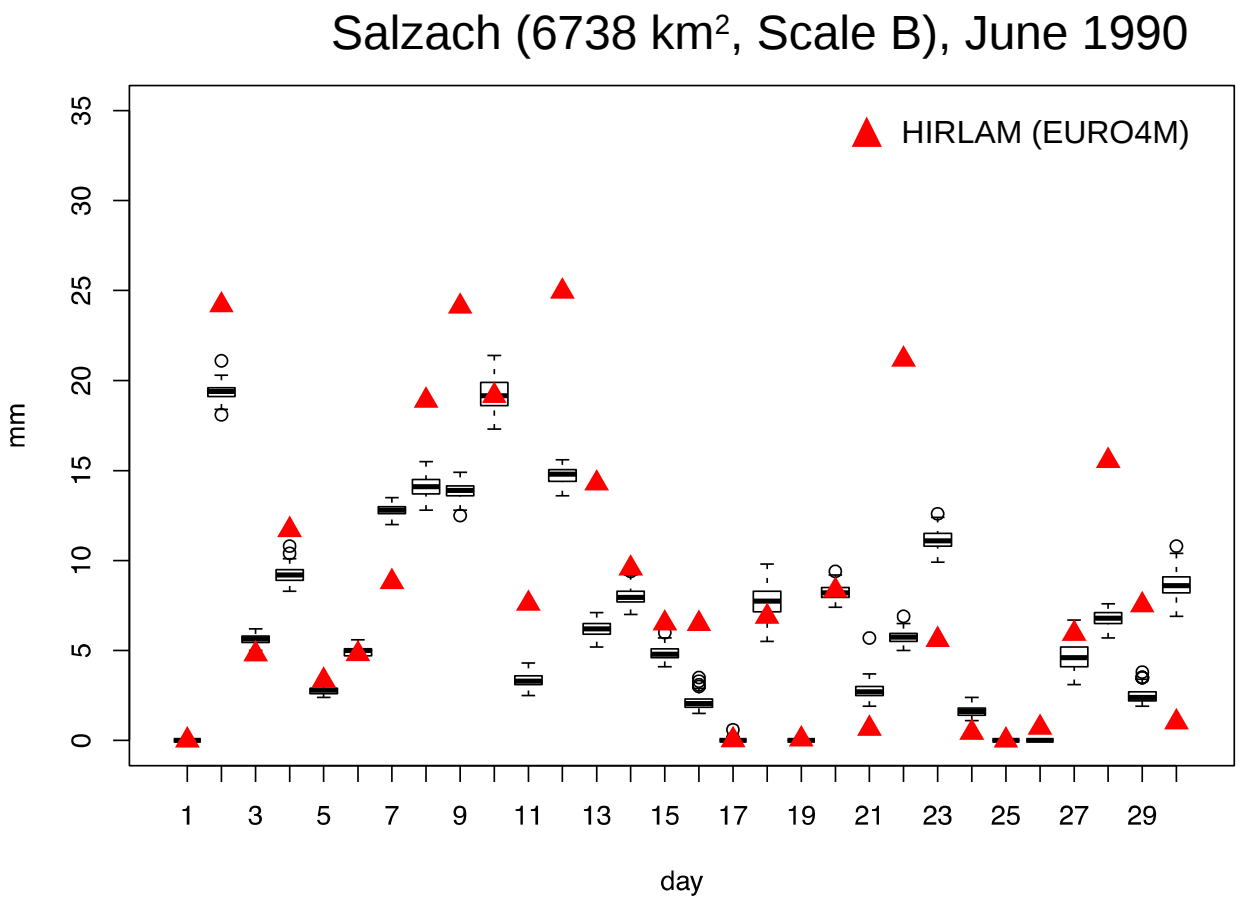


Evaluation under Uncertainty



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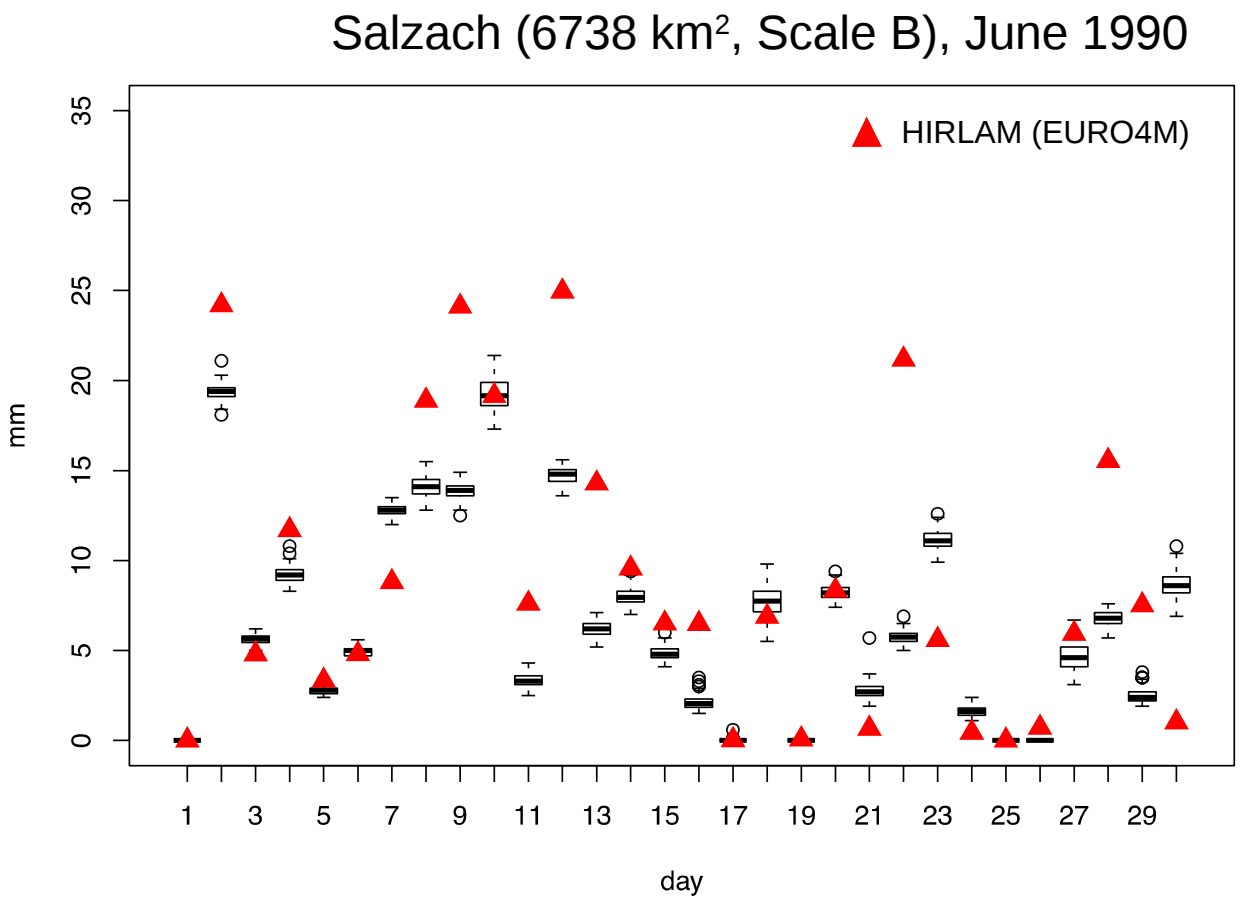

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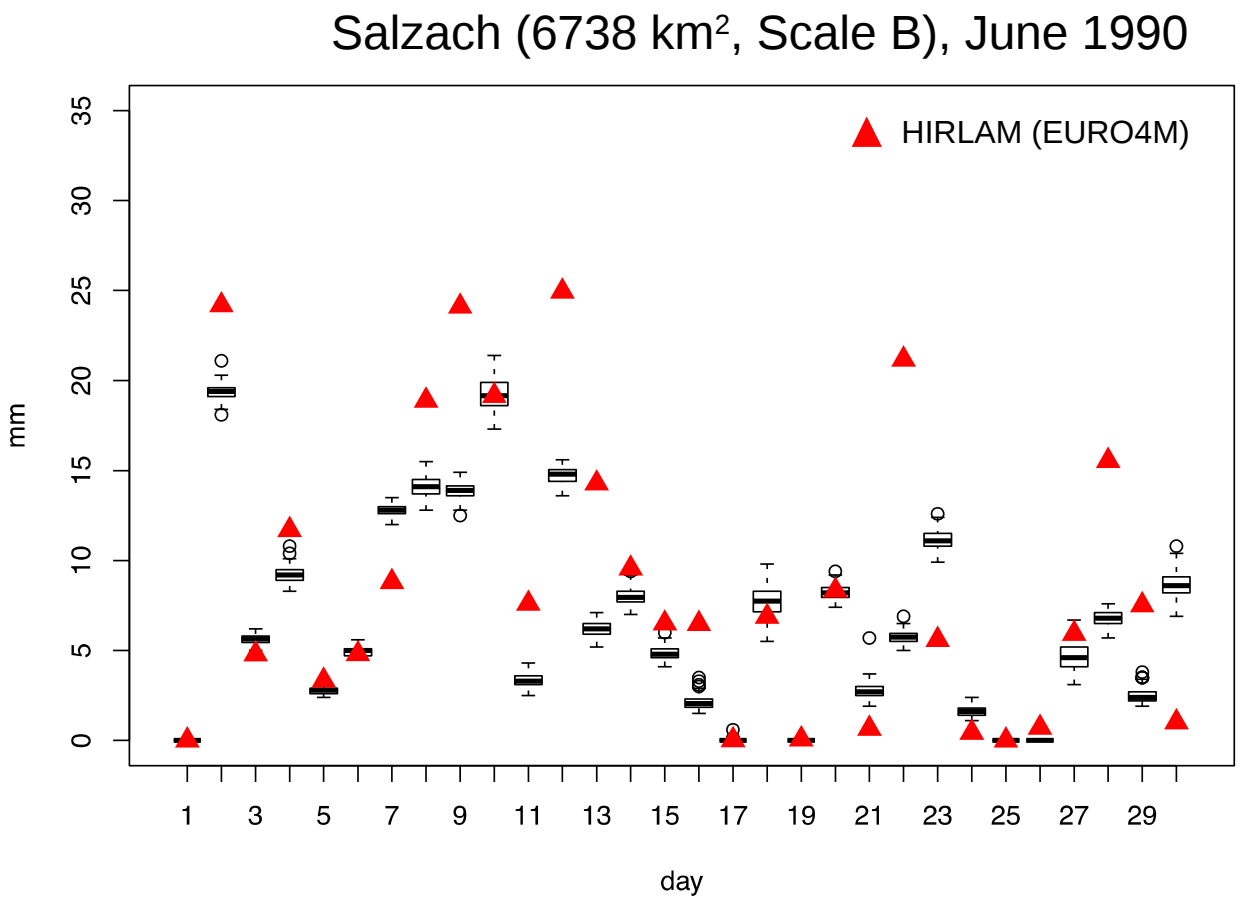

Conclusion and Plans

- Method Development
  - Probabilistic (ensemble) analysis of area-mean precipitation
  - spread depends on station density, spatial variance, unit area
  - good reliability in tests, slightly too large spread

- Production
  - planned for >400 hydrological units, 4 space scales
  - computationally demanding
  - restrictions will be necessary (only heavy events)

- Evaluation
  - less issues about spatial representativity issues
  - evaluation under observational uncertainty
    (e.g. Candille & Talagrand 2008)