



## Statistical post-processing of dual-resolution ensemble forecasts

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The computational cost as well as the probabilistic skill of ensemble forecasts depends on the spatial resolution of the numerical weather prediction model and the ensemble size. Periodically, e.g. when more computational resources become available, it is appropriate to reassess the balance between resolution and ensemble size. Recently, it has been proposed to investigate this balance in the context of dual-resolution ensembles, which use members with two different resolutions to make probabilistic forecasts. This study investigates whether statistical post-processing of such dual-resolution ensemble forecasts changes the conclusions regarding the optimal dual-resolution configuration.

Medium-range dual-resolution ensemble forecasts of 2-metre temperature have been calibrated with the help of ensemble model output statistics [1] using both local and semi-local approaches to parameter estimation [2]. The forecasts are produced with ECMWF's Integrated Forecast System and have horizontal resolutions between 18 km and 45 km. The ensemble sizes range from 8 to 254 members. The forecasts are verified with SYNOP station data. Results show that score differences between various single and dual-resolution configurations are strongly reduced by statistical post-processing. Therefore, the benefit of some dual-resolution configurations over single resolution configurations appears to be less pronounced than for raw forecasts. Moreover, the ranking of the ensemble configurations can be affected by the statistical post-processing.

## References

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