

Downscaling precipitation data over the UK

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Operational forecasting models are seeing continual improvements in spatial resolution. Nonetheless, there is still a gap between the resolution of these forecasts and that required for many downstream applications, hydrology being a notable example.

Bridging this gap would require post-processing the gridded data to produce a higher-resolution forecast. While this problem is ill-posed in the sense of having no unique answer, it may be answerable in a probabilistic sense by generating samples from a realistic distribution.

This work considers a precipitation downscaling task, applied to the MOGREPS-UK model. Having reduced the forecast field's resolution by averaging over groups of grid cells, we investigate how much of the high frequency information can be recovered.