



Improving forecasts through rapid updating of temperature trajectories and statistical post-processing

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In operational forecasting, a particular NWP forecast is usually not revisited once it has been issued. However, technological advancement and the short-term availability of observations make it possible to improve a forecast trajectory even after completing the NWP model run and post-processing. We propose a computationally efficient method to update the tail of a forecast trajectory, while the first part already verifies.

The inherent correlation structure of the forecast errors between lead times and different times of the day lends to an adaptive regression approach taking into account changes in predictability. This approach also allows for a smoother transition between forecast runs, as older forecasts, accordingly corrected, become more skillful than the first few forecasts of a new model run. We will demonstrate a combination of traditional statistical post-processing and this novel updating technique using hourly forecasts of surface temperature for lead times 1-36 provided by the UK Met Office's limited-area MOGREPS-UK ensemble.