



Rapid Adjustment of Forecast Trajectories: Improving short-term forecast skill through statistical post-processing

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The skill of a typical NWP forecast decreases over time, so that forecasts from more recent model runs are generally considered to be more skillful and give more accurate predictions. Some post-processing techniques still make use of older model runs through time-lagging or blending, but with very little relevance, as the newer model runs are preferred.

At the same time, technological advances make observations become available in very short time frames and in increasing amounts. We propose a new method, Rapid Adjustment of Forecast Trajectories (RAFT), which works in combination with traditional statistical post-processing techniques and uses short-term observations to improve older forecast runs. As a result, older forecasts match or even surpass the skill of the forecasts from the newest model run.

Relying on the inherent correlation structure of the forecast errors between lead times, RAFT updates the tail of a forecast trajectory while the first part verifies. The adaptive regression approach takes into account changes in predictability and local patterns, while being computationally efficient. We will present RAFT versions for hourly surface temperature and 10m wind speed forecasts from the UK Met Office's MOGREPS-UK ensemble.