

## ***Interactive comment on “Order of operation for multi-stage post-processing of ensemble wind forecast trajectories” by Nina Schuhen***

**Anonymous Referee #2**

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The author discusses a generalization of the recently proposed rapid adjustment of forecast trajectories (RAFT) approach of improving the previously obtained predictive distributions using the most recent forecast error information. While in the original work [1] just the mean of the ensemble model output statistics (EMOS) predictive distribution for temperature is adjusted by RAFT, here a more complex question is investigated. After calibration of wind speed ensemble forecasts with two different EMOS models, RAFT is extended with ensemble copula coupling (ECC) in order to account for the dependencies between forecasts at different lead times. The main question of the paper is to decide whether after an EMOS calibration it is more beneficial to apply first RAFT to adjust the EMOS mean and then ECC, or consider ECC first and apply RAFT to the obtained simulated forecasts. The presented results are definitely new

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and interesting and in general, the paper is well written and easy to read. However, there are some inaccuracies requiring clarification:

1. P3,L82: The name "non-homogeneous Gaussian regression" is misleading, as there are several EMOS approaches where the predictive distribution is non-Gaussian. Use simply "non-homogeneous regression".
2. P5,L100:  $\sigma^2$  is not the variance of the truncated normal distribution. It is a scale parameter.
3. P5,L116: Is there any explanation why the optimization procedure is more stable for wind speed forecasts given in knots?
4. P15,L331: I don't think that the slight deviation of the PIT histograms from uniformity is coming from the use of instantaneous wind speed data. E.g. in [2], where in the case studies both maximal and instantaneous wind speed is considered, the truncated normal EMOS model results in rather similar PIT histograms.
5. The blue and green lines of Figure 7 are hard to distinguish in BW, a different choice of colors or using solid and dashed lines would be better.

References:

1. Schuhen, N., Thorarinsdottir, T. L. and Lenkoski, A. (2019) Rapid adjustment and post-processing of temperature forecast trajectories. arXiv:1910.05101.
2. Baran, S., Lerch, S. (2015) Log-normal distribution based EMOS models for probabilistic wind speed forecasting. Q. J. R. Meteorol. Soc. 141, 2289-2299.

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