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On the impact of observation uncertainty on ensemble verification results

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Observations are estimates of the truth. This can have large implications for the assessment of ensemble forecasts, and the interpretation of results. In particular, the ranking of competing systems should not be affected by the quality of the observations. In order to account for observation uncertainty in the verification process, the so-called "perturbed-ensemble" approach is followed (Saetra et al. 2004). The impact on ensemble verification results is investigated, considering different levels of complexity/accuracy in the representation of observation errors. The sensitivity of different probabilistic scores to observation uncertainty is also discussed.

Saetra O, Hersbach H, Bidlot JR, Richardson DS. 2004. Effects of observation errors on the statistics for ensemble spread and reliability. Mon. Weather Rev. 132: 1487–1501.