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A study of the effect of bias correction and downscaling on the performance of ensemble forecast systems

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Ensemble weather forecasts generated by Numerical Weather Prediction (NWP) systems suffer from systematic errors associated with the use of imperfect analysis, numerical modeling, and ensemble systems. Resulting negative effects are (a) lead time dependent systematic errors ("drift") due to initializing an imperfect model with an observed initial ocondition, and (b) lack of details due to the spatial/temporal truncation of the models used. In this study, simple approaches to statistically correct each of the two problems will be introduced and the negative effect from each source of systematic errors will be compared for operational NWP ensemble systems.