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A Global Study on Ensemble Prediction Method

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By introducing cell-to-cell mapping method of global analysis and using a six-variable nonlinear model, the influence of different perturbation within observational error on prediction is studied first in this paper. Based upon such a global understanding, it is proved that ensemble prediction method does improve the prediction by both theoretical research and forecasting practice. The optimal number of ensemble samples can be obtained theoretically, and it is consistent with the result of model forecasting experiment. Moreover, the observational precision, forecasting precision, and variable number of a model have different influences on the optimal number of ensemble samples.

Key words: Ensemble prediction, The optimal number of ensemble samples, Global analysis.