

Name: Harry Hendon
H.Hendon@bom.gov.au
Bureau of Meteorology/CAWCR
Melbourne 3001 Australia
Country: Australia

Title: Coupled Breeding for Initializing Ensemble Multiweek Prediction
Additional authors: Patricia Okely, Debra Hudson, Yonghong Yin, Oscar Alves

Additional Affiliations:

Abstract:

The Australian Bureau of Meteorology has recently upgraded its capability to make coupled model forecasts of intraseasonal climate variations through enhancements to the ensemble generation. The new ensemble generation scheme is based on a coupled breeding approach and produces an ensemble of perturbed atmosphere and ocean initial states. This scheme impacts favourably on the forecast skill of rainfall and temperature compared to its predecessors which used either time-lagged atmospheric initial conditions but with unperturbed ocean initial conditions or an ensemble of perturbed ocean initial conditions but with only a single atmospheric initial condition. The improvement in forecast performance using the coupled-breeding approach is primarily reflected in improved reliability in the first month of the forecasts, but there is also higher skill in predicting important drivers of intraseasonal climate variability, namely the Madden Julian Oscillation and Southern Annular Mode. Reasons for improved spread (reliability), especially compared to lagged atmospheric initial conditions, are discussed from the perspective of error growth.

End