3rd International Conference on Earth System Modelling
Vol. , 3ICESM-357-1, 2012
3rd International Conference on Earth System Modelling

The Canadian Seasonal to Interannual Prediction System (CanSIPS)

W. J. Merryfield (1), B. Denis (2), J.-S. Fontecilla (2), W.-S. Lee (1), V. V. Kharin (1), J. Hodgson (2), B. Archambault (2), G. J. Boer (1), J. F. Scinocca (1), and G. M. Flato (1)

(1) Canadian Centre for Climate Modelling and Analysis, Environment Canada, Victoria, Canada (bill.merryfield@ec.gc.ca), (2) Canadian Meteorological Centre, Environment Canada, Dorval, Canada

Environment Canada's coupled model-based long range forecast system, CanSIPS (for Canadian Seasonal to Interannual Prediction System), became operational in late 2011. CanSIPS relies on two versions of CCCma's coupled climate model to produce an ensemble of forecasts from 1 to 12 months and replaces Environment Canada's previous two-tier, four-model dynamical forecasts to 4 months and statistical forecasts to longer leads.

The two CanSIPS models, CanCM3 and CanCM4, share the same ocean component which is coupled to versions 3 and 4 of CCCma's global atmospheric model. Gridded atmospheric temperatures, humidities and winds, ocean temperatures, and sea ice data are incorporated into separate coupled assimilation runs for each ensemble member to produce initial conditions for the forecasts.

This presentation will describe the CanSIPS models, the initialization method, and hindcast skill in predicting ENSO and Arctic sea ice as well as global and Canadian climate. Operational aspects will be touched on, as will calibration procedures that improve the reliability of the multi-model probabilistic forecasts and the presentation of results via web-based visualization tools.