

**Séminaire vendredi le 14 juin 2019 11:00 / Seminar Friday June 14th 2019
11:00h**

Sujet/Subject: The Canadian Seasonal to Interannual Prediction System Version 2 (CanSIPsv2)

Langue/language : Anglais/English

Conférenciers/Lecturers: Hai Lin (RPN-A)

Résumé/Abstract:

Environment and Climate Change Canada (ECCC) has been applying a multi-model ensemble approach in the operational seasonal prediction since its first dynamical seasonal prediction in September 1995, when 12-member ensemble forecasts of three months were produced using two atmospheric models with persistent anomalies in SST and sea ice, i.e., a two-tier system. The system was upgraded in October 2007 to use two additional atmospheric models and the ensemble size was increased to 40 with the forecast range increased to four months. The two-tier seasonal forecasting system was replaced by the Canadian Seasonal to Interannual Prediction System (CanSIPS) in December 2011, which is a 20-member ensemble 12-month forecast of two coupled atmosphere-ocean-land climate models (CanCM3 and CanCM4).

The second version of CanSIPS will be implemented at the Canadian Meteorological Centre in summer 2019. In CanSIPsv2, CanCM3 of CanSIPS is replaced by a new coupled model, GEM-NEMO, and CanCM4 is upgraded to CanCM4i with improved initialization. Seasonal forecast skill is assessed based on the reforecast for the 30 years of 1981-2010, with 10 ensemble members each model of 12-month integrations. CanSIPsv2 outperforms the previous CanSIPS system in forecasting almost all variables including surface air temperature, 500 hPa geopotential height, and precipitation. Significant improvement of sea ice forecast quality is achieved. Results are also shown for the forecast skill of major modes of large-scale atmospheric variability, e.g., the Pacific-North American Pattern, the North Atlantic Oscillation, and the Madden-Julian Oscillation.