

Séminaire **Lundi 27** janvier 2014 **10:30h** / Seminar **Monday** January **27th**
2014 **10:30h**

Sujet/Subject: Environment Canada's High Resolution Deterministic Prediction System -- Proposal for a Pan-Canadian Sub-System .

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Résumé/Abstract

Numerical weather prediction (NWP) systems at the near cloud-resolving scale (i.e. km-scale grid spacing) are quickly moving to the forefront in operational weather centres around the world. Modeling at this scale provides a distinct potential for improved numerical guidance over coarser resolution systems due to the increased ability to resolve surface forcing and storm dynamics. As a result, km-scale NWP systems have a greater capacity, in principle, to provide numerical guidance for high-impact weather elements. Environment Canada is moving towards use of 2.5-km deterministic system as the main source of 2-day NWP guidance. It is planned that within two years, the current multi-grid High Resolution Deterministic Prediction System (HRDPS) will be completely transformed into a single pan-Canadian grid system, piloted by the global deterministic model (GDPS), and with its own surface and upper-air data assimilation systems.

This presentation will outline the proposal for phase 1 of this transformation. This involves the implementation of a pan-Canadian 2.5-km experimental subcomponent, with atmospheric fields supplied by the regional model (RDPS; as is done currently), but with hydrometeor (clouds and precipitation) fields now “recycled” from the 6-h forecast of the previous 2.5-km run, and with initial surface fields supplied by a fully coupled 2.5-km Canadian Land Data Assimilation System (CaLDAS). As such, this is not simply the addition of a new HRDPS domain but rather it is the first step of a fundamentally new approach to providing model initial conditions and it includes the mechanics of a cycling system necessary for upper-air data assimilation (for phase 2). An overview of the system will be presented along with comparisons of standard scores against the existing HRDPS domains and against the RDPS.