



## **Implementation of an atmosphere-ocean-sea ice coupled model in the CMC-Meteorological Service of Canada operational forecast system**

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Atmosphere-ocean-sea ice interactions are important in Eastern Canada due to the proximity of the North Atlantic Ocean, the Labrador Sea and the presence of three relatively large inner basins: the Gulf of St. Lawrence (GSL), Hudson Bay and the Great Lakes, influencing the evolution of weather systems. The work of Pellerin et al. (2004) clearly showed the importance of the full interactive coupling between an atmospheric and a sea ice model over the Gulf of St. Lawrence (GSL) to obtain better atmospheric and sea ice forecasts over the GSL and in adjacent coastal areas.

The goal of this project is to implement a coupled system in the CMC operational weather forecast system for Eastern Canada in order to improve the meteorological, oceanic and sea-ice forecasts. For the atmospheric part, we use the Canadian operational model GEM (Coté et al. 1998) and for the oceanic part we use an ocean-ice model for the Gulf of St. Lawrence developed at the Maurice-Lamontagne Institute (Saucier et al. 2003). The coupling of the models is done with the OASIS coupler (Valcke 2004) developed at the European Centre for Research and Advanced Training in Scientific Computation (CERFACS). The project and preliminary results are presented.