

## Lakes in the Canadian Regional Climate Model

A. Martynov, L. Sushama, R. Laprise

Canadian Regional Climate Modelling and Diagnostics (CRCMD) Network, University of Quebec in Montreal

Covering 9% of the Canadian territory, lakes are an important element of Canadian climate system and are essential for the regional climate modeling in Canada. The current version of the Canadian Regional Climate model (CRCM) incorporates a simple mixed layer lake model, using the thermal flux residuals calculated by CRCM using prescribed SST. This model simulates adequately the influence of Great Lakes to the regional climate, but not very flexible while changing domains due to the need to re-compute residues. In addition, this approach is not applicable to the sub-grid lakes. The next generation of the Canadian RCM, will have many advanced land-surface modules including interactive lakes, both resolved and sub-grid type. The interactive coupling of 1D lake models in CRCM is in progress. As a first step, several lake models, including the Fresh water Lake (FLake) and the Hostetler model were tested off-line in conditions, reflecting different lake configurations (subgrid and resolved, deep and shallow lakes) and will be presented in this talk.