

Validation of Hydro-Meteorological Variables and their Projected Changes for North American Basins in an Ensemble of Canadian Regional Climate Model Simulations

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Regional Climate Models (RCM) with their complete closed water budget are ideal tools for the assessment of climate change impacts on water resources. The Canadian Regional Climate Model (CRCM) is continuously modified to improve the physical parameterization in the model for a more realistic representation of atmospheric and boundary layer processes as well as surface forcing. In addition to earlier model improvements, the current version of CRCM supports the Canadian LAnd Surface Scheme CLASS (version 2.7). An ensemble of Canadian RCM current and future climate simulations over North America are used to study projected changes to the annual and monthly statistics of hydro-meteorological surface fields (precipitation, runoff, snow water equivalent, evapotranspiration). The study addresses the 1961-90 and 2041-70 time slices and focuses on the atmospheric and terrestrial water cycle components over the large North American basins of Mackenzie, Fraser, Columbia and St Lawrence. Results from this study will be presented along with preliminary results obtained with other RCMs (ARPEGE, REMO).