



Hydrological impact of climate change on tributaries of the St. Lawrence River including uncertainty analysis

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Adapting to impacts of climate change is one of the major challenges to face over the next decades in the water management domain. Reliable information about climate change impacts on hydrological indicators (such annual and monthly water yields, flood and low flow frequencies) operationally used for water management and water use planning is needed for preparing adaptation. Available tools for assessing climate change impacts generate a lot of uncertainties and make difficult the quantification of the climate change signal. This study aims to utilise members of the Canadian Regional Climate Model (CRCM) driven by Canadian Global Climate Model (CGCM) and piloting the Hydrotel hydrological model for the preparation of hydrological projections. Uncertainty analysis of hydrological projections (associated with the climate internal variability, a bias correction applies to CRCM/CGCM outputs and the hydrological model calibration) is performed. Results presents spatially distributed relative changes of hydrological indicators due to climate change and their associated uncertainties over a large portion (390 000 km²) of the St. Lawrence River drainage basin located in the province of Quebec, Canada.