



## **Evaluation of daily precipitation indices over North America in multiple datasets**

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The study presents a regional analysis and evaluation of simulations from two Canadian regional climate models (RCMs), CanRCM4 and CRCM5 developed respectively at EC-CCCma and UQAM/ESCER, participating in the CORDEX-North America experiment. The focus is on the models' skill in simulating daily precipitation indices with respect to several sets of gridded observations. The Canadian RCMs are also compared against four reanalyses and six other RCMs that take part to the NARCCAP program. The different configurations of Canadian RCM simulations allow also to evaluate the respective effects of different spatial resolutions, driving fields and nudging procedures on the simulated fields. Results show that, for the winter season, the 0.44 degree CanRCM4 and CRCM5 reproduce quite accurately the cumulative total amount of precipitation, as well as the occurrence of wet days and the 90th, 95th and 99th percentiles of daily precipitation. The increase in resolution is associated with an increase in precipitation of high intensity, while the use of interior spectral nudging or different driving fields influences the dry spells' occurrence, especially over Mexico and central US.