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ICTS – First results with the Canadian Regional Climate Model – Investigation of spin-up time over various domains.

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The Canadian Regional Climate Model (CRCM) maintained and operated by the Climate Simulations team of the Consortium Ouranos (Montréal, Québec, Canada) is a participating model in the GEWEX Inter-CSE (Continental Scale Experiment) Transferability Study (ICTS). One goal of this project is to run different RCMs over different domains, each model having the same configuration everywhere, and to see how general is the application of a RCM over a climatic regime different from its homeland. For this purpose, 7 GEWEX domains were selected, two over north America (GAPP and MAGS), one over Europe (Baltex), one over Asia (GAME) one over south America (LBA/LPB), one over Australia (MDB) and one over Africa (Amma).

For this project, CRCM_V4.0.1 is driven by NCEP-DOE AMIP II Reanalysis and AMIP II SST and sea-ice for a 6-year period starting January 1999 to November 2004. North America region is the primary CRCM domain and many runs have been made over Europe, but the four others domains cover regions were the CRCM is used for the first time. Timestep is 15 minutes, resolution is about 45 km at the center of each domain and fields are archived every hour but for Europe (3 hours).

CRCM_V4.0.1 is using the Canadian LAnd Surface Scheme (CLASS_2.7). This 3-layer scheme requires a long spin-up to let the soil variables reached their equilibrium values. For our regular climate simulations, a 3-year spin-up period is used. However the ICTS runs are rather short and a spin-up of only a year is used for CRCM runs (while the ICTS criteria was 6 months). In this poster, the first analysis concentrates on the soil water content and spin-up behaviour in the different climate regions.