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The Canadian Regional Climate Model, Version 5 (CRCM5): Sensitivity to the domain location in the West Africa (Cordex domain: WA-S and WA-N)

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West African (WA) is affected in recent years by climatic extremes of drought and floods. Adaptation options were taken, but they are insufficient for food safety. A major challenge for people is to predict and adapt to these extreme weather events. This study addresses the sensitivity of the Canadian Regional Climate Model, version 5 (CRCM5) to domain location and its reliability in reproducing the observed climate in WA. This study document the uncertainty of the domain location for the projections of future scenario. The first part of this study is to analyze the sensitivity of CRCM5 simulations to the domain location. For this purpose, a set of four simulations covering WA was performed with the CRCM5. These simulations differ from each other only in the location of the integration domain. The variability due to different locations (VL) is evaluated as the differences between these simulations during the integration period. Preliminaries results shown that the location of the computational domain induces important differences amongst the four simulations, with the maximum VL corresponding to convective zones during the wet season when the lateral boundary conditions appear to exert little control. The second part of this study is to assess the reliability of the CRCM5 to simulate the observed climate in WA. To meet this goal, the CRCM5 outputs are compared with available observations. Preliminaries results showed that CRCM5 represents the annual cycle and geographic distribution of precipitation. Future work will focus on evaluation of CRCM5 simulations to the variability of the climate.