1. Introduction
Following the Coordinated Regional Climate Downscaling Experiment (CORDEX) protocol, the new fifth-generation Canadian Regional Climate Model (CRCM5) is driven by two GCMs (CanESM2 and MPI-ESM-LR) for the period 1950-2100 under the RCP4.5 emission scenario. CRCM5 performance in reproducing current climate when driven by ERA-Interim reanalysis and GCMs is shown first. Projected climate change for Africa follows.


5. Conclusions
Overall CRCM5 succeeds in reproducing the main features of current climate over Africa. There is however a dry bias in the Sahel region. When driven by ERA-Interim reanalysis, CRCM5 is able to simulate the double peak of rainfall in the Guinea Coast region. On the contrary, when driven by the two GCMs the model (as well as the driven GCMs) fails to reproduce this feature of the annual cycle of precipitation in this region.

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4. Climate change 2041-2070: 1981-2010

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– CRCM5 climate-change warming:
  • Smaller than driving CanESM2 by about 0.5 degree
  • Similar to driving MPI-ESM_LR

– Precipitation changes:
  • Overall small changes projected, especially for JFM
  • Narrowing and intensifying tropical rainbelt in JAS
  • Little consensus on details for the 2 GCMs and the 2 GCM-driven CRCM
  • CRCM5/MPI-ESM_LR more similar to its driving GCM than CRCM5/CanESM2.

References
Climate Dynamics doi: 10.1007/s00382-012-1387-z

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Simulating current and future climate over CORDEX Africa domain using the fifth-generation Canadian Regional Climate Model (CRCM5)
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