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# Future changes in the African temperature and precipitation climate in an ensemble of Africa-CORDEX regional climate model simulations

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In this study we investigate possible changes in temperature and precipitation on a regional scale over Africa from recent (1961-1990) to future (2011-2040, 2041-2070, 2071-2100) time periods. We use data from an ensemble of regional climate model (RCA4) integrations from the Africa-CORDEX integrations. Here, RCA4 was driven by several coupled atmosphere ocean general circulation models (AOGCMs) under two forcing scenarios, RCP 4.5 and 8.5. The experimental setup allows us to illustrate how uncertainties in future climate change are related to forcing scenario and to forcing AOGCM at different time periods. Further, we investigate the benefit of the higher horizontal resolution, 50 km, in RCA4 by comparing the results to the coarser driving AOGCM data. The significance of the results is investigated by comparing to i) the model simulated natural variability, and, ii) the biases in the control period. Results dealing with changes in the seasonal cycle of temperature and precipitation are presented. We also address higher-order variability by showing results for changes in intensity and frequency of extreme precipitation, drought periods and heat waves.