



Uncertainties in projected climate changes of the rainy season over West Africa related to bias adjustment

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Bias adjustment has become an integral part of pre-processing of climate simulations for use in impact modeling studies. Considered now as a necessary step to deal with inability of climate models to accurately simulate the present/recent climate, bias adjustment is a statistical approach missing physical arguments. Even if bias adjustment is widely used nowadays it is still a topic for debates and criticism. One of the main questions is what level of uncertainty does bias adjustment introduce to future climate projections?

In this study, using an ensemble of the CORDEX-Africa simulations, we investigate potential impact of bias adjustment on the simulated rainy season in West Africa. A number of characteristics reflecting different aspects of the rainy season are used, namely: onset and cessation of the rainy season, mean intensity, total amount of precipitation and intra-seasonal variability within the rainy season. All these characteristics are evaluated in the original CORDEX-Africa simulations and in bias-adjusted ones for a reference period first and then future climate projections of these characteristics are compared between two ensembles. Additionally, we examine how bias adjustment may impact selection of a smaller more manageable ensemble of regional climate simulations from a grand one.