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## Heat Waves Evolution in Senegal under Climate Change

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Following the high temperatures recorded in the Sahel during 2010 and most recently in May 2013 in the northern part of Senegal where the temperature oscillated between 45 and 50 degrees, significant human deaths were recorded. A good understanding of the dynamics of these heat waves thus become necessary not only to improve the prediction of these events, but also to better assess the impact of future climate change on the occurrence and intensification of these heat waves. To address this issue, simulated CMIP5 daily bias-corrected temperature data interpolated on a 0.5° grid over 1950-2099 have been used by focusing on 3 RCP (Representative Concentration Pathways) scenarios, RCP8.5, RCP4.5 and RCP2.6. The heat waves in Senegal are defined by relying on exceeding of a moving percentile relative to maximum, minimum and mean temperature during 3 consecutive days over the MAM (March-April-May), the hottest season of the year. Senegal is characterized by a steep zonal temperature gradient from the coast to hinterland. In RCP8.5, the general temperature increase present for the last 60 years (+1.5°C) will continue and reach ~ +5°C in 2100. In this context, at the end of the century the mean temperatures of the western coastal zone will be similar to the present ones of the eastern continental zone, and the warmest spring seasons recorded over the last 15 years will be the norm around 2040. Then exceptional and yet unknown intense heat waves are planned and policy and decision makers will have to anticipate reliable adaptation strategies.