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convection schemes sensitivity for predict Congo Basin future drought severity

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This paper investigates the sensitivity of two cumulus convection schemes – Grell and Emmanuel – under RCP8.5 scenario drought severity over Congo Basin (CB). The analysis were conducted using a multiscalar drought indices, standardized precipitation index (SPI) for several time scale –3,6,12,24,48 months –during the decades 2021-2030 ; 2031-2040 ; 2051-2060, and 2071-2080. The results reveal that under condition “SPI < -1” Grell’s model – maximum CB grid points average rate of 17.1 months per decade (mth/dec) – presents severe droughts duration trends in CB grid points coordinates different to that of Emmanuel – with maximum CB grid points average rate of 18.3 mth/dec. Thereafter, under the condition “SPI < -2”, the intensification of droughts in Emmanuel’s model evolves gradually with a scale of duration by grid points less stable and more extensive – 6.5 mth/ dec – towards the southern part of CB, while the Grell’s model spreads randomly and less widespread over the CB area with a more stable and reduced duration in maximum average rate of 3.9 mth/ dec.

Promotional text

Good initiatives for the integration and knowledge of researchers from around the world.

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