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كل الحقوق محفوظة للمدرسة الوطنية العليا للري.

Abstract: Algeria is the largest African and Mediterranean country. It is located in the southern seashores of the Mediterranean Sea. Its climate conditions are ranging from relatively wet to very dry which makes it confronted to high levels of rainfall deficits. The future rainfall evolution may be critical for human activities since increased temperatures may further exacerbate droughts and water shortages. In this study, the regional climate simulations RCA4 are evaluated over historical period 1951–2005 and then used to examine the rainfall and temperature projections over the end of the twenty-first century under two Representative Concentration Pathway (RCP4.5 and RCP8.5) scenarios. The historical simulations are evaluated against observations coming from the recent data sets of Climatic Research Unit (CRU). The trends in precipitation and temperature over historical (1951–2005) and projected future scenarios (2006–2060 and 2045–2100) was depicted by the estimation of the shifts of the three main climate zones existing in Algeria (Köppen-Gieger classification): warm temperate climates (C), steppe climate (BS), and desert climate (BW). Comparative to the mean climate zone surface areas derived from observations (1951–2005), all model simulations predict an expansion of desert climate zone at the expense of the temperate and steppe climate zones. This shift seems to particularly increase by the end of twenty-first century (2045–2100) under RCP8.5 scenario.

Key words: Climate change ; Climate zone ; Global warming ; Precipitation and temperature ; Regional climate simulations

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