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المستودع الرقمي للمدرسة العليا للري



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كل الحقوق محفوظة للمدرسة الوطنية العليا للري.

Abstract : Extreme precipitation events can have a significant impact on the environment, agriculture, economy and safety, making close monitoring of their short- and long-term trends essential for the development of effective mitigation and adaptation strategies. In this study, we analysed 16 in situ observation datasets from four different climate zones in Algeria, spanning from 1969 to 2021. The trend analysis was conducted using the original Mann–Kendall test and seven modified tests to eliminate the effects of short-term persistence. Our findings reveal a significant increasing trend of extreme precipitation variability for most stations in the Warm Mediterranean climate zone, except for the Consecutive dry days index, which showed a negative trend for the same zone, while stations in the Cold/Warm semi-arid climate and Cold desert climate (Bwk) zones showed a decreasing trend. Additionally, all index series with significant long-term trends were affected by a significant shift in their means, which was confirmed by both the Lombard and Pettitt tests. However, when we used the modified MPT and the test eliminating the effects of long-term persistence, the significance of the shifts and the trend decreased. Our results suggest that while extreme precipitation events have been increasing in some parts of Algeria; the trend may not be statistically significant in the long-run, indicating the necessity of revisiting and refreshing the findings of previous studies for a more current perspective.

Key words : climate zones ; extreme precipitation ; Algeria

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