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كل الحقوق محفوظة للمدرسة الوطنية العليا للري.

Abstract : This study investigates the effect of autocorrelation on temporal trends and step change on a monthly, seasonal and annual temperatures of six meteorological stations over the North of Algeria. Afterwards, links between the general atmospheric circulation, via six climate indices, and temperature data are examined. The trends in temperatures are analysed using six different versions of the Mann-Kendall approach while, the step changes of the time series are defined using the original Pettitt test and the modified-Pettitt. The Statistical tests have shown an increase in annual temperatures from 0.8 to 0.9°C since the 1980s in the coastal regions and the 1990s on the highlands. This warming most often exceeds 1°C on a seasonal scale, particularly in summer; however, no significant trend is observed in the winter. On a monthly scale, the increase in temperatures is marked between April and October. The analysis of the relationships between six climate indices and average temperatures has shown that the inter-annual temperature variability is most often associated with the East Atlantic oscillation for the entire study area. The winter temperatures are influenced by the Mediterranean oscillation as well as the North Atlantic oscillation. The East Atlantic oscillation is the dominant mode of circulation in spring and summer, whereas in autumn, the temperatures are strongly linked to the West Mediterranean oscillation. However, no significant correlations have been observed between temperatures and the Arctic oscillation and El Nino southern oscillation.

KEYWORDS : Temperature ; Autocorrelation ; Modified Mann-Kendall tests ; TFPW-cu ; Climate indices ; Algeria

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1- <https://link.springer.com/article/10.1007/s00704-021-03862-z>

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