



The influence of geopotential height on temperature variability over Iraq

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The study of the relationships between climatic parameters and geopotential heights is helpful to understand the climate variability. In this study we have analyzed the anomalies of monthly temperature for Iraq related to the geopotential height 500hPa and 200hPa fields. The data used was recorded at 8 stations for Iraq temperature, over the period 1971-2010 and the same period for the geopotential height fields. The regression maps and correlation coefficients analysis was used to show the link between the temperature anomalies (PCs) and the geopotential 500hPa and 200hPa for all seasons. The regression maps emphasized the influence of geopotential height fields on the temperature anomalies by the ridge (high pressure system) that brings the warm air over Iraq area, but it tends to affect by trough in summer season that brings the dry air over this region. Correlation coefficient analysis showed good relationships between geopotential fields with temperature anomalies in winter, spring and summer seasons (0.7, 0.6, 0.6) respectively, but it is less in autumn season (0.4). Also the results showed that the influence of Subtropical jet stream in geopotential height 200hPa is playing important role on climate of Iraq.