

This paper examines the long-term urban modification of mean annual conditions of near surface temperature in Nairobi City. Data from four weather stations situated in Nairobi were collected from the Kenya Meteorological Department for the period from 1966 to 1999 inclusive. The data included mean annual maximum and minimum temperatures, and was first subjected to homogeneity test before analysis. Both linear regression and Mann-Kendall rank test were used to discern the mean annual trends. Results show that the change of temperature over the thirty-four years study period is higher for minimum temperature than maximum temperature. The warming trends began earlier and are more significant at the urban stations than is the case at the sub-urban stations, an indication of the spread of urbanisation from the built-up Central Business District (CBD) to the suburbs. The established significant warming trends in minimum temperature, which are likely to reach higher proportions in future, pose serious challenges on climate and urban planning of the city. In particular the effect of increased minimum temperature on human physiological comfort, building and urban design, wind circulation and air pollution needs to be incorporated in future urban planning programmes of the city.