

El-Sayed Mohamed Abdel-Hamid Robaa

ABSTRACT

Air temperature, vapour pressure and relative humidity differences at fixed hours in urban, suburban and rural districts of Cairo area, Egypt, have been investigated using data for the 1995-2000 period. It has been found that, on the basis of the vapour pressure differences, the urban atmosphere is drier throughout the year except for the months of December, January, May and September. In the afternoon, the atmosphere in the urban area is more humid throughout the year if compared to the suburban area and during the months from October to January in addition to May if compared to the rural area. On the basis of relative humidity, the urban atmosphere is always drier than its surroundings throughout the year, except in the afternoon when the urban-rural differences fluctuated between positive and negative. The urban atmosphere is always warmer than its surroundings throughout the year, except in November when there is a cool island. Relationships between heat island intensity and both vapour pressure and relative humidity differences reveal that local effects can be significant.

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