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Aerosol's impact upon Kuwait's atmospheric temperature

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Influence of aerosol upon atmospheric temperature in Kuwait has been studied during the time intervals: September 1998 to December 1999 and September 2002 to March 2005. Our data are categorized into two groups in terms of the values of the AOT. One group has days with high values of aerosol optical thickness (AOT) measured at 870 nm,$\tau_a(870) \geq 0.65$ (the mean value of AOT during the entire period plus its standard deviation); while the other group has the rest of the days. Superposed epoch analyses of the AOT, Ångström wavelength exponent (α) and water vapor content (WVC), are conducted for days with high AOT. This analysis is extended to include relative humidity (R.H), wind speed (V) and the difference between the daily maximum and minimum temperature values (ΔT). The mean daily value of the Ångström wavelength exponent was the lowest during the days with high values of AOT; while that of wind speed was the highest. This concludes that the aerosol particles during theses days were mostly dust. The wind direction during days with high AOT was mostly northerly and northwesterly passing over Iraq desert. The mean daily value of the temperature difference ΔT was the lowest during days with high AOT. This results in increasing the atmospheric opacity due to the presence of dust.