DETERMINATION OF THE MAIN ATMOSPHERIC FACTOR FOR THE EXPLANATION OF OZONE CONCENTRATIONS

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In this paper, techniques are presented in attempt to explain trends, seasonality and short fluctuations of time series of daily observations of ozone concentration. A methodology is described for separating the components in ozone time series data, namely, short term variations, seasonal and long- term trends variations. This method can be useful in order to provide a better understanding of the underlying physical processes that effect ozone levels. Big part of total variation in ozone can be explained by atmospheric variables, so it implies that the best possible determination of Ozone component controlled by major atmospheric variables is becoming crucial for short term predictions of Ozone levels and determination of part of ozone created by human activities. Multivariate ARMA model for short term component is provided. Detail comparison of solar radiation with other variables (like temperature) is discussed for the examination of their influences on ozone concentrations. Solar radiation appears to be the main factor between all atmospheric variables for the explanation of Ozone concentrations.