**10 Years Ozone Measurements at Stara Zagora – Basic Properties of the Daily Time Series**

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Total ozone time series on day or monthly basis at mid-latitudes show a clear annual cycle caused by the formation of ozone on one hand and dynamic processes on the other hand. To investigate some of the important statistic parameters, the ozone series was detrended and deseasonalised. After that we have determined the central moments of the series. The distributions were analysed by means of histograms and Q-Q plots for different seasons. We have divided in two groups of time intervals – with high and low ozone variations. The group with high variation is December – March (DJFM) and the one with lower variation includes the months May – October (MJJAASO) showing standard deviations of 36 DU and 19 DU, respectively. The reason of the high ozone variation is the frequent change of ozone rich polar air masses with pure ozone air masses from mid-latitudes and the tropics. The constructed Q-Q plots demonstrate distributions, close to the normal one. Based on detrended fluctuation analysis the long term persistence’s were studied. A Hurst coefficient of 0.7 to 0.75 at the scales of one week to about 2-3 weeks, and a Hurst coefficient of approximately 1 for greater scales up to about three months was found. This means, that the variations at these scales are similar to themselves independently from the location or in other words the ozone variations show fractal properties.