EMS Annual Meeting Abstracts
Vol. 12, EMS2015-21, 2015
15th EMS / 12th ECAM

Short term forecast of Total Ozone Content over Bulgaria based on autocorrelation analysis

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In this study, is presented the auto-regressive method for short term forecast of the Total Column Ozone (TOC) over Bulgaria based on Wiener-Hopf theorem. This is a new method used for short term forecast of ozone. The statistical characteristics of short term variations has been examined and also has been defined their average time autocorrelation function. Autocorrelation function is necessary for the solution of the problem by using the method of least squares best fit. It is presented the accuracy of the method simulating the forecast for period of time from 1996 to 2014 based on synthetic TOC data row from ground and satellite measurements. The main aim of the auto-regressive method for short term forecast on the basis of monitoring of the ozone layer (related with biological harmful ultraviolet radiation of the Sun, which has an effect on the human health and life) is to be made risk-based warnings for the people if it is necessary.