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Long-term variations of CO total column over Moscow and its outskirts

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The results of the CO content spectroscopic measurements over Zvenigorod and Moscow for period from 1972 to 2011 years are presented. The rural CO TC for cold seasons decreases by about 0.2% per year in 1972-2011 years. The CO TC values for warm season in this time period haven't changed. We characterize the 2008-2009 as "the years of the rural CO TC local minimum" over the past decade. Trajectory analysis of long-term data allowed us to estimate the effect of urban sources influence on the CO rural area pollution as being small, i.e. on a level of 3-5% of the totality of measurements. The isolation of cases of city impact on rural CO data allowed us to obtain the averaging season rural CO TC variations and to compare their with background CO variations in another rural sites.
The rate of decrease in the CO TC urban part was estimated as 0.3 % per year for 1986-2011 in spite of more than quintuple increase of the motor-vehicles number in Moscow. This estimate was due to anomalously low yearly TC for 2007-2009 years. A decrease in high daily TC values along with an increase in low and medium values for 2007-2011 was revealed in a contrast to previous years of observing.