



Mesoscale features of ozone dynamics in the atmospheric surface layer nearby Tomsk

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V.E. Zuev Institute of Atmospheric Optics has started continuous monitoring of the air composition, including surface ozone concentration, on September 1989 in the framework of TOR Project (Tropospheric Ozone Research) of the EUROTRAC Programme. At present, continuous measurements are carried out at four sites, which are located 5, 50, and 60 km from one another and have the following coordinates: TOR-Station – 56°28/41'N, 85°03/15'E; Berezhrechka site (BRZ) – 56°08/56'N, 84°19/58'E; Fonovaya Observatory (FO) – 56°25/07'N, 84°04/27'E; and Base Experimental Complex (BEC) – 56°28/49'N, 85°06/08'E. Concentration of ozone at TOR-Station, Fonovaya Observatory, and BEC is measured with a JSC OPTEC 3.02 P chemiluminescence ozone analyzer, and with a TEI Model 49C UV photometric ozone analyzer at Berezhrechka site. All analysers are periodically calibrated by means of a JSC OPTEC GS-024 ozone generator.

Analysis of the data obtained to date showed that the mean annual behaviour of the ozone concentration observed at Berezhrechka site and BEC differs from one observed at two other sites. At that, this difference is not caused by their location features, because in this case seasonal variation should be similar at BRZ and FO, on the one hand, and at BEC and TOR-Station, on the other hand. The spring ozone maximum at three stations (FO, BRZ, and TOR-Station) was observed in April, at that ozone concentration at BRZ was two times higher. Maximum at BEC occurred in May and was most likely caused by phytoncide emission from deciduous trees and herbage. Also an unusual fact was found that at BEC and BRZ sites distinct minima of the surface ozone concentration were observed in summer.

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