

## **Some results of parallel observations of the surface concentration of ozone at two observation points in the Kola peninsula**

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In 2002, there were carried out parallel observations of the surface ozone concentration at two observation points in the Kola peninsula: Lovozero geophysical observatory and PGI testing range in Apatity. In spite of the fact, that the latter is located actually in the suburban zone (2 kms from the urban zone), it was suggested, that its vicinity from industrial objects should in some way influence the values and the daily variation of the surface ozone concentration. However, according to the observation results there were no substantial distinctions found. By its absolute values, the ozone concentration does not differ significantly between the two above observation points. The correlation coefficient for mean hourly ozone concentrations in those areas makes up 0,90, while it is somewhat higher for the day-time values and a bit lower for the night-time ones, which is stipulated by somewhat lower values of ozone in Apatity in the night-time. The ratio of ozone maximum concentrations in the day-time hours to the minimum ones in the night-time hours both in Lovozero and Apatity does not exceed 1.5 during all the months. The same are the duration periods with ozone maximum values during a day. All this taken together testifies of the unique mechanism of formation of surface ozone field in Lovozero and Apatity. While taking into account the fact, that Lovozero is a «quasi-background» area, as well as, that ozone is very sensitive to the air pollution, one should admit the influence of Apatity town industrial zone does not spread as far as even suburban districts.

The measurements' results showed the need for taking into account the specific features of the location of measurement points with regard to the values and the daily variation of the surface ozone concentration. So, for example, the lower values of ozone in the night hours in Apatity can be entirely explained by the specific features of the measuring site location: it is located on a wide forest clearing, where a stronger inversion is formed during the night hours on account of a weaker turbulent exchange. Another specific feature of this site is its location on the slope, while the inclination magnitude (1:150) under favorable synoptical conditions is more than sufficient for formation of the flow wind in the night hours. The breach of the condition of the cold air equilibrium on the clearing, which is located on a slope, results in the formation of so-called air avalanches, which is manifested in the sharp intensification of turbulence and in a short rise of ozone concentration.

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