

Daily variation and values of the surface ozone concentration in homogeneous air masses

V.I.Demin¹, M.I.Beloglazov¹, N.F.Elansky²

1 - *Polar Geophysical Institute, Fersman str.14, 184209, Apatity, Russia, Demin@pgi.kolasc.net.ru*

2 - *Obouchov Institute of Atmospheric Physics, Pyzhevskii per.3, 109017 Moscow*

When analyzing the daily variations of the surface ozone concentration (SOC) in Lovozero and Apatity one discovers a two-three day periodicity. The coincidence of this 2-3 day period of variations with average duration of elementary synoptic process is not accidental: the synoptical analysis shows, that dates of sharp variations goes of the SOC always coincide in time with replace of air masses.

There was also checked the behavior of the SOC at the PGI testing range, located 2 km away from Apatity in summer, in a homogeneous air mass, in a low gradient pressure field at the average wind velocity in the bordering layer not more than 6 m/s. In the conditions of continuous lighting (Polar day) this synoptic situation creates, definitely the most favorable conditions for photochemical reactions and ozone generation, which should have been manifested through SOC increase from day to day, as a result of its accumulation in the ground layer. However, even in these ideal conditions, no events with signs of photochemical accumulation of ozone were found.

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