



## **On the contribution of the turbulent mixed in the ground-level ozone balance in the Kola Peninsula (Russia)**

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It is known from the vertical ozone sounding

/ [http://www.fmi.fi/research\\_atmosphere/atmosphere\\_4.html](http://www.fmi.fi/research_atmosphere/atmosphere_4.html) / that the ozone concentration nearly always grows with height from the ground to the upper border of the boundary layer. An intensive turbulent mixing causes smoothing of the vertical ozone profile within the mixed layer, so that the maximum ground-level ozone concentration is close to that at its upper boundary.

It is evident that the maximum ozone concentrations in the surface layer, related solely to the turbulent mixing, should not exceed those at the upper boundary of the mixed layer.

The maximum altitude of the mixed layer above Lovozero (67.59N, 35.03E, the Kola Peninsula) has been determined from the dynamical model of the boundary layer. The nearest ozone sounding station (67.4N, 26.7E, Sodankyla, Finland) is 350 km to the south-west from Lovozero. In this case, the monthly average ozone concentrations at the upper boundary of the mixed layer are considered to be equal to those in Sodankyla.

It is discovered that the maximum monthly ground-level ozone concentrations in the Kola Peninsula do not exceed the average ozone concentrations at the upper boundary of the mixed layer. This is an evidence of ground-level ozone field formation by the turbulent mechanism (a supply of ozone into the surface layer is by the eddy transport from the upper parts of the boundary layer, which is more enriched with ozone).