



## **Monitoring of singlet oxygen in the lower troposphere and processes of ozone depletion.**

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The processes of ozone depletion in the atmosphere are widely discussed now in a connection with the problem of a global climate changes. It is known fact that photolysis of ozone in the upper atmosphere is the source of metastable molecules of oxygen. But, metastable molecules of oxygen can be formed as a result of photo initiated heterogeneous oxidation of molecules adsorbed on the surface of natural aerosol particles. During the outdoor experiment, we observed a formation of Singlet oxygen ( $^1\Delta_g$ ) at concentration level of 2 ... 5 ppb when ice crystals have been exposed to the sun light. In experiments, we used Analyzers of Singlet oxygen and Ozone (produced by JSC "OPTEC") that utilize solid-state chemiluminescence technology. We assumed that the singlet oxygen is formed in the active centers on the surface of ice crystals in the presence or absence of anthropogenic pollutants in the atmosphere. Identified efficiency of heterogeneous reaction of  $O_2$  ( $^1\Delta_g$ ) formation suggests the importance of the additional channel  $O_3 + O_2$  ( $^1\Delta_g$ )  $\rightarrow$   $2O_2 + O$  ( $^3P$ ) of atmospheric ozone removal comparable with other well known cycles of ozone depletion.