MAIN ION COMPONENTS OF PLASMA IN THE LOWER IONOSPHERE [[1]](#footnote-1)\*)

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Interest in the composition of the ionospheric plasma at altitudes of 100-200 km has increased recently in connection with the problems of atmospheric chemistry and the possibility of creating spacecraft for low-lying altitude trajectories.

This requires knowledge of the plasma parameters around and inside the aircraft. In this regard, the calculations of the ionization and adhesion constants were performed based on the solution of the Boltzmann equation for the EEDF at an altitude of 100 - 200 km, depending on the parameter E / N, which can be realized near the aircraft antennas and under external influence of Harp-type radio wave sources. Range of constant calculations E / N =100-10000 Td/

The calculations of the altitudinal distribution of the main ions N2+, O2+, O+, NO+ were also performed based on a system of chemical equations and rate constants of processes for the ionosphere from V.A. Telegin, which are in qualitative agreement with rocket measurements. The difference between the results of calculating the composition and measurements are connected with the lack of reliable data on the rates of production of N2 +, O2 +, O +, NO + ions in the reactions of excitation by fast particles and radiation.

1. \*) [abstracts of this report in Russian](http://www.fpl.gpi.ru/Zvenigorod/XLIX/Pt/ru/GD-Bychkov.docx) [↑](#footnote-ref-1)