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The peculiarity of the profile restoration of an electronic concentration of the Earth ionosphere by radio translucence method

V.M. Smirnov, E.V. Smirnova

Institute of a Radioengineering and Electronics of the Russian Academy of Science

141190, Fryazino, sq. B.A. Vvedenskogo, 1

vsmirnov@ire.rssi.ru

High technical perfection of satellite systems GLONASS and GPS has led to that areas of their applicability have surpassed the initial purposes of the decision of navigating tasks. Now they allow to solve not only approximate on methodology of the tasks of precision space navigation and a geodesy, but also a number of others, in particular, tasks of remote radiophysical sounding of an ionosphere.

Alongside with traditional application of global navigating satellite systems for measurements of the total electron content the radio translucence method allows to determine the electron concentration distribution of an ionosphere in near-real time in any place of globe on observation from one ground point that is rather important for the removed and hard-to-reach areas. Discriminating feature of the given method is that its realization does not demand the equipment of special points of navigating signals registration.

The simulation results have shown, that average squared error of determination of a high-altitude structure of electron concentration of the Earth ionosphere does not exceed 0,02 NU. The divergence between model value in a maximum of layer F2 of an ionosphere and restored value makes 0,014 NU. Results of comparison have shown, that the restored structure of altitude distribution of electron concentration of the Earth ionosphere will well enough be agreed with digital sounder data up to height

of a maximum of layer F2.