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Spatial Structure of Large-Scale Plasma Density Perturbations HF-Induced in the Ionospheric F 2 Region

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Abstract

© 2016, Springer Science+Business Media New York. We consider the experimental results obtained by studying the large-scale structure of the HF-disturbed ionospheric region. The experiments were performed using the SURA heating facility. The disturbed ionospheric region was sounded by signals radiated by GPS navigation satellite beacons as well as by signals of low-orbit satellites (radio tomography). The results of the experiments show that large-scale plasma density perturbations induced at altitudes higher than the F2 layer maximum can contribute significantly to the measured variations of the total electron density and can, with a certain arrangement of the reception points, be measured by the GPS sounding method.

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