REGIONS OF ENHANCED ELECTRON CONCENTRATION IN THE AURORAL ZONE OF THE EARTH MAGNETOSPHERE

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Abstract

The results of studying the electron concentration in the auroral zone of the Earth magnetosphere, based on the investigation of plasma–wave measurements aboard the Prognoz–5 satellite, are presented. The signal was received simultaneously by dipole and loop antennae in the frequency range from 50 to 1000 kHz. Regions with enhanced electron concentration (3000 cm$^{-3}$ ≤ $N_e$ ≤ 10000 cm$^{-3}$) were found for the heights 1200–2500 km, $L_o$= –70° to –80°, MLT from 15h to 22h. Lack of correlation of $N_e$ enhancements in the auroral zone with the geomagnetic activity and a better correlation of location of $N_e$ enhancements with the geographic, not geomagnetic, latitude give evidence for an influence of the solar ultraviolet radiation.

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