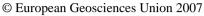
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Multi-satellite observations of the ionospheric structures

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Data of electron density Ne and temperature Te from the Cosmos-900 satellite, the Intercosmos-19 satellite topside sounder data are compared with NmF2, Ne and helium ions from the ISS-b satellite, with the global picture of the auroral electron precipitation from the DMSP, TIROS satellites, and with distributions of large structure irregularities probability from GPS radio occultation experiments. These multisatellite data let us investigate the position variations: of the dayside cusp, the equatorial boundary of the diffuse auroral precipitation (DPB), the main ionospheric trough (MIT), the day-time trough and ring ionospheric trough (RIT), and the light ions trough (LIT). The variations of NmF2, Ne, light ions, and temperature of electrons in the high-latitude ionosphere for the different local time sectors were analyzed also. The high-latitude features and the equatorial ionosphere response to the different solar activity, geomagnetic conditions and seasons are shown.