



Analyses of the geomagnetic storm of October 11, 2008 using combined COSMIC, ground-based digisondes and GPS network data

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The electron density profiles retrieved from the European digisondes and COSMIC radio occultation (RO) measurements were analyzed within the case-study of the geomagnetic disturbance on October 11, 2008. For graphical representation of the observed anomaly, global electron density maps were derived on the base of globally distributed COSMIC RO profiles. Also in the given investigation, the International GNSS Service (IGS) Global Ionosphere Maps were used.

The distinctive feature of this moderate geomagnetic storm was the short duration of the ionospheric effect. Over the European region, a strong short-term (about 2 hours) positive effect reached a factor of 2 relative to the undisturbed conditions. This positive effect was observed distinctly in GPS TEC variations, changes of the COSMIC electron density profiles and modification of the vertical structure of ionosphere derived from digisoundes.