



Asymmetry of TEC storm signatures in conjugate hemispheres at solar maximum

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Global GPS-derived ionospheric maps, GIM, of the vertical total electron content, TEC, have been used for producing W index maps of the ionosphere-plasmasphere state. The degree of perturbation at each grid point of a map is pertained to W index of fixed level of TEC activity equal to 1 or -1 for the quiet state, 2 or -2 for the moderate disturbance, 3 or -3 for the moderate ionospheric storm, and 4 or -4 for intense ionospheric storm, with the sign "+" for TEC enhancement or '-' for TEC depletion. Planetary distribution of W index at 600 grid points of a map (latitudes 60S to 60N in step of 5 deg., longitude 180W to 180E in step of 15 deg.) is complemented in the present study by W index derived at magnetic conjugate points (C.P.) of opposite hemisphere. Planetary ionosphere-plasmasphere storms deduced from W index maps and provided online at <http://www.izmiran.ru/services/iweather/storm/> are analyzed for the solar maximum (1999-2000). Asymmetry of TEC enhancement/depletion is obtained for nighttime at conjugate hemispheres during the peak of TEC storm coincident with intense magnetosphere ring current Dst storm. Results suggest a link between the negative and positive storm effects in the conjugate hemispheres useful for modeling and forecasting of the ionosphere-plasmasphere storm signatures.