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On differences of magnetic storm effects on ionosphere above neighbouring locations

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The paper is focused on cases of different ionospheric reaction above a few neighbouring European and South African locations to disturbances induced by CIR/HSS-related storms. Most of storms involved in the analysis occurred within the 23rd and 24th solar cycle. We analysed variability of the F2 layer critical frequency foF2, peak height hmF2 and GPS TEC values for the entire storm period. Both positive and negative deviations of foF2, hmF2 and TEC have been obtained independently on season. Observed differences in ionospheric effects (mainly in positive effects) for the individual events and neighbouring locations are well pronounced both in foF2 and hmF2. We considered an impact of several factors (e.g. intensity of geomagnetic storm, local geomagnetic situation, and season, difference between geographic and geomagnetic coordinates etc.) with aim to identify the “main players”.