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Disturbance in the Tropical Ionosphere and Earth Magnetic Field Measured on the Magnetic Equator Caused by Magnetic Storms

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The focus of the present work is to monitor the disturbances in the equatorial F region caused by magnetic storms and comparatively to observe possible effects caused by the storms in the earth magnetic field measured on the ground, aiming to establish the events time occurrence order. The motivation for this work is due to the diversity of phenomena of scientific interest, which are observed in this region and also are capable to disturbance the transionospheric communication. The monitoring on the ionospheric plasma variation in the F region during and after the magnetic storms can generate indications of magnetosphere - ionosphere coupling effects. For this study we have used F region parameters measured by digital sounder installed at the Observatório Espacial de São Lú (2.33° S; 44.20° W; -0.5° DIP): foF2 (critical frequency of F layer), hmF2 (real height of electronic density F layer peak) and h'F (minimum virtual height of F layer). For monitoring the disturbance in the magnetic field we have studied the H- and Z-component of the Earth magnetic field measured by magnetometers installed in the same site. The results are presented and discussed.

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