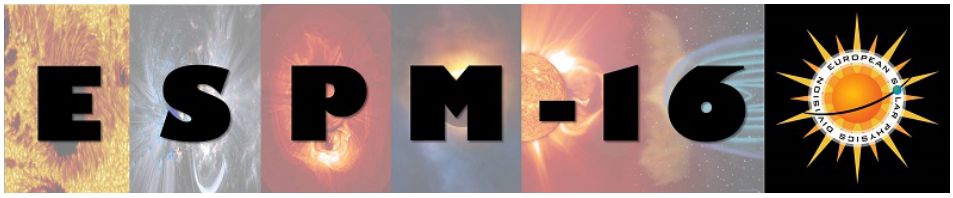

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Variations of field-aligned currents and ionospheric trough during September 2017 geomagnetic storm

Thursday, 9 September 2021 11:13 (13 minutes)

Geomagnetic storms are the temporary variations of the Earth's magnetic field, induced by the coronal mass ejection (CME) or the high-speed solar wind stream (HSSWS) with a magnetic field directed oppositely to Earth's. The powerful energy injection into the magnetosphere through the magnetic reconnection during such events directly affects the auroral region of the Earth's ionosphere, where energetic particles precipitation, auroral oval expansion, and variations of plasma density and field-aligned currents intensity can be observed.
The September 2017's storm was a strong and complex geomagnetic event during the 24th solar cycle minimum and resulted in dynamic changes in Earth's magnetosphere-ionosphere-thermosphere (M-I-T) system. The aim of our study is to present an analysis of the relationship between plasma density, solar energetic particles (SEPs), the intensity of field-aligned currents (FACs), and variability of the ionospheric trough position during the geomagnetic storm of 7-8 September 2017. The study is based on Swarm and DMSP satellites data.

Student poster?

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