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The loss of 38 out of 49 Starlink satellites due to a minor geomagnetic storm (February 2022) is a perfect example highlighting the dire need for understanding the dynamics of the Ionosphere and Thermosphere (I-T) system during the main and recovery phase of a geomagnetic storm. While it is recognized that the neutral density composition and electron density in the I-T system undergo enhancements during and after a storm - causing variations in satellite drag, the extent of their variation with respect to different storm magnitudes remains ambiguous. This work investigates the Thermospheric – Ionospheric response to the August 2018 geomagnetic storm. The energization of the upper atmosphere due to high-speed coronal streams and a minor coronal mass ejection which triggered this storm, is analyzed with respect to plasma drifts, neutral wind disturbances, and electron density changes. Using the data from Constellation Observing System for Meteorology Ionosphere and Climate (COSMIC-1) satellite, the electron density profiles from 24th August to 27th August 2018, are investigated to establish the I-T response, the extent of plasma depletion and the role of the ionospheric disturbance dynamo in the I-T response during the main and recovery phase of the storm.

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