

Dear Editor,

The manuscript has been improved. The discussion of the physical processes has been significantly extended. However, it still contains a few major and several minor issues/typos that must be addressed before publishing.

Best regards

**Major issues:**

P.5 L.1 Change “The GEC is the total number of electrons present in the ionosphere at the fixed altitude of about 450 km” to “The GEC is the total number of electrons present in the near-Earth space environment”

P.8 L.4 Change “quiet daily variations in blue which are calculated by subtracting the quiet time variations from the value itself. The quiet time variations are computed” To “quiet time daily variations in blue. The quiet time variations are computed...” The quiet time daily variations are computed by averaging the quiet time data, but not subtracting.

P.8 L.23 The figure 4 does not contain “contour plots”, these are vTEC values color coded. I believe, Matlab surf function was used. Please correct the description.

P.10 L.14 Please clarify where exactly on the plot a reader can see the first (1:08 UT, September 8) of H component at MBO to be strongly negative. Also please make sure ‘however’ must be used, as both the first and the second statement say: “is strongly negative”. From the plot provided, it can not be read the described details. A solution might be to indicate the peaks (“dips”) with the arrows on the plot.

P.11 L.4 From the Figure 5, it can be clearly seen that H component at GUA drops below -150 nt (around 170-180), that is inconsistent with what is written. Please clarify.

**Typo/Corrections:**

Figure 4: It would be logical to have Pacific sector coming first, as the increase (a peak) in TEC is moving rightward, according to the local time of the sector.

Figure 5: The y label has Sh, while the legend shows Sq. Please harmonize them.

Figure 5 Title: Change “the ionosphere disturbance current” to “the variations due to disturbed ionospheric currents”

Everywhere: remove space between  $\Delta$  and parameter name, e.g. “ $\Delta$  REC” – “ $\Delta$ REC”

P.2 L.18 Change “International Ground Station (IGS)” to “International GNSS Service (IGS)”

P.4 L.1 Change “three different longitudinal sectors” to “four different longitudinal sectors”

P.4 L.24 Change “among them the AE index, the Ap index, the Kp index and SYM-H” to “among them are AE, Ap, Kp and SYM-H indices”

P.4 L.27 Add space into “Data:The” – “Data: The”

P.4 L.27 Change “International GNSS Service Global Ionosphere Map” to “IGS Global Ionosphere Map (GIM)”

P.4 L.27 Change “data that are available in the standard IONEX format” to “data available in IONEX format”

P.4 L.28 Remove “; i.e., Crustal Dynamics Data information system”

P.4 L.29 Remove “These IONEX files contain the vTEC data for the entire globe. For any time, the vTEC data can be obtained from IONEX files at the time resolution of 2-h.” As GIM maps with 15-min time interval are used in the study.

P.5 L.2 Change “the vTEC values” to “vTEC values”, change “UPC-GIM” to “UPC GIM”

P.5 L.5 Change “of a certain GIM cells.” to “of a certain GIM cell.”

P.5 L.6 Change “is about” to “is”

P.5 L.6 Change “UPC-GIM” to “UPC GIM”

P.5 L.17 Add space into “observatories.In” - “observatories. In”

P.5 L.23 Change “current Cole (1966)” to “current (Cole, 1966)”, change “It can be calculated” to “It can be estimated”

P.5 L.23 Change “.” in the formula to the multiplication sign “.”

P.6 L.2 Change “.” in the formula to the multiplication sign “.”

P.6 L.2 Define  $\Delta H$

P.6 L.7 Remove “mainly”

P.6 L.10 Remove “3 h”

P.6 L.11 Change “lead to a minor geomagnetic storm” to “lead to minor geomagnetic storms”

P.6 L.23 Change “in northward” to “is northward”

P.7 L.2 Change “The IEF is the Ey component” to “The Ey component of the IEF”

P.7 L.6 Change “CME1,” to “the first CME”

P.7 L.9 Change “CME2,” to “the second CME”

P.7 L.10 Remove “for 3 h”

P.8 L.23 Change “IGS-GIM” to “UPC GIM” (if these were UPC GIMs).

P.9 L.5 Change “magnetically equatorial region” to “magnetic equator region”

P.9 L.19 Change “An enhancement in the vTEC particularly, in the crests regions of the EIA are” to “An enhancement in the vTEC, in particular in the crests regions of the EIA, is”