

Ann. Geophys. Discuss., author comment AC2
<https://doi.org/10.5194/angeo-2022-18-AC2>, 2022
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Reply on CC1

Rasim Shahzad et al.

Author comment on "Latitudinal variations of ionospheric-thermospheric responses to Geomagnetic Storms from Multi-Instruments" by Rasim Shahzad et al., Ann. Geophys. Discuss., <https://doi.org/10.5194/angeo-2022-18-AC2>, 2022

Reviewer 2

The paper entitled 'Latitudinal variations of ionospheric-thermospheric responses to Geomagnetic Storms from Multi-Instruments' presents important results for the storm-time ionospheric variations. These variations are clearly explained throughout the text. The paper is recommended for publications after the below changes.

Dear Reviewer thanks for your suggestion and useful comments. We have tried to improve the discussion as per your comments.

Title: replace 'responses to Geomagnetic' to 'responses to the Geomagnetic'. Done

Abstract. Show in abstract in a line the aim of this paper. Done

Introduction: uniform the reference style in the text. Where ever cite in the text. Done

Line 51-53. What seasonal changes and what is the change? Enhancement/depletion

Ans: According to Stankov et al. 2010 and Gao et al. 2013 geomagnetic storm induce variable variation at different latitude depicting more negative storms in summer and positive storms in winter depending upon the local time of a specific region. (Stankov, S.M., Stegen, K., Warnant, R., 2010. Seasonal variations of storm-time TEC at European middle latitudes. *Advances in Space Research*. 48:1318–1325), (Gao, Q., Liu, L., Zhao, B., Wan, W., Zhang, M., Ning, B., 2008. Statistical study of the storm effects in middle and low latitude ionosphere in the East-Asian sector, *Chinese Journal of Geophysics*. 51:435–443)

Page 2. Line 60. Replace 'during storm conditions' with 'during the storm conditions'. Done

Page 4. Line 99-100. Show you aim also.

Ans: it is already mentioned in line 103-105.

Data and methods.

Change all the data links. Whether properly added. And working?

Ans: All the links are working.

Page 4, line 118. Add reference for Kp, 0-9. Done

Ans:

Page 5. Line 127. Replace 'Fig. 1' by 'Figure 1' and change all Fig. with Figure in the text. Done

Check all equations properly and their numbers also Done

Fig. 1. The geomagnetic line must be black or red. Done

Ans:

Explain more Fig 10 and 11 in the context of storms different phases and their local or UT hours. Done

Ans:

Page 10 line 223. Insert here the explanation of both the storms in which solar phase. Done

Ans:

Check all references to correctly cited. Done

Conclusion. Add one bullet on the equatorial ionospheric enhancement and its relation with EEJ and PPEF. Done

Check all references in the list to be properly added. Done

Please also note the supplement to this comment:

<https://angeo.copernicus.org/preprints/angeo-2022-18/angeo-2022-18-AC2-supplement.pdf>