The manuscript presents an observational study of the ionospheric TEC precursors of the 12 November 2017 Iran-Iraq Border Earthquake. The study analyzed the TEC data from IGS stations surrounding the epicenter and the CODE GIMs using Short-time Fourier Transform method and a running median process. The study also analyzed space weather data to determine the contribution of geomagnetic activities to the TEC anomalies before the earthquake. The outcome of the study showed two groups of TEC anomalies with different causes: the anomalies 1-6 days before the earthquake were caused by a geomagnetic storm, while the anomalies 8-9 before the earthquake were related to the earthquake.

I find the manuscript fairly well-written in general. The study delivers interesting science results and would be inspiring to the community. In particular, the study presents a very nice demonstration of separating the space weather contribution from the earthquake contribution to TEC anomalies. However, there are certain ambiguities in methodology and results that need to be addressed, which are listed below.

- Thank you for your favorable comments, your time and consideration.

1. The relation between the TEC anomalies on November 3-4 and the earthquake is weak given the evidence shown in the manuscript. The authors claim that the TEC anomalies on November 3-4 are earthquake precursors because of quiet space weather, local dispersion and proximity to the epicenter. Instead of quiet space weather, Figure 3 shows a mild geomagnetic activity on November 3-4, with elevated Kp comparing to days immediately before and after. Is it possible that the TEC anomalies on November 3-4 are due to this mild geomagnetic activity? To exclude this possibility, the authors have shown a) the localized anomaly on GIMs of November 3-4, and b) the negligible variations of prompt penetration electric fields on November 3-4.

For a), GIMs are interpolated GNSS TEC maps. It is not clear how many and where the GNSS stations are in generating the GIMs. Are the five IGS stations surrounding the epicenter included for the GIMs? To directly demonstrate that the TEC anomalies on November 3-4 are localized, why not show the lack of anomalies for IGS stations further away from the epicenter (outside of the earthquake preparation area), using the exact same methodology for analyzing the existing 5 stations? A few more panels on Figure 5 for other stations would say it all.

- We analyzed the TEC data of two stations outside the earthquake preparation area and presented the results in Figure 5. In addition, we revised Figure 1 and some sections in the article in accordance with the new situation. The revised version of Figure 1 and Figure 5 are in below.
- In addition, we explained the relationship between GNSS TEC and GIM TEC in the first part of the reply to Reviewer#1. Please check it.
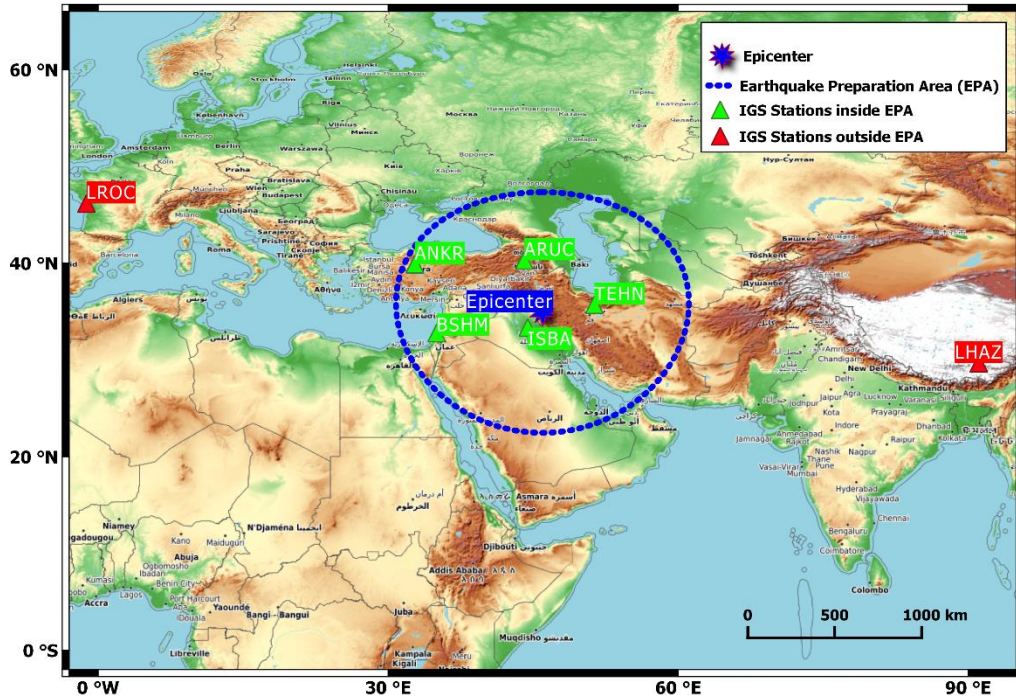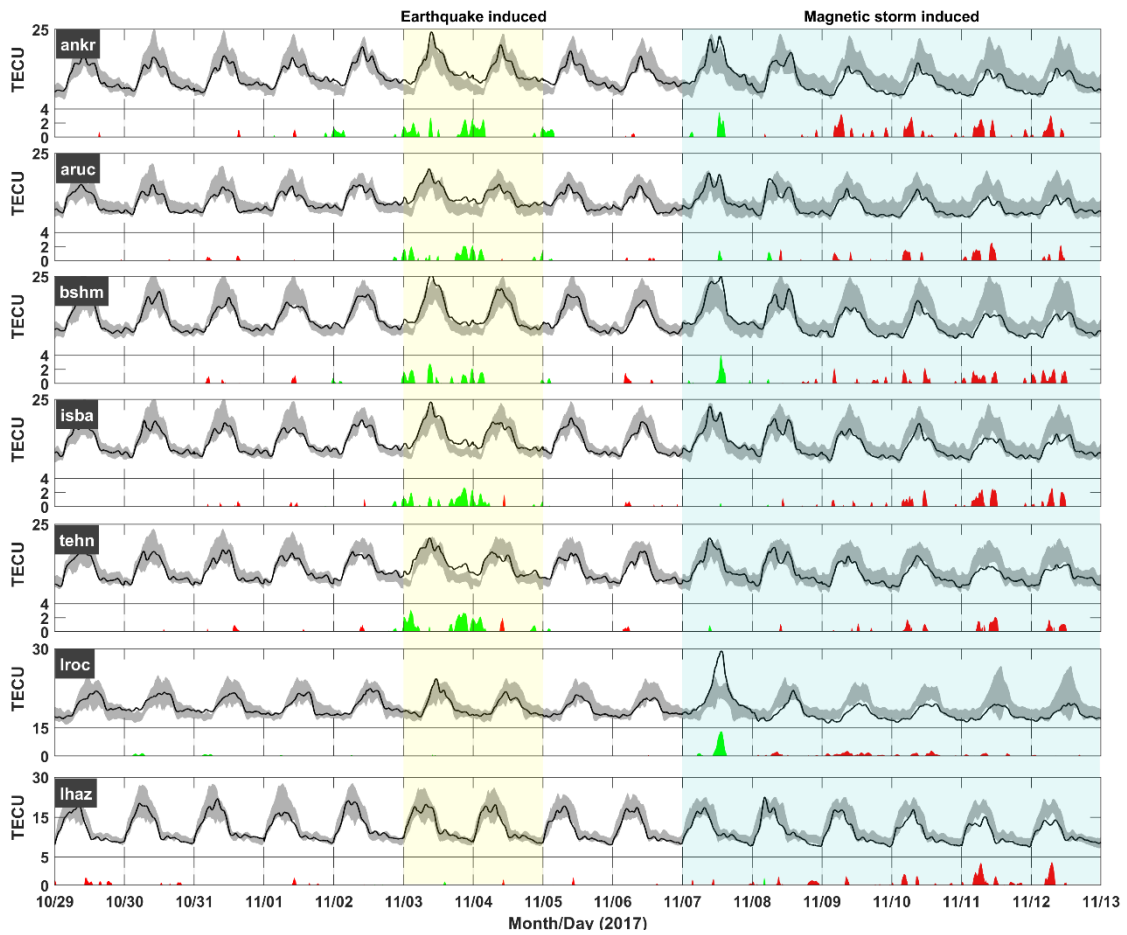
Figure: Revised version of Figure 1.

Figure: Revised version of Figure 5.

For b), I could not find how the PPEFs are calculated and what is the "Quiet" curve in Figure 10. Does the variation of PPEFs correlate with the TEC variations due to space weather? More explanation would be helpful.

- We included the explanations about PPEFs as a separate section (Section 3.4 with a headline "The Prompt Penetration Electric Fields (PPEFs) Variation in Abnormal Days") with the recommendation of Reviewer#1, and made the first paragraph of this section according to your recommendation as follows.

- *"The PPEFs is the prompt reaction of the equatorial zonal electric field to solar wind alteration, which is component of the interplanetary electric field (IEF) and the equatorial zonal electric field (Manoj et al., 2008). The penetration part of PPEFs (green line in Fig. 10) is calculated by the interplanetary data which is provided by the OMNI web site. Also, the quiet (climatological) part of PPEFs (violet line in Fig. 10) is equal to the 81-day moving average of F10.7 cm solar flux (Manoj and Maus, 2012)."*

2. Have the authors look into the wave characteristics, for instance the wave period/frequency and duration of the TEC anomalies on November 3-4? Are they similar to the characteristics of earthquake TEC precursors found in previous studies? This would better support the argument that the TEC anomalies on November 3-4 are the earthquake precursors.

- I applied the STFT method to the TEC time series for the first time in the article related to Van EQ and achieved successful results similar to the results of Iran-Iraq EQ. We compared the success of the STFT with the classical method (running median). The results are consistent. The STFT only shows anomalies in the TEC time series. As known, more analysis is needed as was done in the study to establish the relationship between the anomalies and the earthquake.

"Şentürk, E., Livaoğlu, H., Çepni, M. S. (2019). A Comprehensive Analysis of Ionospheric Anomalies before the M w 7· 1 Van Earthquake on 23 October 2011. The Journal of Navigation, 72(3), 702-720."

3. Line 15: molecules are separated into positively charged particles and electrons?

- To make it more understandable, we revised this section as follows: *"When molecules are exposed to light energy emitted from the sun, their components are divided into atoms, which are electrons and a compact nucleus of protons and neutrons. Negatively charged electrons effect the propagation of electromagnetic signals traveling between space and earth."*

4. Second paragraph of Introduction: some of the references are for ionospheric anomalies during and after earthquakes, which has very different physical mechanisms from the earthquake precursors. I noticed that referee #1 has also pointed this out. I hope the authors successfully address this in the paper revision.

- We removed the paragraph from L24 to L29 which is including a lot of citation related to co-seismic and post-seismic (acoustic-gravity driven disturbances in the ionosphere) activity.

5. Line 46 and Line 79: GIM and STFT are not defined in the main text.

- We defined them in the new version of the manuscript.

6. Line 95: Any references for CODE GIM?

- A citation added for CODE GIM at L100.