

The revision of the manuscript “Ionospheric Anomalies Associated with Mw7.3 Iran-Irak Earthquake and a Moderate Magnetic Storm”

After the first revision, the manuscript was substantially improved, clarifying data processing methodology and providing additional insight on the validity of outcomes made. I believe that the manuscript has already a potential to be published, though I think some minor clarifications should be made, along with technical corrections.

Minor suggestions:

1. Please, indicate which GNSS stations are used in CODE GIM maps. This question is related to the previous revision (Major comment 1). In Figure 1 of the “answers to reviewer” you showed comparison of CODE GIM and IGS, but does CODE use the same stations as chosen from IGS or different ones? If these are the same stations, what is a reason to provide the analysis based on CODE GIM interpolated maps if RINEX data for the same stations are available and discussed in the article? Also, for Figure 1 in “answers to reviewer” I cannot understand how the BIASes were calculated. There are definitely some peaks close or even reaching 2 TECu, which is comparable with the amplitude of the detected anomaly. For example, the negative peak for difference plot for station ANKR reaches ~2 TECu at 11/04. Please, clarify these points in the final text.
2. Please, indicate what accuracy of v TEC (absolute value) you expect in your calculations and how it was estimated. Also, as I wrote it earlier, Forbes et al., 2020 and Mendillo et al. 2002 do not discuss that TEC cannot exceed 30%, as it is now stated at L245. You may want to add this clarification to the text. For Figure 6, I would also suggest showing that 30% is consistent with no-abnormal conditions for the whole time period as shown in Figure 4. You may consider merging Figure 6 with Figure 3 or 4.
3. Why in Figure 4 I do not find the same strong negative anomalies 11/09-11/13 as in Figure 5? Also, some positive anomalies are shown for stations BSHM and ANKR at 11/07, but I can't find them in Figure 4. Generally saying, is there consistency between station analyses and CODE GIM maps? If not, what is a reason for inconsistencies and which data are better (this is some part related to equation 1 above)?

Technical suggestions:

4. Please, consider another word in the first sentence of the abstract rather than “popular”.
5. 1st sentence of first paragraph – it is mentioned that the ionosphere is a dispersive layer. Dispersive for what? If you mean electromagnetic signals – please indicate, otherwise the sentence sounds incomplete.
6. Second sentence – what about ions? Please, consider rewriting this sentence.
7. 5th line – “to the Earth”.

8. 5th line – I would write “To the first order, the degree of effect....”
9. 6th line – “free electrons”?
10. 8th line – please provide some references to daily, 27-day etc variations, I think that may provide reader better background.
11. Near 40 – Please clarify what is meant by “TEC data obtained from Precise Point Positioning”. PPP – approach for determination of static and kinematic point positioning. I think the sentence can be rewritten.
12. Introduce TECU prior using it (or at the first mentioning).
13. After 65 – “block where the air was **ionized**”
14. Is there any quantitative analysis of ionospheric/atmospheric changes due to ionizations? Although such coupled processes may take place, it is not clear to what extent they are important and whether they can produce detectable changes in TEC to several units or not. I suggest considering clarifying this in the text if no references exist, or give a concluding remark at the end of the manuscript on the need for further quantifications of processes.
15. L85 – Please, reference the source of information on focal mechanism.
16. L110 – Please, consider writing for vTEC “free electrons along the line-of-sight between the center of the Earth and GNSS satellite” or similar. “Free electrons perpendicular to the earth” sounds not accurate.
17. L120 – you first mention that TEC can be calculated with at least two different frequencies. In the next sentence you write that TEC is obtained from single-frequency receivers. Please, consider rewriting these sentences to be more specific.
18. Please, indicate that Kp index below 4 is considered as quite conditions in this study.
19. In the previous revision, authors found it is not necessary to transform frequencies to periods in Figure 7. Although this would provide better understanding of numbers, I would then instead clarify where is an energy peak (what is a frequency or period). It is also not clear what is shown in Figure 7. Are these Power Spectral Density plots? Why the amplitude is in TECu?
20. L290 – “phonemes”