

The manuscript analyzes ionospheric changes before and after the 2011 Van earthquake using GPS TEC and GIM data. It is hard to give a comprehensive and solid support to the conclusion based on the current data analysis. I think the work should be extensively expanded for possible publication. The following suggestions might be helpful for the further improvement of this manuscript.

The main results are shown in Figures 3-10 and Tables 1-8, however, these figures and tables derived from four GPS stations and GIM TEC data are similar. I think it is enough to show the results using one typical station or combining these figures into one or two figures. The tables have the same problem.

The authors consider the solar and geomagnetic activity in this manuscript. However, the results and conclusions are not supported by the limited results. In Turkey, there are about 20 GNSS stations around the epicenter (Figure 1 in Rolland *et al.*, 2013, GRL) within the studied period, therefore, it is possible to obtain the temporal and spatial distribution characteristics of the ionospheric changes. Please include the spatial analysis based on TEC data from local GPS network, at least using the GIM data.

The manuscript did not involve a discussion section, which results in an overall lacking of a proper evaluation for the results, and their connection with previous observations.

Line 41: we do have direct measurements in the ionosphere using various techniques.

Line 45: audio is a very unpractical word for this context.

Lines 43-45, 48-50, 57-59: TEC has been repeatedly defined. The introduction should be logically reorganized.

Line 95: Please add a reference for Equation 1.

Line 111: Figure 1 should add labels in x- and y-axis and the caption are too simple.

Line 118: Equation 2 is not correct.

Line 134: The time series of F10.7 in Figure 2 is not realistic, and the resolution of this figure should be improved.

Lines 148-149, 164-165, 185-186, 202-203: The correlation between the GIM and GPS TEC should be high because the CODE-GIM used IGS stations around the epicenter. It is not necessary to repeat these sentences several times.