

## ***Interactive comment on “On a reported effect in ionospheric TEC around the time of the 6 April 2009 L’Aquila earthquake” by Fabrizio Masci et al.***

### **Anonymous Referee #2**

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The authors present a refutation of Nenovski et al. (2015), a paper reporting on the precursory change in delta TEC prior to the 6 April 2006 L’Aquila earthquake. The approach was to independently process and analyze group delay and carrier phase GPS data from receivers nearby the earthquake epicenter. The analysis here shows that the anomaly (the "hump") receiving much focus in Nenovski et al. (2015) is not significant and not related to the earthquake.

Though the scope and depth of analysis here is not extensive, I think studies such as these are important to provide a counter argument. Precursory ionospheric enhancement remains an extraordinary claim requiring extraordinary evidence. Studies such as this reinforce the fact that the current body of evidence remains insufficient to support the extraordinary claim. Other than the minor points listed below, I judge the work to be in order for publication.

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#### Minor comments:

- The receiver IDs (e.g., Unpg) are capitalized in the manuscript, but are customarily given in all caps. I think the authors should adjust the manuscript to follow the standard convention.
- Page 2, "receiver are unreliable due to calibration problems." I’m not sure if this conclusion is justified. Are the data unavailable or of poor quality (or miscalibrated)?
- Many physical mechanisms are identified as not driving the feature of interest. Later, it is stated that "As this variation is not germane to this discussion, we will not speculate on the source." I think the weakest element of the ionospheric precursory research is that the physics connecting the two remains open. However, the authors commit a similar "crime" here: there is a systematic daily effect, it is (supposedly) unrelated to the earthquake, but what it is remains open. I think the authors need to address this in some way.
- The SCORE method is used to determine satellite and receiver biases. However, I am confused. If the analysis involves DTEC only, then are the biases then not of concern?
- The ultimate conclusion is that the authors "find no evidence for anomalous signals prior to, during, or after the earthquake occurrence." To better assess that no evidence is found after the earthquake, it would be helpful if Figure 2, 4, and 5 included data for more than 1 day after the earthquake.