

## ***Interactive comment on “Variability of Relativistic Electron Flux ( $E > 2$ MeV) during Geo-Magnetically Quiet and Disturbed days: A Case Study” by Tulsi Thapa et al.***

**Anonymous Referee #1**

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General comments: The authors conducted case studies to analyze the variations of  $>2$  MeV electrons in terrestrial radiation belt, and their relation to interplanetary triggers and geomagnetic activities. However, neither any contribution can be found to further the current understanding of relativistic electron dynamics, nor the methods the authors applied are appropriate and valid.

Specific comments: 1. While the authors claimed that they extended the understanding of radiation belt dynamics, what has been shown in this manuscript is that they simply listed the previous findings of other researchers, without, throughout the manuscript, pointing out which aspects are still not clear and what they did to improve the under-

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standing of these aspects. I think this is the main problem. This main flaw makes the current manuscript more an essay, rather than a research article.

2. The authors stated that this work is case study. Their method is to conduct cross correlation analyses between electron flux and different parameters, for each of the 4 cases, respectively. Then they drew conclusion on whether there is a relation between electron flux and the parameters. If the goal is to establish a link between different parameters, at least the cross correlation analysis should be applied to a large amount of events, so that the relation established is significant statistically. It is not acceptable to say one thing is related to another by cross correlation for only several cases.

3. I don't see the meaning of performing continuous wavelet transform in this manuscript. CWT is to discover periodicities or trends in time series—what trends in relativistic electron flux do the authors expect within the 2-3 hour time period of each event shown in Fig. 5? It seems that the authors blindly applied CWT to the current datasets, whereas they don't quite understand the fundamental mechanisms as well as the prerequisites of the methods they used.

Technical correction:

There are enormous typo errors throughout the manuscript, too many that it seems that the authors did not care about what they were writing.

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