

Review of the manuscript “Modeling of terrain effect in magnetotelluric data from Garhwal Himalaya Region” by Suman Saini et. al., submitted to EGU sphere

**General Comments:**

The manuscript presents the modeling of the terrain effect in the MT data and compares the results from two different methods. Generally, the manuscript is organized well, and the content is suitable. However, several sections (e.g., section 4) are bad organized and need to be rewritten. The introduction was written in a very confusing style, especially in the second paragraph. The language is not fluent and precise, and there are many grammar errors and typos.

**Specific Comments:**

1. Line 16: Do not use the phrases such as “in this paper”, “in this research paper” in the abstract.
2. Lines 20-21: This sentence is too long and a bit ambiguous, please reform it.
3. Lines 23-25: This sentence is a bit ambiguous and needs to be modified.

Section Introduction

4. Line 29: “time-varying measured components of earth’s” may be deleted.
5. Line 30: Modify “interior” to “interior structures”
6. Line 43-44: What do the “different types of terrain geometrics” mean? Please clarify them.
7. Line 46: Please give at least three references to support the statement of “many researchers”.
8. Lines 51-54: Finite difference method has also been used to treat the topographic effects, please search some papers. The Finite difference method has been mentioned as the main technique in the following paragraph, however, it is never been mentioned.
9. Line 59: What are “Two different terrain correction procedures”? One may have no idea about them until reading the corresponding contents in the references.

Section Methodology

10. This work compares two different techniques applied to remove the topography effect. Are there only two different techniques to treat the topography correction?
11. Lines 69-70: This sentence is confusing, please correct it.
12. Line 78: Were should be where.
13. Line 80: H- polarization may be replace with TM mode, which was used in previous section.
14. Line 85 and Line 101: “Where” should be use the lower case format.
15. Lines 101-102: This sentence is a bit confusing and needs to be modified.
16. Line 108: equation (7) needs to be corrected.
17. Lines 108-119: Equations should be described in detail.

#### Section Testing

18. Line 135: Figure 2, the symbol is too large to be seen clear. And a plot of relative error is better to be provide to show the similarity or the deviation.
19. Line 138:Fig.3 should be replaced with Figure 3.
20. Line 146: The symbol is too large to be seen clear in Fig. 3.
21. Lines 141-145: The results of the relative errors should be stated in detail.

#### Section Modeling

22. Lines 154-174: This section is only the construction of the model rather than the modeling. The content of the modeling should contain the model, gridding, method and results.

#### Section Result and Discussion

23. This section states the modeling results of three different models, and there seems no discussion in this section.

#### Section Conclusions

Line 244: what does the “efficacy” mean?

Lines 248-250: The last sentence is not the conclusion from this study. It is well known before this study.