

Response to Editor's Review Comments

Thank you once again for your valuable suggestions on how to improve this study. The revisions are as follows:

Comment 1:

Line 9: It would be better to write “Non-negative Tensor Factorization (NTF)”.

Line 35: Please cite the references as “Marchetti et al., 2020a, 2024;”

Line 45-46, 64, 89, 216, 219, 227, 274, 364, 374: I suggest that it would be better to write “Hattori et al. (2024) applied principal....the 2000 Izu Islands earthquake.” Similarly, “Yu et al. (2020) performed.... network analysis, additionally,.....(Yu et al., 2024)”. Please check the overall text.

Line 59, 66: The abbreviations of SW-NTF and NTF have already defined in the Abstract.

Line 89: Please write the magnitude of the 2008 Wenchuan earthquake. I further suggest that it would be better to write “The 2021 Madoi earthquake” in the manuscript (see also Figs. 1, 7, 9 and Lines 227, 309, 314, 379, 419).

Line 176: Please revise the caption of Figure 3 as it contains a repeated sentence. Besides, I suggest that the date should be written completely (e.g. May 2, 2021).

Line 186: I recommend formatting the references as “Hattori et al., 2013a,b.”

Line 191: I could not see any comparison for the decomposition results of traditional NTF and SW-NTF in Fig. 3. Please check it.

Line 226: I think that it should be “Figure 5”. Please check it. Besides please write the references as “Li and Parrot, 2012, 2013”

Line 232, 239: Please write the references as “Marchetti et al., 2020a, 2020b; De Santis et al., 2017, 2019b;”. Please write the references as “De Santis et al., 2015, 2017;”

Line 324: I think that it should be Figure 9. Please check it.

Line 393: Please check the sentence (Figure 10 illustrates the relationship between the cumulative geomagnetic anomalies and the temporal characteristics of the pre-seismic b-values). I think it should be Figure 11. Please check it.

Response 1:

Thank you for your careful review. The manuscript has been revised according to your comments.

Comment 2:

Line 26-27: In the references section, I could not see any reference of “Science, 2005”. Please revise the sentence or the citation accordingly.

Response 2:

We have checked and corrected the citations here.

Comment 3:

Moreover, I had previously suggested that the locations mentioned in the manuscript (e.g. Bayan Har block, Tibetan Plateau, Madoi County, China, Qinghai Province) should be presented on the map of Fig. 1. Please revise Figure 1 accordingly. Are there any references for the fault lines plotted on the map? Please cite them in the figure caption.

Response 3:

We apologize for the oversight during the previous round of review. According to your comment, we have added the boundary of the Bayan Har block to Fig. 1. However, we did not add the specific locations of Madoi County, China, Qinghai Province to the figure. The reason is that these administrative or geographical names are already clearly indicated in the manuscript (see lines 84-85), and adding them to the map would make the figure overly crowded without providing

substantial additional information.

Regarding references for the fault lines: We have added the appropriate references for the fault lines in the manuscript (see lines 88).

Comment 4:

Furthermore, I could not see any revisions addressing the reviewer's previous comments listed below.

Line 179: Why is the maximum iteration 200? For example, 1000 requires too much computing time? Overall, generally the analysis stopped for reaching the maximum number of iterations or precision criteria (i.e, the required tolerance)?

Lines 321-336: The proposed theoretical explanation by the comparison with lab experiment is very interesting and in my opinion is plausible. I would just suggest a further final comment that is the possibility that in the reality the scale of these processes could be even longer, as for example Scholz used a scale of several years before the earthquake, and it depends on the earthquake magnitude (Scholz et al., 1973 in your reference list).

Response 4:

Regarding the reviewer's previous comment #1, the description of the method in the manuscript is already largely consistent with the reviewer's suggestion, and therefore no revision has been made. Second, concerning the reviewer's query about the number of iterations, in our actual experiments, the iteration count is usually below 100, and the 200 iterations stated in the manuscript are considered adequate.

Regarding the reviewer's previous comment #2, we have supplemented the manuscript accordingly. Please see lines 339–341.