

This study utilizes complex network methods to uncover the evolution of climate network community structures in the context of global warming. It was discovered that the community structure of the climate network experienced a significant transition around 1982. The findings are intriguing. I have also reviewed the response letter from the first round of review, and I am pleased to see that the authors have meticulously addressed the concerns raised by the editor and the two reviewers. Consequently, the revised manuscript is now in good shape and is suitable for publication. However, there are some typos and technical errors that need to be corrected:

Response: Thank the referee for the valuable comments. I have carefully made relevant corrections in the revised manuscript and re-check the writing and grammatical errors of the article.

Line 30: The punctuation is incorrect; different references should be separated by semicolons.

Correction: (Lines 30) Doney et al., 2009; Mondal et al., 2021; Konapala et al., 2020; Mukherjee et al., 2020

Line 48: Change "precipitation, temperature, wind" to "precipitation, temperature, and wind."

Correction: (Lines 48) Understanding these systematic changes is imperative for predicting future climate scenarios (e.g., precipitation, temperature and wind) and

Line 111-120: Change the mathematical symbols in the text to italic, and bold the matrix A.

Correction: (Lines 111-120) I have made the corresponding modifications in the original text.

Line 130: Change the mathematical symbols in the text to italic.

Correction: (Lines 130) where $k_i = \sum_j A_{ij}$ and $k_j = \sum_i A_{ij}$ ($i \neq j$) are the number of links connected to vertex (node) i and j

Line 151: Change the mathematical symbols in the text to italic.

Correction: (Lines 151)equivalent to a degree of zero, $k_i = 0$.

Line 164: Ensure uniform spacing between the figure and the main text in the manuscript.

Correction: I've made adjustments accordingly.

Line 195: Change "the maximum time lag of 365 days" to "the maximum time lags of 365 days."

Correction: (Lines 195) the maximum time lags of 365 days.....

Line 291: There are some mistakes in the writing of the references.

Correction: I have revised the references according to the requirements of the journal.