Reviewer #1:

Comments and suggestion

This is a short and sweet, very well laid out article with good explanations, development and description. It introduces a new idea (to me) called Complex network analysis, which is well introduced and developed. I enjoyed the sequence of figures concluding in an evocative image in Figure 7. The tables and Figures were well presented and organised.

From my point of view it is a go, once the suggested corrections are all annotated on the article, which I am returning with this review. I am highlighting the less trivial suggestions for correction below my signature, which is my wont. The annotated article is being returned for correction with my review.

Thank you very much for your time and insightful review. We have revised attentively the manuscript in order to include your comments. We believe that this manuscript is substantially improved as a result of the revision. Please check our point-by-point response (in blue) to your comments (in red).

<Major comments>

1) please expand your figure caption to tell us what the figure is trying to show the reader, before searching in the text. This comment applies to all figures and some of the more complex tables

➢ Thank you for your good comment. We totally agree with your comment. Therefore, we added more detail explanation about Figure and Table in Captions. We hope this will help readers understand Figure and Table.
   - Table 1. Basic statistics values for rainfall data of cities

     ⇒ Table 1. Basic statistics values for rainfall data of cities; Basic statistics contain average, standard deviation, coefficient of variation and skewness;
   - Table 2. Average, maximum, and minimum link weights of each node

     ⇒ Table 2. Average, maximum, and minimum link weights of each node; Parentheses under link weights is nodes that forms a maximum or minimum value for target node;
   - Figure 4. Ranks of nodes using vital node identification

     ⇒ Figure 4. Adjacency information entropy value of cities; Color and size of circle are respectively proportion to the entropy and rank; Ride side of bar shows the adjacency information entropy values of nodes; Except for Taipei city, nodes near south china sea had higher values;
   - Figure 5. Group of nodes using multiresolution community detection

     ⇒ Figure 5. Group of nodes using multiresolution community detection; There are 8 groups in the East Asia; G1(Pearl River Delta, Hong Kong SAR, Shantou, Taipei City), G2(Osaka, Nagoya, Tokyo), G3(Wuhan, Hangzhou, Shanghai), G4(Tianjin, Shenyang, Beijing), G5(Bangkok, Ho Chi Minh City), G6(Xi'an, Chengdu, Chongqing), G7(Hanoi, Haiphong), G8(Manila, Cebu); Seoul and Kuala Lumpur did not make group with other nodes.

- Figure 7. Major water vapor transport routes in East Asia; The routes could explain the reasons why the relationship of groups was made like Figure 6

  ⇒ Figure 7. Major water vapor transport routes in East Asia; The routes could explain the reasons why the relationship of groups was made like Figure 6; Indian monsoon brings vapor from Indian Ocean, East Asian monsoon gets vapor from Pacific Ocean and east china sea; Anomalous anticyclone provide vapor in east china, Korea and Japan;

2) this last figure '7' is in microns = $1m^{-6}$. This is spurious - try 3 significant figures?

➢ In Figure 7., Max mi means Maximum cross-mutual information value. We want to express relationship between groups based on the maximum cross-mutual information result. However, Max mi in Legend could make confsuion on readers. Therefore, we fixed Legend in the Figure 7. And wrote more explaination in Caption.

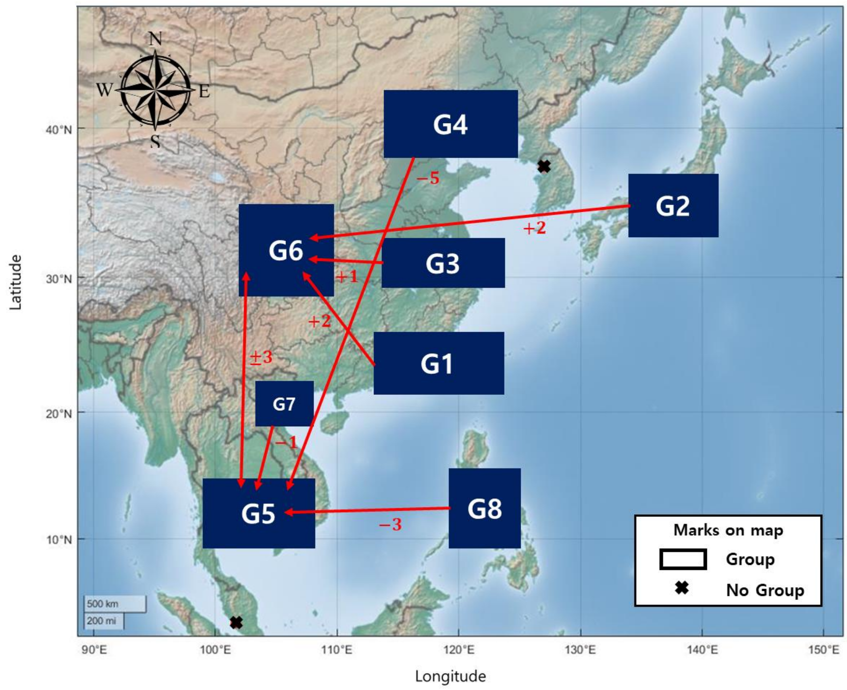

Figure 6. The maximum cross mutual information relationship and its time lag value; Each arrow points out the maximum relationship group and the numbers under the arrows express the lag time(days) of the maximum cross mutual information value; The figure shows relationship of groups and influence time intervals in East Asia;

3) is this k_j an inverse-distance weight, like kriging?

- k_j means 'Degree' which is basic index in complex network analysis. The degree is the number of nodes which have links with target node in unweighted network. About the weighted network, it is sum of weight of links that have connection with target node. Reader need to know about degree for understand vital node identification method. Therefore, we put explanation about degree in equation (2).
  - First. Calculate degree(k_j) of each node in the network

    $$k_i = \sum_{j \in \Gamma_j} w_{ji} \tag{2}$$

    Here, Γ_j is a group of nodes that form links with node j. w_{ji} is weight of link that connect node j and node i. If a network is unweighted, degree is the number of neighbor nodes.

    Second, calculate the adjacency degree (A_i) of each node.

    $$A_i = \sum_{j \in \Gamma_j} k_j \tag{3}$$

    Third, calculate the selection probability (P_{i_j}).

    $$P_{i_j} = k_i / A_j \tag{4}$$

    Final, calculate the adjacency information entropy (E_i).

    $$E_i = \sum_{j \in \Gamma_j} (P_{i_j} log_2 P_{i_j}) \tag{5}$$

    After comparing the calculated adjacency information entropy of each node, the importance is determined according to the descending power.

4) Comments on References

- We checked guidelines of HESS again. Then, we checked all references and revised errors in all references.
  - East Asia accounts for 54% of the global supply chain, providing a wide range of services and products across the world (Ann et al, 2020).
  - Wang, Z., Mu, J., Yang, M., and Yu, X.: Reexaming the mechanisms of East Asian summer monsoon changes in response to non-East-Asian anthropogenic aerosol forcing, Journal of Climate, 33(8), 2929-2944, https://doi.org/10.1175/JCLI-D-19-0550.1, 2020.