Supplementary material:Unveiling Amplified Isolation in Climate Networks due to Global Warming

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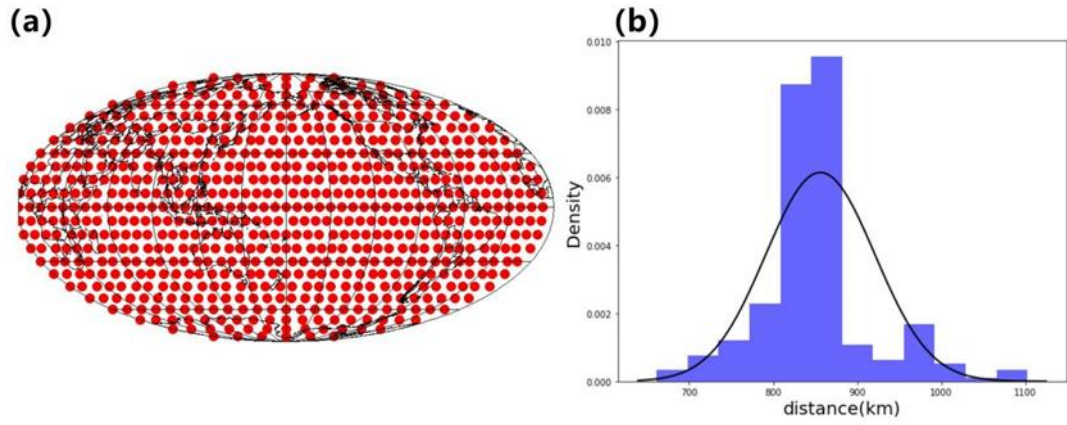
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Figure S1: (a) Spatial distribution of 726 network nodes in Earth and (b) the PDF of distances between neighboring nodes.
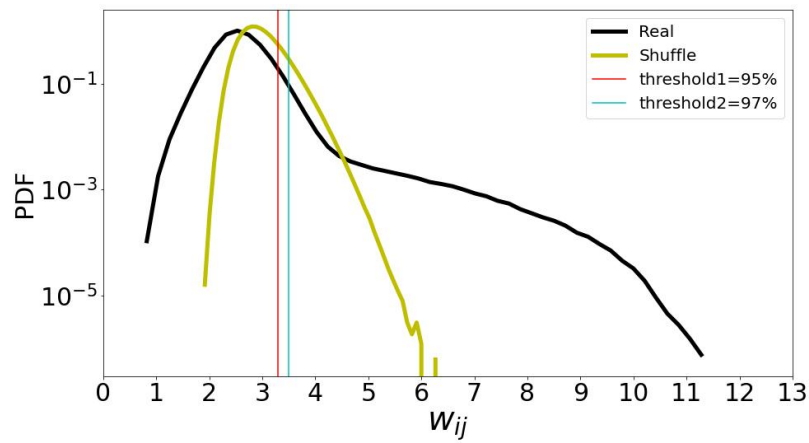

Figure S2: The probability density function (PDF) of W_{ij} for both the real and shuffled data. Red line represents the threshold value $W_{ij} = 3.3$ (signifying that 95% of the values in the shuffled data fall below this threshold), and blue line represents the threshold value $W_{ij} = 3.5$ (signifying that 97% of the values in the shuffled data fall below this threshold). Black line represents the real data, yellow line represents the shuffled data, where the time series of each node was randomized without establishing any correlation between nodes. Specifically, we shuffled the time series of each node for all years while maintaining the order of 365 days per year. This process was repeated 100 times, and recalculations were performed for each shuffled dataset.
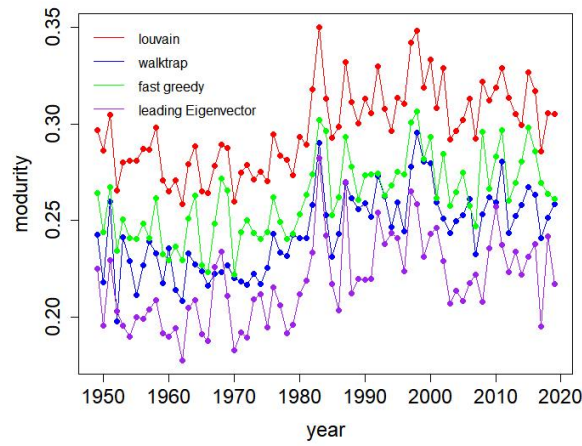
Figure S3: Time evolution of modularity for different algorithms, with red representing the Louvain algorithm, blue representing the Walktrap algorithm, green representing the Fast Greedy algorithm, and purple representing the Leading Eigenvector algorithm.
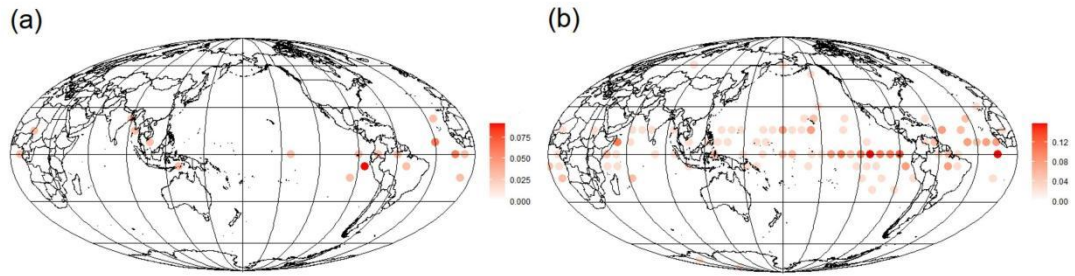

Figure S4: Probability graph of global isolated nodes using the Leading eigenvector algorithm for (a) 1949-1981 and (b) 1982-2019.
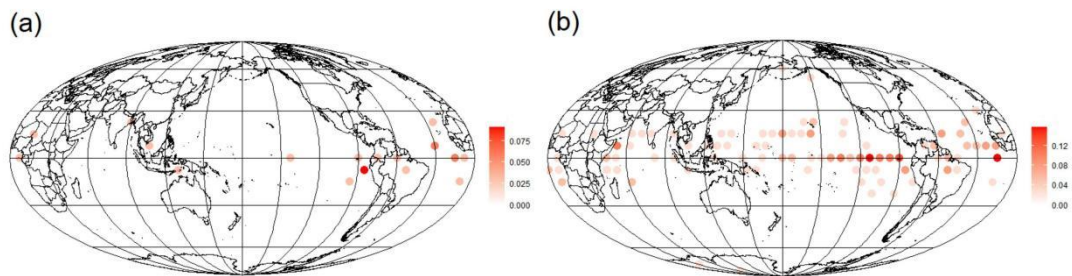

Figure S5: Probability graph of global isolated nodes using the Fast greedy algorithm for (a) 1949-1981 and (b) 1982-2019.
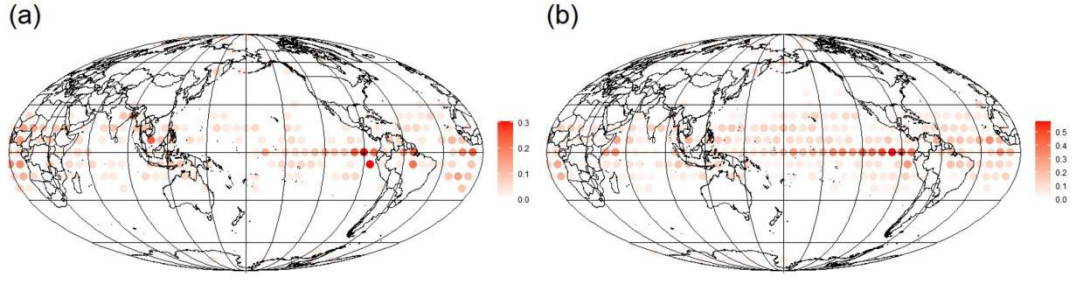
Figure S6: Probability graph of global isolated nodes using the Walktrap algorithm for (a) 1949-1981 and (b) 1982-2019.
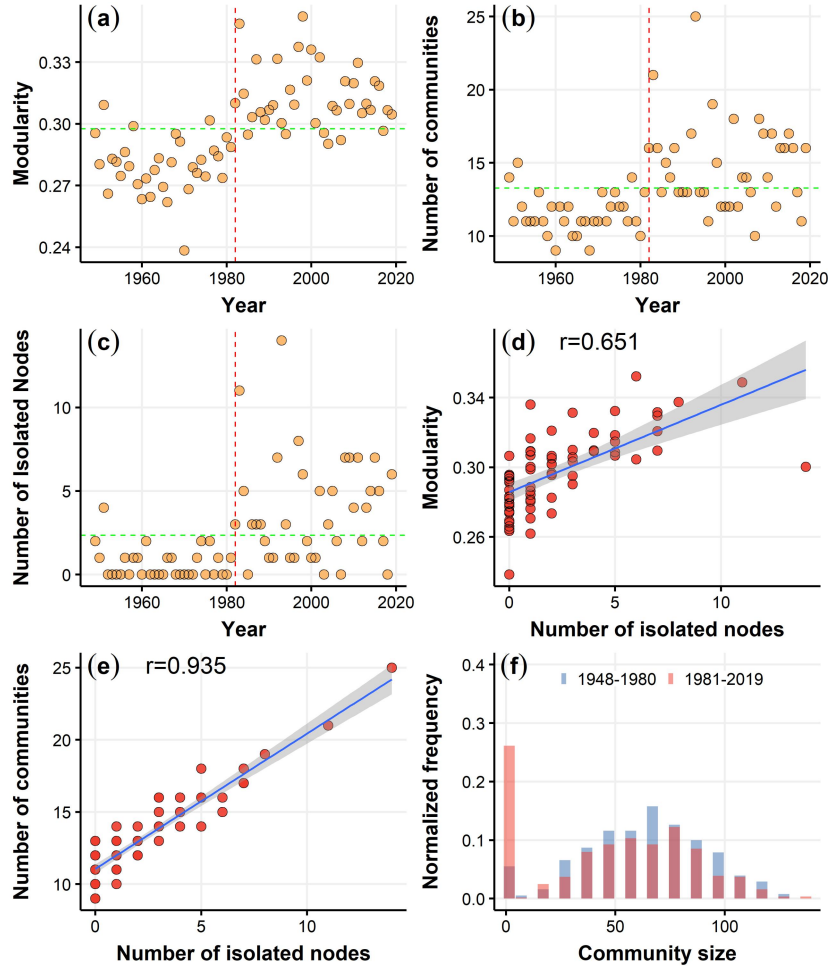

Figure S7: Same as Fig. 1 of the main text but for the maximum time lag of 365 days.
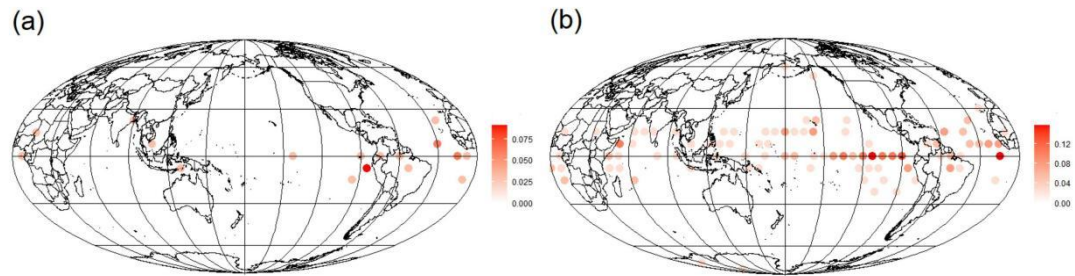

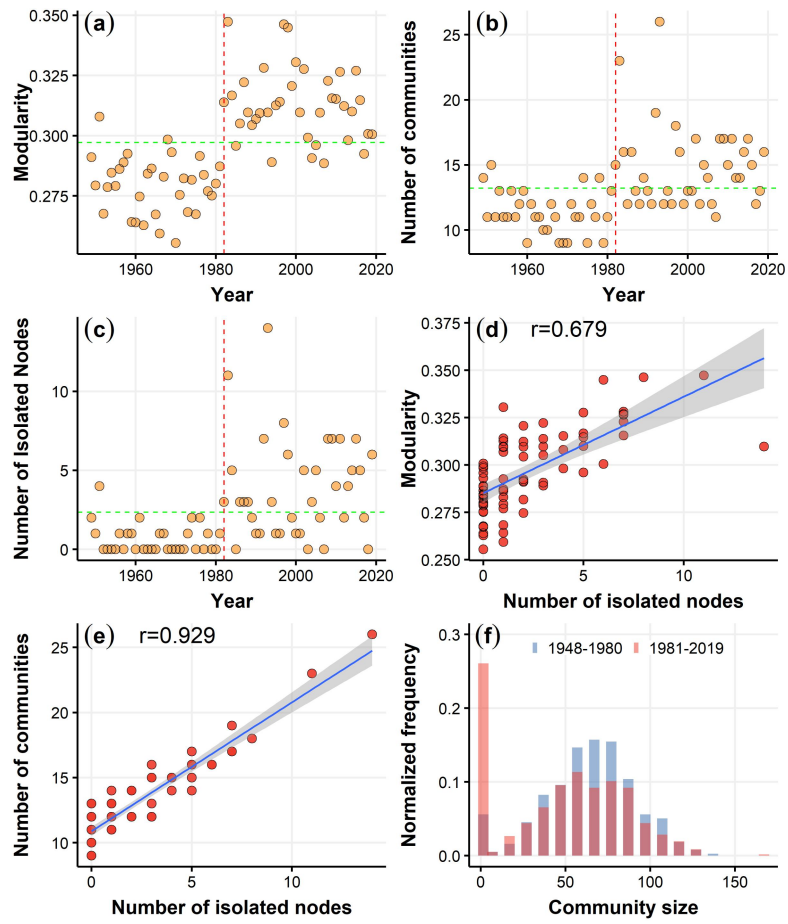**Figure S8: Same as Fig. 2 of the main text but for the maximum time lag of 365 days.**

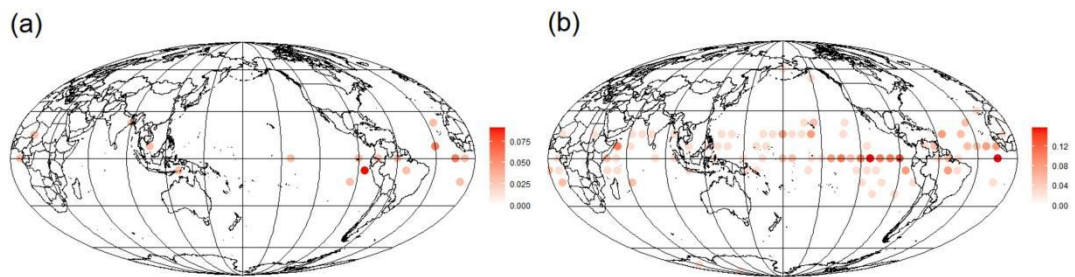**Figure S9: Same as Fig. 1 of the main text but for after shuffling the order of nodes.**

Figure S10: Same as Fig. 2 of the main text but for after shuffling the order of nodes.
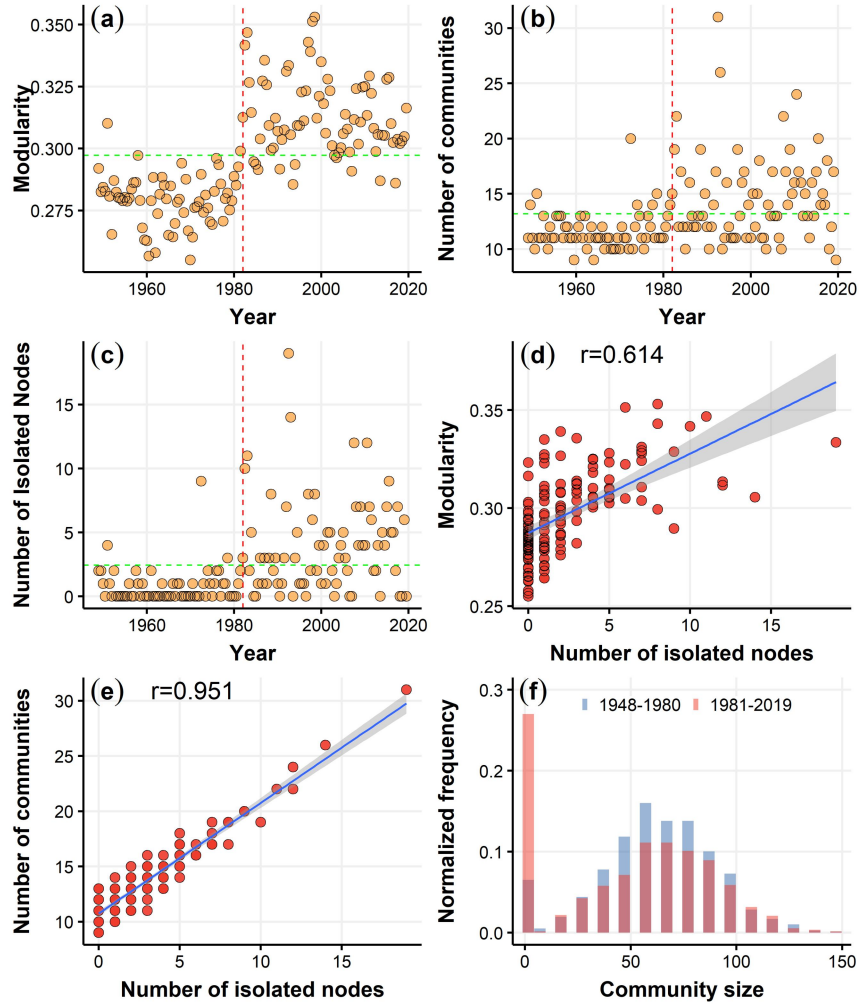
Figure S11: Same as Fig. 1 of the main text but for a 6-month shift for the time window.
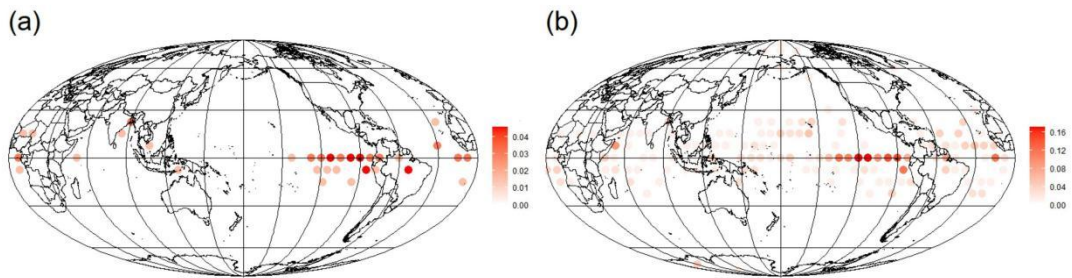

Figure S12: Same as Fig. 2 of the main text but for a 6-month shift for the time window.