

Exercice #3

Macroeconomy: GDP Correlation Analysis

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Motivation: to understand how one can approach
macroeconomy indices in a mechanistic (Hamiltonian) way

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- download *a few financial macroeconomic signals*
 - over some time interval
 - for a few (M) countries
1. calculate time dependent correlation coefficient between "countries"
 2. within some window size, e.g. $T = 5$, get the average for each signal
 3. move the window along the time axis (better to do so backwards)
 4. set up the adjacency matrix w_{ij} for each signal
 5. calculate the distance d_{ij} between countries (=signals)
 6. "draw" network of countries (complete graph) for each signal
 7. decide on thresholds
 8. draw "final networks"
 9. observe "clusters"
 10. write down "Hamiltonian"