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THE HONG KONG UNIVERSITY OF SCIENCE & TECHNOLOGY

Department of Mathematics

PHD STUDENT SEMINAR

Dynamic community detection for the Global Trading Networks via Tucker Decomposition

By

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Abstract

Community detection is one of the most important tools in understanding network topology. Even though its methods are initially developed for static networks, the extension to the dynamic case has been widely utilized to analyze the dynamic networks as its prevalence in numerous applications. However, current researches on undirected and unweighted multilayer networks may fail to model the real world cases, as the directed and weighted networks are pervasive both in nature and engineered systems. The Global Trading Networks, as an example of directed and weighted dynamic networks, could reflect the international trading relationships to some extent. In the research, we use the Tucker decomposition method on a 3-way or 4-way tensor, constructed from the Global Trading datasets. We then use K-means and Normalized K-means for clustering. The detected clusters could reveal the export and import trading relationship among countries, which cannot be observed directly from the original data.

Date : 18 May 2020 (Monday)
Time : 4:00pm – 5:00pm
Zoom Meeting : http://hkust.zoom.us/j/445635443

All are Welcome!