

Comparing Community Detection Algorithms in Bipartite Networks

Authors : Ehsan Khademi, Mahdi Jalili

Abstract : Despite the special features of bipartite networks, they are common in many systems. Real-world bipartite networks may show community structure, similar to what one can find in one-mode networks. However, the interpretation of the community structure in bipartite networks is different as compared to one-mode networks. In this manuscript, we compare a number of available methods that are frequently used to discover community structure of bipartite networks. These networks are categorized into two broad classes. One class is the methods that, first, transfer the network into a one-mode network, and then apply community detection algorithms. The other class is the algorithms that have been developed specifically for bipartite networks. These algorithms are applied on a model network with prescribed community structure.

Keywords : community detection, bipartite networks, co-clustering, modularity, network projection, complex networks

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