

Centrality and Communities in Complex Socio-Economic Networks

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Abstract

I will explain how to characterize the local centrality of nodes in complex networks by using the exponential adjacency matrix. I will give some examples of applications in socio-economic networks. Then I will develop a function for characterizing the communicability between nodes in a network. Such approach is based on the exponential adjacency matrix of the graph and can be seen as the thermal Green's function of the network. Using such approach I will explain how to define and detect communities in complex networks.