



Contribution ID: 268

Type: **not specified**

Laplacian-based centrality in directed networks

Monday, April 18, 2011 1:30 PM (1 hour)

The PageRank is a dominant centrality measure for directed networks. I would like to discuss the utility of an alternative centrality measure based on the graph Laplacian. The Laplacian-based centrality value for a node is in fact equal to the probability that a new type introduced at the node takes over the entire population in the voter dynamics. In addition, the Laplacian-based centrality captures importance of nodes in various other dynamics on networks including random walk and synchronization. I also explain its behavior in networks with community structure, its algebraic characterization, and the relationship to the Pagerank. Any applications?

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