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The diameter and Laplacian of directed graphs

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We consider Laplacians for directed graphs. The spectral gap of the Laplacian can be used to establish an upper bound for the diameter of a directed graph. In addition, the Laplacian eigenvalues of a directed graph capture various isoperimetric properties of the directed graph. For example, we will discuss several versions of the Cheeger inequalities and derive bounds for mixing time for random walks on directed graphs or non-reversible Markov chains.

As to related links, there are some relavant papers at my homepage: http://www.math.ucsd.edu/ fan

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