
Community Detection with the Non-Backtracking Operator

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Abstract

Community detection consists in identification of groups of similar items within a population. In the context of online social networks, it is a useful primitive for recommending either contacts or news items to users. We will consider a particular generative probabilistic model for the observations, namely the so-called stochastic block model and prove that the non-backtracking operator provides a significant improvement when used for spectral clustering.

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