SRC Abstract

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Random walks over a graph G has been a major topic of study in graph theory. We examine the effect of non-backtracking random walks over a graph, particularly in the mixing rate and PageRank of a graph. Using an invariant subspace, we identify a possible formula for relating the mixing rate of random walks and non-backtracking random walks. Further, we identify the relationship between the PageRank of a random walk and a non-backtracking random walk over bipartite graphs.