Graphs with simply structured eigenvectors

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Abstract

Given a simple undirected graph G, let $A(G)$ and $L(G)$ denote the adjacency and Laplacian matrix of G, respectively. To demonstrate the existence of structured eigenbases for $A(G)$ and $L(G)$ has become an interesting topic in spectral graph theory. In particular, for a more straightforward eigenvector analysis it is desirable to achieve an eigenspace that is structurally simple. Here, we discuss about graphs with simply structured eigenvectors. Some interesting and fundamental properties of such graphs are also presented.