
IN-JAE KIM, University of Victoria
Smith Normal Form and Acyclic Matrices

An approach, based on the Smith Normal Form, is introduced to study the spectra of symmetric matrices with a given graph. The approach serves well to explain how the path cover number (resp. diameter of a tree T) is related to the maximum multiplicity occurring for an eigenvalue of a symmetric matrix whose graph is T (resp. the minimum number $q(T)$ of distinct eigenvalues over the symmetric matrices whose graphs are T). The approach is also applied to a more general class of connected graphs G , not necessarily trees, in order to establish a lower bound on $q(G)$.