

Title of the talk: Seidel spectrum of threshold graphs
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Abstract

Threshold graphs play an important role in graph theory as well as in several applied areas such as computer science, scheduling theory etc. Here threshold graphs with its binary string representation are considered. Let Γ be a connected threshold graph with adjacency and Seidel matrix A and S respectively. Then $S = J - I - 2A$. Therefore S is a $\{0, \pm 1\}$ adjacency matrix, sometimes it is called Seidel adjacency matrix. We study the spectral properties of S . A recurrence formula for characteristic polynomial of S , multiplicity of the eigenvalues ± 1 of S are obtained. Characterisation of threshold graphs with at most five distinct Seidel eigenvalue is shown also. Finally, we prove a very uncommon result for threshold graphs: two threshold graphs may be cospectral on Seidel matrix. Here we define a class of such threshold graphs.

Keywords: threshold graph, threshold matrix, seidel matrix, quotient matrix, tridiagonal matrix, seidel cospectral.