On the Rank of (Weighted) Graphs

Aimei Yu, Beijing Jiaotong University

A weighted graph $G^w$ is a pair $(G, w)$, where $G$ is a simple graph and $w$ is a weight function from $E(G)$ to the set of nonzero real numbers. If the weighted function $w$ is from $E(G)$ to $\{1\}$, then $G^w = G$; if the weighted function $w$ is from $E(G)$ to $\{+,-\}$ i.e., $w$ is from $E(G)$ to $\{1,-1\}$, we call it a signed graph. The rank of $G^w$, denoted by $r(G^w)$, is the rank of the adjacency matrix of $G^w$. In this talk, we survey some results on the rank of (weighted) graphs.

Keywords: Weighted graph; Signed graph; Rank.