Splitting the K-terminal reliability

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Abstract

Let $G = (V, E)$ be a graph and $K \subseteq V$ a set of terminal vertices. Assume now that the edges of G are failing independently with given probabilities. The K-terminal reliability $R(G, K)$ is defined as the probability that all vertices in K are mutually connected.

In this talk a new approach for the computation of $R(G, K)$ at a vertex separating set of G is proposed. The approach utilises the lattice of labelled set partitions and its incidence algebra.