
DANIELLE COX, Acadia University

The Average Reliability of a Graph

Let G be a graph on n vertices and m edges. The all terminal reliability of G , $\text{Rel}(G, p)$, is the probability that at least a spanning tree is operational, given vertices always operate and edges operate independently with $p \in [0, 1]$. It is known that most optimal graphs do not always exist. We will discuss a new measure of optimality, the *average reliability* of a graph G , $\text{avgRel}(G)$. This talk will examine properties of average reliability and for situations where most optimal graphs do not exist in the traditional sense, we will apply it to propose "good" graphs for network reliability.