New metrics on networks arising from modulus and applications of Fulkerson duality

Nethali Fernando

Department of Mathematics and Statistics
Northern Arizona University

Abstract
The concept of $p$-modulus gives a way to measure the richness of a family of objects on a graph. We will investigate the families of connecting walks between two fixed nodes and show how to use $p$-modulus to form a parametrized family of graph metrics that generalize several well-known and widely-used metrics. Also, Fulkerson duality will be introduced and will be used in the proof of our main theorem regarding the new family of metrics.

Refreshments at 3:45