
TOM MCCORMICK, UBC Sauder School of Business

A parametric min cut approximation algorithm for network inhibition

A natural problem in networks is Network Inhibition: Given a cost for destroying each arc and a budget B , destroy a (possibly fractional) set of arcs D such that the max flow in the remaining network is minimized. This problem is NP Hard, but Burch et al show how to get a good pseudo-approximation algorithm via linear programming.

We show how to implement and extend their algorithm combinatorially using parametric min cut computations. This involves showing a conjugate duality relationship between Network Inhibition and a parametric max flow problem.

Joint work with Oriolo, Peis, Stiller and Garasto.