

Alternative Symmetrizations of Hitting Times in Graphs

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Abstract

Given a graph, we merge edge e with probability proportional to $f(w_e)$. Then we see if a and b are connected. The idea is that each edge represents some probability they are in the same cluser. (Maybe clustering is not the right idea.)

This clearly captures Rayleigh, but it is not clear if it also runs into local bottlenecks problems.

If the graph is unit, then suppose each edge is red with probability p . Let p' be the value such that a and b are connected by red edges with probability $> 1/2$, if each edge is red with probability p' . Then we can say a and b are close if p' is small, and a and b are far if p' is big.

Unfortunately I don't know what this value is on a grid, even if we restrict to up-right paths. Maybe this is the starting point for an exploration? But this seems to deal much more with percolation theory.