Continuum limits for shortest paths.

Many applications involve computing shortest paths over the nodes of a graph relative to a measure of pairwise node dissimilarity. When the node attributes are real valued random vectors and the dissimilarity is an increasing function of Euclidean distance these shortest paths can have continuum limits as the number of nodes approaches infinity. Such continuum limits can lead to low complexity continuous diffusion approximations to the combinatorial shortest path problem. This work is joint with Sung Jin Hwang and Steven Damelin and was supported in part by NSF Grant CCF-1217880 and ARO grant W911NF-15-1-0479. (Received August 15, 2018)