Geometry of Permutation Limits

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(joint work with M. Rahman and B. Virág)

We investigate the limit theory of permutation valued stochastic processes with the goal of understanding geometric behaviour of large random sorting networks. The theory builds on the limit theory of permutations, called permutons. We use the limit theory to investigate paths of minimal Dirichlet energy between permutons. We prove that the conjectured limit of random sorting networks, the Archimedean path, uniquely minimizes the energy among all paths from the identity to the reverse permuton.

Keywords: graph limits, sorting networks.