

Abstract Submitted
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Analysis of structure of small-world networks TAO JIA, RAHUL KULKARNI, EIVIND ALMAAS, Lawrence Livermore National Labs — We study the distribution function for minimal paths in small-world networks. We express this distribution in a convex combination form, and use numerical studies to obtain a functional fit for the convex coefficient in the limit of large system sizes and small disorder. Finally, we find analytic expressions for minimal paths distribution based on the functional fit for the convex coefficient. Our analysis can also be considered from the perspective of 1D random walks, our work thus provides a mapping between the structure of small-world networks and the exit problem for a class of 1D random walks.

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