PERCOLATION IN SPATIAL NETWORKS

Spatial Network Models beyond Nearest-Neighbors Structures

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Elements in the Structure and Dynamics of Complex Networks

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Abstract: Percolation theory is a well-studied process utilized by network theory to understand the resilience of networks under random or targeted attacks. Despite their importance, spatial networks have been less studied under the percolation process compared to the extensively studied nonspatial networks. In this Element, the authors will discuss the developments and challenges in the study of percolation in spatial networks ranging from the classical nearest neighbors lattice structures, through more generalized spatial structures such as networks with a distribution of edge lengths or community structure, and up to spatial networks of networks.

Keywords: spatial networks, interdependent networks, networks of networks, percolation theory, network resilience

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