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Graph connectivity and malicious attacks

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Abstract

We consider the problem of constructing networks that are resilient against malicious attacks. Such attacks are assumed to take place at nodes and them spread throughout the network. Specifically, we consider hardness results and algorithms for the problem of building low cost networks that remain connected when attacked maliciously. This problem generalises that of vertex-connectivity, but appears more complex. In particular, efficient algorithm design is complicated by the fact that the property of a network being "good" is nonmonotonic.