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Sparse networks supporting efficient reliable broadcasting. (English) Zbl 0817.68019
Nord. J. Comput. 1, No. 3, 332-345 (1994).

Summary: Broadcasting concerns transmitting information from a node of a communication network to all other nodes. We consider this problem assuming that links and nodes of the network fail independently with given probabilities $p < 1$ and $q < 1$, respectively. For a positive constant ε , broadcasting in an n -node network is said to be ε -safe, if source information is transmitted to all fault-free nodes with probability at least $1 - n^{-\varepsilon}$. For any $p < 1$, $q < 1$ and $\varepsilon > 0$ we show a class of n -node networks with maximum degree $O(\log n)$ and ε -safe broadcasting algorithms for such networks working in logarithmic time.

MSC:

[68M10](#) Network design and communication in computer systems
[68Q25](#) Analysis of algorithms and problem complexity
[90B18](#) Communication networks in operations research

Cited in **3** Documents

Keywords:

[broadcasting algorithms](#)