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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  $\varepsilon$ , broadcasting in an  $n$ -node network is said to be  $\varepsilon$ -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  $\varepsilon$ -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](#)