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基于欧氏最小生成树的无线Ad Hoc网络容量研究

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摘　要：

无线Ad hoc网络容量是当前的一个研究热点。本文在Gupta和Kumar提出的协议模型和物理模型基础上，推导了无线Ad hoc网络基于欧氏最小生成树的单播、多播容量，且指出当多播组尺寸 小于总的网络节点数 时，多播容量比单播容量大 。基于NS-2的仿真实验验证了多播容量上限是有效的。

关键词：无线Ad hoc网络；网络容量； 欧氏最小生成树；多播组尺寸

Research on the capacity of Ad Hoc networks based on Euclidean Minimum Spanning Tree

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Abstract:

The network capacity is a focus of current research on wireless Ad Hoc networks. Under the Protocol Models and Physical Models of communication proposed by Gupta and Kumar, this paper derives the theory result of unicast and multicast capacity of Ad Hoc networks based on Euclidean Minimum Spanning Tree (EMST) and indicates that multicast capacity of Ad Hoc networks is larger than the unicast capacity, when the group size is small compared to the total number of nodes in the network. The results of simulations based on NS-2 verify that the upper multicast capacity bounds for wireless Ad hoc netowrks is valid.

Keywords: wireless Ad Hoc networks; network capacity; Euclidean Minimum Spanning Tree; multicast group size

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