

学术研究

无线自组网中一种高效的路由协议

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摘要 无线自组网与传统的有线网不同, 它由一些可移动的结点组成, 这些结点的带宽、计算能力和能量都受到一定限制。针对这种网络, 研究者们提出了按需路由协议, 这些协议非常适合无线自组网这种拓扑结构, 但是由于缺乏对全局拓扑和结点移动性的了解, 可能达不到最优。因此提出了一种高效的路由协议ERNC, 该协议基于已提出的SHORT路由协议[13], 并对以前所提出的NAOR协议[14]进行了扩展, 即利用网络编码技术来进一步提高路由协议的性能。最后, 使用NS-2模拟器来评估ERNC的性能, 结果显示ERNC在分组投递率和平均端到端时延等方面获得了比已有协议更好的性能。

关键词 [路由](#) [路径累积](#) [网络编码](#) [无线自组网](#)

分类号

An efficient routing protocol in wireless ad hoc networks

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Abstract

Unlike the traditional wired networks, wireless ad hoc networks consist of mobile nodes with limited bandwidth, computing ability and energy. On demand routing protocols are proposed for this type of networks, and they scale well with the topology of ad hoc networks. But due to lack of knowledge of global topology and the mobility of nodes, they may be not optimal. Therefore an efficient routing protocol called ERNC based on SHORT[13] is proposed, and previous proposed NAOR[14] is extended by exploiting network coding technique to further improve the performance. Finally, NS-2 simulator is used to evaluate the performance of ERNC. The results show that ERNC gets better improvement on performance such as delivery rate and latency than existing protocols.

Key words [routing](#) [path accumulating](#) [network coding](#) [wireless ad hoc networks](#)

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