

论文

面向链路稳定性的MANET路径建立机制

吴大鹏, 武穆清, 甄岩, 孙兵

北京邮电大学宽带通信网实验室 北京 100876

收稿日期 2008-6-3 修回日期 2009-6-15 网络版发布日期 2009-9-2 接受日期

摘要

为了适应拓扑动态变化的Ad hoc网络, 该文提出了一种面向链路稳定性的路由机制, 节点根据少量接收信号强度样本值建立牛顿插值多项式描述连续时间域上的信号强度, 进而在不预测节点运动方向和速度等相关参数的情况下估计链路生存时间, 按照链路生存时间和跳数两个约束条件, 源节点逐跳建立稳定的端到端路径。仿真结果表明, 所建立的牛顿插值多项式能够准确地逼近节点随机移动过程中的实际接收信号强度, 并且该路由机制能够有效地减少路由重建次数, 降低数据包丢弃概率。

关键词 [移动Ad hoc网络](#) [路由协议](#) [链路生存时间](#) [牛顿插值多项式](#)

分类号 [TN915.04](#)

Reliable Routing Mechanism in MANET Towards Link Stability

Wu Da-peng, Wu Mu-qing, Zhen Yan, Sun Bing

Broadband Communication Networks Lab, Beijing University of Posts and Telecommunications, Beijing 100876, China

Abstract

Based on the estimated link lifetime, a novel routing mechanism is proposed in this paper to establish the reliable end-to-end path in Ad hoc networks. In order to describe the received signal strength continuously in time domain, the Newton Interpolation Polynomial is constructed according to the received signal strength; and then, the link lifetime is estimated with no prediction on speed, direction and other movement parameters. With the constraint of link lifetime and hop counts, the source nodes set up the paths to destination nodes in hop-by-hop mode. Simulation results show that the received signal strength can be described by Newton interpolation polynomial accurately while the mobile nodes are moving randomly; moreover, the route discovery times and packet drop ratio can be reduced by the routing mechanism.

Key words [Mobile Ad hoc networks](#) [Routing protocol](#) [Link lifetime](#) [Newton interpolation polynomial](#)

DOI:

通讯作者

作者个人主页 吴大鹏; 武穆清; 甄岩; 孙兵

扩展功能

本文信息

▶ [Supporting info](#)

▶ [PDF \(282KB\)](#)

▶ [\[HTML全文\]\(OKB\)](#)

▶ [参考文献\[PDF\]](#)

▶ [参考文献](#)

服务与反馈

▶ [把本文推荐给朋友](#)

▶ [加入我的书架](#)

▶ [加入引用管理器](#)

▶ [复制索引](#)

▶ [Email Alert](#)

▶ [文章反馈](#)

▶ [浏览反馈信息](#)

相关信息

▶ [本刊中 包含“移动Ad hoc网络”的相关文章](#)

▶ 本文作者相关文章

· [吴大鹏](#)

· [武穆清](#)

· [甄岩](#)

· [孙兵](#)