

基于簇头选择的移动传感网拓扑控制算法研究

作者: 章韵, 宋汝芸, 陈志, 扈罗全, 岳文静

单位: 南京邮电大学计算机学院

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摘要:

针对移动传感网节点的移动性、能量有限性、动态变化性特点, 提出了一种移动传感网分簇拓扑控制算法NACA。NACA算法吸收最小ID算法简便的优点, 将其改进, 提出新概念响应率, 同时考虑了能量有限、移动速度和邻居节点数目等因素。通过实例分析, 将NACA算法和WCA算法、HD算法进行比较, 分析表明该算法初次收敛快, 能够使得移动传感网具有更稳定的拓扑结构和更长的生命周期。

关键词: 移动传感网; 簇头; 拓扑算法

Research on Topology Control Algorithm of Mobile Sensor Networks based on Cluster head Selection

Author's Name:

Institution:

Abstract:

With the mobility, limited energy, dynamic change characteristics of mobile sensor network nodes, a clustering topology control algorithm NACA is proposed for mobile sensor networks. The algorithm of NACA absorbs the simpleness of the lowest ID algorithm, improve it, propose a new concept of Corresponding rate, at the same time consider the factors of limit energy, mobile speed and neighbors node number. Through the case analysis, NACA algorithm is compared with WCA algorithm and HD algorithm. Case analysis shows that the proposed algorithm has fast initial convergence, mobile sensor networks have stable topology and longer lifetime.

Keywords: mobile sensor networks; cluster head; topology algorithm

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