传感技术学报
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一种基于蒙特卡罗法的无线传感器网络移动节点定位算法研究

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摘　要：

定位技术是无线传感器网络中关键的基础支撑技术。本文针对信标节点静止，定位节点随机运动的网络模型，提出了一个基于蒙特卡罗方法的改进定位算法，并通过仿真将本算法与以往研究成果中的代表性的移动传感器网络定位算法进行了模拟比较和分析。

关键词：无线传感器网络；蒙特卡罗；节点定位；移动节点

A Study of Mobile Node Localization Algorithm Based on MCL for Wireless Sensor Networks

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Abstract:

Localization is extremely critical for many applications in wireless sensor networks. In this paper, we consider a mobile wireless sensor network where sensor nodes are moving. We propose and analyze a variation of the Monte Carlo Localization (MCL) algorithms. We conduct simulation experiments to evaluate the performance of the algorithm by varying the number of seeds, number of nodes, velocity of nodes and estimation error. The simulation demonstrates that the proposed algorithm provides better performance in localization precision, computing overhead, and energy consumption.

Keywords: wireless sensor networks; Monte Carlo; node localization; mobile node

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