一种高能效的无线传感器网络路由协议设计

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摘　要：

如何有效地降低节点的能耗，延长网络生存时间，一直是无线传感器网络路由协议的研究热点。本文基于LEACH路由算法，提出一种新的路由机制。该机制改原来簇头选取概率随机的缺陷，引入了剩余能量和局部节点密度因素，使网络能耗更均衡。同时，在层次型路由的基础上，独立节点采用平面路由，直接和si点通信，混合的路由算法能更好地提高能效。最后，用MATLAB对两种算法仿真，仿真结果表明，改进算法在网络生存时间和簇负载平衡上更优于LEACH算法

关键词：无线传感器网络，路由协议，能量，LEACH

An Energy-Efficient Routing Protocol for Wireless Sensor Networks

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Abstract:

How to reduce the power consumption of nodes effectively in order to prolong the lifetime of WSN is the central topic for research in WSN routing protocols. A new rou algorithm based on LEACH is proposed in this paper. Firstly, in order to improve the random probability of head election, so proportion energy consumption, new param such as residual energy and local node density are introduced for head election. Secondly, besides the hierarchical routing, independent nodes apply flat routing, communicating to sink node directly. This hybrid routing can reduce energy consumption. Both of the algorithms are simulated in MATLAB. The results prove that the improved algorithm is much better than LAECH in lifetime and LBF.

Keywords: wireless sensor network, routing protocols, energy, LEACH

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