网络、通信、安全

一种全局能量均衡的路由协议

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摘要　　利用分簇技术可以提高无线传感器网络的能量利用及网络的可扩展性。针对分簇技术的能耗不均衡问题提出了一种新的全局能量均衡的路由协议（OEBR）。选取剩余能量较高的部分节点作为候选簇首，通过计算候选簇首到R传播半径中成员节点的聚类相似度（距离），以聚类相似度作为条件竞争为簇首。提出一种单跳和多跳相结合的通信方式实现簇间通信，根据能量和距离阈值使节点在单跳、多跳模式转换。仿真实验表明，该路由协议有效地平衡了全局能量消耗，并显著地延长了存活时间。

关键词　　无线传感器网络　分簇　能量均衡

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Overall energy-balanced routing protocol

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Abstract

　Clustering techniques can increase utilization of energy and scalability for wireless sensor networks.This paper proposes an novel Overall Energy-Balanced Routing protocol（OEBR） in order to solve the problem of unbalanced energy consumption in the clustering techniques.Selecting part nodes with more residual energy to take tentative cluster heads，via compute similitude（distance） form a tentative cluster head to nodes which in the rage of R broadcast radius，according similitude，tentative cluster heads compete final cluster head.Propose a communication model which combines single hop with multi-hop to perform inter-cluster communication，according to the threshold of energy and distance to change communication model between single hop and multi-hop.Simulation results show that the proposed routing protocol the clustering schema balances the overall energy consumption，and prolongs the network lifetime well.

Key words　wireless sensor networks　clustering　energy balanced

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