

## 无线传感器网络LEACH协议成簇算法研究

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摘要:

减少传感器节点的能量消耗, 延长网络生命周期是无线传感器网络路由协议的首要设计目标。对LEACH协议进行了改进, 主要体现在簇的形成过程中, 节点不仅考虑自身的通信代价, 还融入了簇头的剩余能量、簇头到基站的距离等因素来选择加入哪个簇。仿真实验表明, 新的协议延长了网络的生存时间, 同时减少并平衡了各节点的能耗。

关键词: 无线传感器网络; 分层路由协议; LEACH; 成簇

## The cluster formation Algorithm Research of LEACH in WSN

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**Abstract:**

Reducing the power usage of the sensor nodes and prolong the lifetime of the network is the primary goal for routing protocol design. Based on analysis of LEACH protocol, the improved protocol is proposed, in which the nodes is not only concerns with the communication cost of itself but also the energy of the cluster head and the distance between the cluster and the Base Station in cluster formation phase. The simulation results show that the new protocol can prolong the lifetime of the network effectively, also reduce and balance the energy consumption among the nodes.

**Keywords:** wireless sensor network; dual-layer router protocol; LEACH; cluster formation

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