

## 一种结合LEACH和PEGASIS协议的WSN的路由协议研究

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摘要:

均衡节点能耗和提高能耗效率以延长整个网络的寿命是无线传感器网络研究的关键所在。本文结合典型LEACH和PEGASIS的优点, 针对真实环境下节点的分布存在空洞区域的特点, 提出了一种改进的节能快速路由协议。协议在建簇过程中计算簇的分散系数, 并通过阈值来确定的簇内通信方式。在簇首之间采用单跳和多跳传输结合的传输机制。理论分析及仿真结果表明, 新提出的路由协议比LEACH更均衡且有效减少了能量消耗, 延长了网络的生命周期。

关键词: 无线传感器网络; 分簇路由; 分散系数; 能量均衡

## Improved Routing Protocol in Wireless Sensor Network Based on LEACH and PEGASIS

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**Abstract:**

The key to wireless sensor network research is how to balance nodes' energy consumption and improve energy efficiency in order to extend the life of the entire network. Based on LEACH and PEGASIS, as for the characters of node distribution existing empty area in real environment, we proposed an improved energy-saving and efficiently routing protocols. It calculates the dispersion coefficient in the process of building the cluster, and determined cluster communication by the threshold. In the steady state, cluster-head send its data to gateway by single hop or multi-hop. The simulation shows that the proposed protocol can effective save energy, balance network load and extend the network' s lifetime.

**Keywords:** Wireless Sensor Network(WSN); cluster routing; Dispersion coefficient; energy-efficient

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