

网络、通信与安全

## 无线传感器网络的簇头间距自适应HDA-LEACH算法

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**摘要** 针对LEACH算法中当某些簇头间距过近时会导致传感信息冗余和簇头多余能耗的问题进行了改进,提出了HDA-LEACH算法,增加了对节点剩余能量以及簇传输阶段的考虑,并且从两方面提出了簇头间距自适应的拓扑控制改进方案:一是重新分配簇头以消除簇头间距过近情况,二是取消两太近簇头中能量较低簇头的簇头资格。用MATLAB对LEACH算法和HDA-LEACH算法进行仿真,证实HDA-LEACH算法在网络生存时间和负载均衡程度上比LEACH算法有了明显提高。

**关键词** [簇头间距自适应](#) [分簇路由算法](#) [网络生存时间](#) [负载均衡程度](#)

分类号

## Cluster head distance adaptive HDA-LEACH algorithm in WSN

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### Abstract

In this paper,to solve the problem of sensing information redundancy and more power waste on cluster heads when some cluster heads are too near in LEACH,an improved HDA-LEACH algorithm is presented,in which the remaining node power and the cluster transmission phase are considered,and two cluster head distance adaptive topology control improvement schemes are presented,one is to reassign the cluster heads,and the other is to disqualify the less power cluster head in the two too near cluster heads.Both HDA-LEACH and LEACH are simulated in MATLAB.The simulation results prove that HDA-LEACH algorithm is much better than LEACH algorithm in network lifetime and LBF.

**Key words** [cluster head distance adaptive](#) [clustering routing algorithm](#) [network lifetime](#) [LBF](#)

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