

无线传感器网自配置载波侦听门限策略研究

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摘要 针对无线传感器网的能量有效性和自配置载波侦听门限策略的相关问题, 引入了侦听效能指数和侦听代价指数两个参数, 分别用于度量侦听范围对冲突避免性能和网络吞吐的影响。在背景噪声为高斯噪声的假设下, 分析了随机噪声导致固定侦听门限对信道状况的各种误判。最后, 折衷考虑侦听范围和随机噪声对网络性能的影响, 提出了自配置载波侦听门限的基本思想。

关键词 [无线传感器网络](#) [能量有效性](#) [载波侦听门限](#)

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On strategies for the self-configuring carrier sensing threshold in wireless sensor networks

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Abstract

Some problems on the strategy of the self-configuring carrier sensing threshold are discussed, which aims at energy-efficiency in wireless sensor networks. To measure the performance of collision avoidance and throughput achieved under different carrier sensing ranges, the Sensing Effectiveness Index and the Sensing Cost Index are first introduced. In addition, with an assumption of the Gaussian noise, the stochastic background noise causing that medium is determined mistakenly under fixed carrier sense thresholds are analyzed. Finally, a basic idea of self-configuring carrier sensing threshold is proposed, which is the tradeoff of the effects on the network performance of the carrier sensing range and stochastic noise.

Key words [Wireless Sensor Networks](#) [Energy-efficiency](#) [Physical Carrier Sensing threshold](#)

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