

一种新的跨层功率控制无线传感器网络路由协议

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摘要:

无线传感器网络中通信终端的能量非常有限,但在许多应用场景下,节点的能量消耗较大,因此采用有效的功率控制策略非常重要。利用信道增益的对称性,在AODV协议的基础上提出了一种不依赖于地理位置信息的跨层功率控制路由协议PBAODV,分析与实验表明该协议在不影响其他网络性能指标的前提下,有效的降低了系统整体能耗。

关键词: 无线传感器网络; 功率控制; 路由; 跨层设计; ad hoc按需路由协议

A Novel Cross-layer Designed Power-aware Routing Protocol for WSN

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Abstract:

The terminals in wireless sensor networks have limited power supplies, but there is a much more power consumption in many situations especially in large scalable environment. A cross-layer power-aware routing protocol, that needn't the help of geographical information, is designed based on symmetry of channel gain and AODV protocol. Analysis and simulation show that the protocol has good effect on saving power and doesn't impair on other performance of networks.

Keywords: wireless sensor networks; power-aware; routing; cross-layer design; AODV

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