

# 低延迟和低能耗的无线传感器网络数据融合算法研究

徐良凤, 张曦煌

(江南大学 物联网工程学院, 江苏 无锡 214122)

**摘要:** 提出了低延迟和低能耗的无线传感器网络数据融合算法. 该算法主要是将无线传感器网络节点分成多个不均匀簇, 每个簇采用自底向上的方法构建拓扑结构, 从而降低延迟和能耗. 仿真实验表明与同类算法相比, 该算法有效减少了数据延迟和数据能耗, 并延长了整个网络的生命周期.

**关键词:** 无线传感器网络; 数据融合; 低延迟; 低能耗

## Research on Data Fusion Algorithm for Wireless Sensor Networks with Low Delay and Low Energy Consumption

XU Gen-feng, ZHANG Xi-huang

(School of Internet of Things Engineering, Jiangnan University, Wuxi 214122, China)

**Abstract:** In this paper, a data fusion algorithm for wireless sensor networks with low delay and low energy consumption is proposed. In this algorithm, the nodes of wireless sensor networks are divided into several inhomogeneous clusters, and each cluster is constructed by a bottom-up approach to reduce the delay and energy consumption. The simulation results show that the algorithm can effectively reduce the data delay and energy consumption compared with other similar algorithms, and prolong the life cycle of the whole network.

**Key words:** wireless sensor network; data fusion; low delay; low energy consumption

**作者简介:**

徐良凤 女, (1990-), 硕士研究生. 研究方向为无线传感器网络、嵌入式系统、计算机网络.  
E-mail:2467933944@qq.com.

张曦煌 男, (1962-), 教授. 研究方向为无线传感网、嵌入式系统、计算机网络、图形与图像处理、计算机分布式控制与智能控制.