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基于网络编码的传感器网络信息交换算法研究

作　者：熊志强, 刘威, 程文青，廖盛斌

单　位：华中科技大学 电子与信息工程系

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摘　要：
在以数据为中心的无线传感器网络中，节点间的信息交换问题越来越受到研究者的关注。信息交换的效率反映了网络的服务质量，甚至直接影响到网络的生命周期。立足于分簇的无线传感器网络，分类总结了簇节点拓扑模型，提出了基于网络编码的无线传感器网络簇内信息交换算法。在理论分析和仿真实验的基础上，将网络编码算法与传统信息交换算法进行了比较和总结，深入分析了其性能优劣和适用场景，并展望了信息交换算法未来的研究方向。

关键词：无线传感器网络;信息交换;网络编码;能量有效

A Research on Network Coding Algorithm for Information Exchange in Wireless Sensor Networks

Author's Name: XIONG Zhi-qiang, LIU Wei, CHENG Wen-qing, LIAO Sheng-bin

Institution: Department of Electronics and Information Engineering, Huazhong University of Science and Technology

Abstract:
In data-centered wireless sensor networks, the problems of information exchange among nodes have attracted more and more interests of researchers. The efficiency of information exchange reflects the network quality of service, even affects the lifetime of networks. Based on clustered sensor networks, the intra-cluster nodes topology models are proposed with some intra-cluster information exchange algorithms. More specially, the network coding algorithm is discussed in detail. After theoretical analysis and packet-level simulation comparison, the advantages and disadvantages of the traditional algorithms and network coding algorithm are summarized. The open research issues in this field are also pointed out.

Keywords: wireless sensor networks; information exchange; network coding; energy efficiency

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