

## 基于分组的无线传感器网络入侵检测方案

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摘要:

为了有效地检测无线传感器网络所面临的各种恶意攻击, 本文提出了一种轻量、高效、灵活的分组入侵检测方案。在该方案中, 整个传感器网络被划分成若干物理位置临近、具有相似观测结果的分组, 组内各传感器节点同时观测其他节点的多个属性, 以便精确地检测各种攻击行为。实验结果表明, 与传感器网络中现有的入侵检测方案相比, 本方案具有较低的误报率和较高的检测精度, 同时消耗更少的能量。

关键词: 无线传感器网络; 安全; 入侵检测; 分组算法

## A Group-based Intrusion Detection Scheme in Wireless Sensor Networks

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**Abstract:**

In order to detect various kinds of malicious attacks in wireless sensor networks, we proposed a group based intrusion detection scheme which meets the efficient, lightweight and flexible property in this paper. The sensor networks are partitioned into many groups in which the sensors in each group are physically close to each other and equipped with the same sensing capability. Our intrusion detection algorithm takes into consideration of multiple attributes of the sensor nodes simultaneously to detect malicious attackers precisely. We show through experiments with real data that our algorithm can decrease the false alarm rate and increase the detection accuracy rate compared with existing intrusion detection schemes while lowering the power consumption.

**Keywords:** wireless sensor networks; security; intrusion detection scheme; grouping algorithm

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