

## 无线传感器网络线性调频扩频测距方法研究

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摘要:

提出一种能够适用于复杂室内通信环境的无线传感器网络节点间的测距新方法。该方法利用线性调频扩频技术进行通信并实现测距; 为提高测量精度, 建立了基于最小二乘原理的距离修正数学模型。实验结果表明, 该方法具有发射功率低, 抗干扰能力强, 适合远距离测量的优点, 所建立的距离修正模型能有效减小测量误差。

关键词: 无线传感器网络; 测距; 线性调频扩频; 最小二乘原理

## Research on Ranging with Chirp Spread Spectrum Technique in Wireless Sensor Networks

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**Abstract:**

A novel ranging method for wireless sensor nodes in complex indoor communication environment is proposed. It uses Chirp Spread Spectrum technique to communicate and range. To improve the ranging accuracy, a mathematic model based on the least square principle is constructed. The experiments show that this method has low power consumption, strong anti-interference ability and large ranging scope. In addition, The mathematical model can effectively reduce the measurement error.

**Keywords:** wireless sensor network; ranging; Chirp Spread Spectrum; least square principle

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