# 一种高精度无线传感器网络节点三维定位算法

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摘  要：

针对电气设备故障监测的无线传感器网络节点定位需求，提出了NMDS-MEEF集中式三维定位算法。该算法采用一跳邻居节点相关信息参与每次迭代来进行定位计算，相较同类算法更为简单、实用。仿真结果表明，该算法很好的提高了节点定位精度，并且测距精度和锚节点密度对该算法定位精度的影响较小。

关键词：无线传感器网络；定位；多维标度；故障监测

## A Three-dimensional Node Localization Algorithm of High-precision in Wireless Sensor Network

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**Abstract:**

A centralized three dimensional localization algorithm is proposed with the name of NMDS-MEEF, which is based on the location requirements of wireless sensor network used for monitoring large electrical equipment fault. The localization algorithm adopts a changed nonmetric multidimensional scaling in which the iterations process only makes use of the correlated data of one-hop neighbor nodes. The algorithm is more straightforward and practical. The simulation results demonstrate that the algorithm is of great advantages in improving localization accuracy, decreasing the dependence on the density of anchor nodes and reducing the influence by the accuracy of position estimation.

**Keywords:** Wireless Sensor Networks; Node Localization; Multidimensional Scaling; Fault Monitoring

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