

6. CONCLUSIONS

This paper mainly explores the filter optimization of RSSI positioning and proposes a correction matrix of the TSE algorithm. First, the RSSI measurement was improved by Gaussian filtering and Kalman filtering. Then, the initial position was iteratively obtained by the weighted centroid algorithm, whose weight was computed by the optimized RSSI measuring distance, and a correction matrix was developed to improve the Taylor series expansion (TSE). The simulation results show the two filtering methods, especially the Kalman filter, can effectively reduce the RSSI measurement errors and improve positioning accuracy of unknown nodes, and the correction matrix of the TSE algorithm can further improve the positioning accuracy. In addition, the positioning accuracy of our method increases with the density of anchor nodes.

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