

ABSTRACT

The present disclosure proposes a wireless sensor network positioning method for marine search and rescue based on information fusion, including: S1, constructing an RSS ranging model and a TOA ranging model in conjunction with sea wave masking noise, respectively; S2, fusing multi-source ranging information in the RSS ranging model and the TOA ranging model according to constraints, and constructing a hybrid ranging constrained least squares framework; S3, introducing a buffer factor, utilizing an improved block pivot rotation method, and obtaining the initial solution of the target position by cyclically alternating feasible solution indices; and S4, deriving a linear re-optimization method based on the first-order expansion of the Taylor series, performing error correction in the initial solution obtained in S3, and obtaining a more accurate solution of the position. The present disclosure has the advantage that the problem that the localization accuracy of a marine wireless sensor network localization technology only relying on a single ranging means is reduced due to the increase in area of the monitoring region and the increase in noise is solved.

[Fig.2]