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Research on intelligent data transmission and communication algorithms for ship networking. (Chinese. English summary) [Zbl 07404520]

Summary: Data transmission and communication algorithm is an important direction in the current research of ship networking. In order to solve the shortcomings of current data transmission and communication algorithm, such as large data delay and low power of wireless data transmission, an improved intelligent data transmission and communication algorithm for ship networking is proposed. Firstly, the clustering algorithm is used to cluster all ships, and the optimal cluster head is selected for each cluster. Then, the ship communication networking mode based on position and speed information is established. Particle swarm optimization (PSO) algorithm is used to select the optimal path and realize the fast return of ocean observation data. Finally, the validity of the proposed method is verified by the simulation of experiment. Therefore, it has good engineering practical value.

MSC:
68M10 Network design and communication in computer systems
68T20 Problem solving in the context of artificial intelligence (heuristics, search strategies, etc.)

Keywords:
data transmission; ship networking; clustering algorithm; communication networking; particle swarm optimization

Full Text: DOI