Applying Particle Swarm Optimization to Plan Picking Routing and Order Batching in Distribution Center

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Abstract

The performance of a distribution center is typically judged on throughput-based criteria. However, it is a non-linear objective problem. Compared to previous sophisticated algorithms, the PSO is still at infancy stage. Therefore, in this research, it is developed to apply PSO to route planning and order batching. In order to verify the result, it also compared with the ant system and First Fit-Enveloped Based Bathing (FF-EBB). Overall, the research result will enhance the best route planning of order picking systems in distribution center in order to improve the efficiency of order picking operations.

Keyword：particle swarm optimization, picking routing, order batching