

The location problem of emergency materials in uncertain environment

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Abstract

The hazards and unpredictability of emergencies have made people pay more and more attention to emergency response. A reasonable reserve of emergency materials can play an important role in post-disaster rescue. This paper uses the uncertain comprehensive evaluation method to grade the emergency materials, and establishes a location model for the uncertain emergency materials. The location of the reserve point is determined by maximizing the rescue satisfaction, the maximum number of service demand points under the maximum coverage, and pursuing the minimum sum of the distance from the demand point to the reserve point. Based on the uncertainty theory, the uncertain emergency materials location model is converted into an equivalent deterministic emergency materials location model, and the model is solved by a tabu search algorithm. Finally, a numerical experiment is given to illustrate the idea of the uncertain model.

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