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The optimization of sea transportation system between Japan and China using genetic local search method

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Summary: To optimize sea transportation system between Japan and China, this paper proposes a new method. In this method, two stages of optimization are required. At first stage, the route of each ship is fixed, and amount of freight that each ship transports, is optimized using linear programming. At second stage, the route of each ship is optimized with the indicator of the first stage, using genetic local search that introduces local search in genetic algorithm. Since, the second stage is the combinatorial optimization, computational cost becomes huge, and this paper proposes Adaptive-GLS method for efficient combinatorial optimization. By this two stage optimization, the logistic transportation system is optimized.

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