

Lim, Andrew

The berth planning problem. (English) Zbl 0911.90283

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Summary: Singapore has one of the busiest ports in the world. Berth planning is one of the problems faced by planners. This paper studies the berth planning problem. We first formulate the problem and show that it is NP-complete. We transform the berthing problem to a restricted form of the two-dimensional packing problem, use a graph theoretical representation to capture the problem succinctly, and propose an effective heuristic for the problem. Experimental results show that our heuristic performs well on historical test data.

MSC:

90C27 Combinatorial optimization

90C90 Applications of mathematical programming

90C35 Programming involving graphs or networks

90B06 Transportation, logistics and supply chain management

Cited in **34** Documents

Keywords:

berth planning; two-dimensional packing; heuristic; NP-complete

Full Text: [DOI](#)

References:

[1] M. Garey, D. Johnson, *Computers and Intractability*, Freeman, 1979. · [Zbl 0411.68039](#)

[2] Port of Singapore Authority, *Annual Report 1994*. PSA Corporate Communications Department, 1979.

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