

**Guan, Yongpei; Cheung, Raymond K.**

**The berth allocation problem: models and solution methods.** (English) Zbl 1161.90430  
OR Spectrum 26, No. 1, 75-92 (2004).

Summary: In this paper, we consider the problem of allocating space at berth for vessels with the objective of minimizing total weighted flow time. Two mathematical formulations are considered where one is used to develop a tree search procedure while the other is used to develop a lower bound that can speed up the tree search procedure. Furthermore, a composite heuristic combining the tree search procedure and pair-wise exchange heuristic is proposed for large size problems. Finally, computational experiments are reported to evaluate the efficiency of the methods.

**MSC:**

**90B80** Discrete location and assignment  
**90B35** Deterministic scheduling theory in operations research

Cited in **16** Documents

**Keywords:**

berth allocation; tree search procedure; heuristics

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