

# A Mathematical Model and a Heuristic Algorithm for Berth Planning

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## Abstract

The berth-planning problem is the problem of determining berthing times and positions of containerships in port container terminals. Each vessel requires a specific amount of the space on the berth during a predetermined length of time for unloading and loading containers. A mixed integer linear programming model is formulated for the berth-planning problem. A heuristic procedure is suggested for searching a near optimal solution. Experimental results show that the heuristic algorithm obtains solutions similar to the optimal solutions by the optimization model.