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Thesis Title : Solving Applied in Traveling Salesman Problem by Integer
Linear Programming Relaxation
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Abstract

Sequencing drilled holes and linking wirebare points in a printed circuit board (PCB) and flow shop with no intermediate queues are applications of the traveling salesman problem. Integer Linear Programming (ILP) relaxation for exact solutions have been proposed in the literature. These relaxations perform very well for some instances . The aim of this paper is to evaluate the effectiveness of ILP relaxations and to present frameworks to reduce variables for hard instances in those three applications. The research outcomes illustrate that sequencing linking wirebare points in a PCB has no success with ILP relaxation with no improvement on the upperbound solution obtained by the Farthest Insertion method . But in sequencing drilled points in a PCB , the obtained solution by the reduced variables techniques are much nearer to the computed lowerbound . In case of flow shop with no intermediate queues , the optimal solution can be found by the regular subtour elimination approach.



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