

The location routing problem with arc time windows for terror regions: a mixed integer formulation

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Abstrak

ABSTRACT

In this paper, we introduce a new variant of Location Routing Problem with the name of Location Routing Problem with Arc Time Windows (LRP ATW), which emerges from the need of safe transportation in terror zones. In this specific problem, there are arc time windows on the arcs (roads) for transferring the vehicles like trucks and articulated lorries which means that these roads can be used for a specific period of time during a day. Within the scope of this paper, the problem and assumptions are described, and a Mixed Integer Programming (MIP) formulation is developed to solve the problem. Bounds are also improved using valid inequalities. The quality of the formulation is measured using the test problems in the literature. Computational results show that the proposed MIP formulation gives good quality results in a short computation time.