An inventory routing problem with prioritized deliveries

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Abstract

In this paper we consider a vehicle routing problem in a producer and distributor company of gases with three main products; the company plan their deliveries daily for the north region of Mexico.

Their main costumers are industry and hospitals, which have a time window of service. The company has gas trucks with the same capacity.

Demand and travel time are considered deterministic. The inventory level is monitored to establish the amount of product to deliver.

The problem that we study here wants to garantee the minimum inventory level of the costumer prioritizing hospitals for federal regulation. A mathematical model based on the Inventory Routing Problem (IRP) is presented and the main objective is to minimize the distribution cost. Finally, some preliminary results and the future work are presented

Keywords: Inventory Routing Problem, Prioritized deliveries

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