



SÉMINAIRE CONJOINT AVEC / JOINT SEMINAR WITH

La Chaire de recherche du Canada en distributique et La Chaire de recherche du Canada en logistique et en transport /
The Canada Research Chair in Distribution Management and The Canada Research Chair in Logistics and Transportation

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“ROBUST INVENTORY ROUTING UNDER DEMAND UNCERTAINTY”

Résumé / Abstract

In this talk, we consider a robust inventory routing problem where a supplier distributes a single product to multiple customers facing dynamic uncertain demands over a finite discrete time horizon. The probability distribution of the uncertain demand at each customer is not fully specified. The only available information is that these demands are independent and symmetric random variables which can take some value from their support interval. The supplier is responsible for the inventory management of its customers, has sufficient inventory to replenish the customers, and distributes the product using a capacitated vehicle. Backlogging of the demand at customers is allowed. The problem is to determine the delivery quantities as well as the times and routes to the customers while ensuring feasibility regardless of the realized demands and minimizing the total cost composed of transportation, inventory holding and shortage costs. Using a robust optimization approach, we propose two robust mixed integer programming (MIP) formulations for the problem. We also propose a new MIP formulation for the deterministic (nominal) case of the problem. We implement these formulations within a branch-and-cut algorithm and report results on set of instances adapted from the literature.

Note

Oguz Solyali est un stagiaire postdoctoral à HEC Montréal. Il occupe le bureau 3485 au CIRRELT. / Oguz Solyali is a Postdoctoral Fellow at HEC Montréal. His CIRRELT office number is 3485.
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MERCREDI / WEDNESDAY

**24 mars 2010, 10h30 /
March 24, 2010, 10:30**

**Salle / Room 5441
Pavillon André-Aisenstadt
Université de Montréal**

Bienvenue à tous / Welcome to all

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