



CIRRELT

Séminaire conjoint / Joint Seminar

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

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STRATEGIC FLEET PLANNING FOR CITY LOGISTICS

Abstract: This talk presents the strategic problem of a logistics service provider managing a possibly heterogeneous fleet of vehicles to serve an urban area in the presence of access restrictions. We model the problem as an area-partitioning problem where a rectangular service region has to be divided into sectors, each served by a single vehicle. The length of the routes, which depends on the dimension of the sectors and on customer density in the area, is calculated using a continuous approximation.

The aim is to partition the area and to determine the type of vehicles to use in order to minimize the sum of ownership or leasing, transportation and labor costs.

We formulate the problem as a mixed integer problem and as a dynamic program. We develop efficient algorithms to obtain an optimal solution and present some structural properties regarding the optimal partition of the service region and the set of vehicle types used. We also derive some interesting insights, namely we show that in some cases, traffic restrictions may actually increase the number of vehicles on the streets. Finally we study the benefits of operating a heterogeneous fleet of vehicles.

Note: Anna Franceschetti is a postdoctoral fellow of the Canada Research Chair in Distribution Management, under the supervision of Professor Gilbert Laporte.

JEUDI / THURSDAY

29 octobre 2015 /
October 29th, 2015
10h30

Salle / Room 5441
Pavillon André-Aisenstadt
Université de Montréal

Ouvert à tous / Open to all

Organisateur / Organizer
Gilbert Laporte

