



Webinaire du CIRRELT Webinar
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ON THE OPTIMIZATION OF SUSTAINABLE REVERSE LOGISTICS NETWORK PLANNING UNDER UNCERTAINTY:
AN APPLICATION IN THE CRD (CONSTRUCTION, RENOVATION, DEMOLITION) INDUSTRY

Abstract: In this seminar, I will present different stochastic optimization models for sustainable reverse logistics network design (RLND) under uncertainty with dynamic supply sources' locations. The decision models identify the best strategies to operate and adjust the processing capacity of the existing collection centers (CC) while opening new ones with the appropriate size. In comparison with the previous stochastic optimization models in this area, this study emphasizes the importance of source separation centers to address the challenge of the dynamic supply sources. The availability of materials collected from the supply sources and the recycling rates at the CC are the primary sources of uncertainties. We adopt the Sample Average Approximation procedure to solve stochastic models and perform sensitivity analyses on the number of supply sources, the sample size, and uncertainty targeting the random parameters. The variation in the number of supply sources is mainly used to compare the low-density rural collection zones versus high-density urban areas. Managerial implications are discussed through a case study in the CRD from the province of Quebec. The results suggest significant RLND adjustments that lead to an increase in the average profit by 17.4% and recycle an additional 25.2% of building materials in some cases. Follow this link:

<https://www.cirrelt.ca/videos-externe/20200528AminChaabane.html>

Dr. Amin Chaabane is an Associate professor in the Department of Systems Engineering at École de Technologie Supérieure (ETS). He teaches courses in both Operations and logistics engineering and Automated manufacturing engineering programs. He is the SAP University Alliance coordinator at ETS. He is also an active research member in CIRRELT and CIRODD centers. Prof. Chaabane received a Ph.D. in Industrial Engineering (2011) from École de technologie supérieure, Montreal, Canada. He also received in 2004 a Master of Science (M. Sc.) in Management Science (Logistics and systems) from the Conservatoire Nationale des Arts et Métiers (CNAM), Paris, France and a Bachelor degree (2002) in Industrial Engineering from École Nationale d'Ingénieurs de Tunis (ENIT), Tunis, Tunisia

JEUDI / THURSDAY

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Martin Trépanier

