



# Séminaire du CIRRELT

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## SOLUTION METHODS FOR CENTRALIZED PRODUCTION PLANNING IN AN INTERNATIONAL COMPANY

### Abstract:

This talk presents an integrated approach for the short term supply chain management (SCM) at a fast moving consumer goods production plant. The problem is to determine the production quantities, to provide a detailed production schedule, to trigger the relevant express deliveries of raw material, and to manage the distribution. We propose a linear integer model, which integrates all of these decisions within scheduling, and present the practical insights of its implementation. Such decisions are very sensitive, as they directly impact the costs and the service levels of the company. To find high quality solutions in a reasonable amount of time, various solution methods are proposed, such as a greedy constructive heuristic, two tabu search metaheuristics, a basic variable neighborhood search and an enhanced one using a variable shaking operator. Experiments on realistic instances show that the latter method is efficient and robust. This project is a contribution to the SCM literature (indeed, only few references address the integration of short term decisions) and to the general metaheuristics field.

### Biography:

Nicolas Zufferey is a full professor of operations management at the University of Geneva in Switzerland. His research activities are focused on designing metaheuristics for difficult and large combinatorial optimization problems, with applications mainly in transportation, scheduling, production, inventory management, network design, and telecommunications. He is member of the CIRRELT transportation and logistics research center ([www.cirreлт.ca](http://www.cirreлт.ca)) and of the GERAD decision analysis research center ([www.gerad.ca](http://www.gerad.ca)). He received his BSc and MSc degrees in Mathematics at EPFL (the Swiss Federal Institute of Technology in Lausanne), as well as his PhD degree in operations research (2002). He was then successively a post-doctoral trainee at the University of Calgary (2003 – 2004) and an assistant professor at Laval University (2004 – 2007). He is the (co)author of more than 70 publications (papers in professional journals, proceedings of conferences, and book chapters) and has reviewed papers for 35 international journals. With roughly 40 coauthors, he has had research activities with 18 Universities in Europe and North America, as well as with 13 private companies.

MERCREDI

20 juillet 2016  
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Local 1609  
Pavillon Palasis-Prince  
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Ouvert à tous

**Organisateur:**  
*Yan Cimon*

