



**Séminaire conjoint  
CIRRELT /  
Chaire de Recherche du Canada en Logistique Intégrée**



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**A ROLLING HORIZON FRAMEWORK FOR BERTH ALLOCATION  
AND QUAY CRANE SCHEDULING**

**Abstract:** Container terminals are an essential part of many logistic chains. Due to increasing container traffic, container terminals need to optimize their efficiency. This presentation discusses an important part of container terminal activities: the allocation of vessels to berths and the allocation of quay cranes to vessels. A rolling horizon planning framework is presented for these activities, taking into account vessel priorities, preferred berthing locations and handling time considerations. Both a mixed integer linear programming (MILP) model and a constraint programming (CP) model are developed and solved periodically in an attempt to create robust schedules that effectively absorb arrival and handling time uncertainty.

**Note:** Birger Raa holds a master degree in computer science engineering and a Ph.D. in applied operational research from the University of Gent, Belgium. From October 2007 to December 2012, he was assistant professor at the faculty of Economics and Business Administration of Ghent University. Since January 2013, he is associate professor at the Department of Industrial Systems Engineering and Product Design. He chairs the program committee of the Master of Industrial Engineering and Operations Research. His research focuses on applying operational research techniques to solve integrated planning problems arising in distribution and production logistics.

LUNDI

14 novembre 2016  
10 h 30

Local 1651  
Pavillon Palasis-Prince  
Université Laval

Ouvert à tous

**Organisateur:  
Leandro Coelho**