



**Séminaire conjoint / Joint Seminar**  
Chaire de recherche du Canada en logistique et en transport et  
Chaire de recherche du Canada en distributique



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### OPTIMIZATION IN MARITIME TRANSPORTATION: TWO APPLICATIONS

**Abstract:** In the first part of this talk, we will discuss the vessel crew scheduling problem. In spite of abundant literature on crew scheduling, in particular relating to airlines, literature for maritime applications is scarce. The maritime setting presents challenges due to the variety of tasks to be carried out and long duty times. We will present an exact and an approximate formulation for this problem, as well as a customized improvement heuristic developed to be used in practice for effective solutions. We will conclude this part of the talk with preliminary computational results based on problems generated with an industry partner.

In the second part of this talk, we will discuss offshore wind turbine installation logistics optimization. Due to significant government incentives for renewables, the accessibility of the surrounding seas and the immense potential for energy generation, installing wind farms tens of miles offshore has become very attractive to many energy companies, although there are many unknowns in these big scale projects. We will present a formulation for wind turbine installation logistics, where multiple vessels operate on the installation of tens, if not hundreds, of wind turbines with various constraints from precedence of tasks to varying degrees of limiting weather. We will also discuss a rolling horizon approach being developed for three industry partners, and present variants of the multi-trip vehicle routing problem with non-identical capacitated vehicles.

**Note:** Kerem Akartunali is a John Anderson Research Lecturer (JARL) in Optimization in the Department of Management Science at Strathclyde Business School since 2010.

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VENDREDI / FRIDAY

13 juin 2014 /  
June 13<sup>th</sup>, 2014  
10h30

Salle / Room 5441  
Pavillon André-Aisenstadt  
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