

情報理工学部講演会のお知らせ

数理情報研究科国際化事業で来名されるトロント大学の Dmitry Krass 氏、Zhou Xu 氏の講演会を開催します。ご参加ください。

日時：2012年12月14日（金）15：30 - 17：00

場所：南山大学瀬戸キャンパス H棟1階 H108 セミナー室

1) **Aggregate planning of fleet deployment for liner shipping**

Zhou Xu

Assistant Professor

Department of Logistics and Maritime Studies, Faculty of Business, The Hong Kong Polytechnic University

Abstract: In this talk, we present an aggregate planning model for the deployment of a fleet of container ships to liner shipping services that are rotated around different regions of the world. It aims to maximize the total profit at strategic level, where cargo demands are aggregated by the regions of their origin and destination ports. The proposed model takes into account a joint optimization of decisions on the numbers and speeds of ships deployed for each service, together with the cargo flows. By separating the fuel cost of a ship into two terms, associated with the ship speed and load, respectively, we have obtained a mixed integer programming formulation of the model, so that it can be solved to optimal for up to five regions, which are commonly faced by practitioners in liner shipping. We have further conducted numerical experiments to demonstrate the accuracy of the formulation, the efficiency of the solution method, and the performance of different deployment strategies.

2) **Location and Transshipment Problems**

Dmitry Krass,

Professor of Operations Management and Statistics, Rotman School of Management, University of Toronto

Abstract:

Inventory problems with transshipments, where facilities are allowed to satisfy some of the demand by transshipping available inventory between each other are notoriously hard to analyze. Yet, transshipments are quite common in practice and have the potential for greatly reducing the system operating costs.

Most of the traditional literature on transshipments has focused on deriving optimal replenishment and transshipment policies (under very restrictive assumptions) and have ignored the location aspects altogether. The inventory location models, on the other hand, have not considered transshipments at all.

A recent “breakthrough” in transshipment research has been the application of Infinitesimal Perturbation Analysis (IPA) algorithm – a form of approximate dynamic programming – which has allowed for treatment of much more general problems. We show how this technique can be used to integrate location and transshipment models, which yield interesting managerial insights. We also discuss several approaches rooted in traditional location models that allow for a much more efficient implementation of the IPA-based methods.