

## ACADEMIC SEMINAR

# Aggregate Planning of Fleet Deployment For Liner Shipping

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.

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Dr. Zhou Xu is an Assistant Professor in the Department of Logistics and Maritime Studies in Faculty of Business of the Hong Kong Polytechnic University. He received her Ph.D. from Department of Industrial Engineering and Logistics Management in the Hong Kong University of Science and Technology. His research focuses on the application of operations research and computer science techniques to problems in logistics and supply chain management. He has published more than twenty papers in academic journals, such as Operations Research, Transportation Science and Interfaces. He was awarded an Honorable Mention of TSL Doctoral Dissertation Award at INFORMS 2007.



**Date:** 1 June 2012 (Friday)

**Time:** 10:00 – 11:30

**Venue:** SEK210, 2/F, Simon & Eleanor Kwok Bldg.

**Language:** English

\*\*\* All are Welcome \*\*\*