

The Hong Kong Polytechnic University
Department of Logistics and Maritime Studies
Research Seminar

Online Resource Allocation with Limited Flexibility

by

Dr Xuan WANG
Assistant Professor
School of Business and Management
The Hong Kong University of Science and Technology

Date: 23 September 2016 (Friday)
Time: 10:30am - 11:30am
Venue: Y411, Lee Shau Kee Building
The Hong Kong Polytechnic University

(Conducted in English)

Abstract:

We consider a class of online resource allocation problems in which there are several types of resources with limited initial inventory and several demand classes. The resources are flexible in that each type of resources can serve more than one demand class. In this talk, we focus on a special class of structures with limited flexibility, the long chain design, which has been an important concept in the design of sparse flexible processes. We study the long chain design in an online stochastic environment where the requests are drawn repeatedly and independently from a known probability distribution over the different demand classes. Also, the decision on how to address each request must be made immediately upon its arrival. We show the effectiveness of the long chain design in mitigating supply-demand mismatch under a simple myopic online allocation policy. In particular, we provide an upper bound on the expected total number of lost sales that is irrespective of how large the market size is.

Joint work with Arash Asadpour and Jiawei Zhang.

Bio:

Xuan Wang is an Assistant Professor in Operations Management at the School of Business and Management, The Hong Kong University of Science and Technology. Her main research interests lie in the broad area of decision-making under uncertainty with applications in supply chain optimization and revenue management. Xuan holds a Ph.D. in Operations Management from the Stern School of Business at New York University, and a Bachelor in Operations Research and Industrial Engineering from Tsinghua University, China.

Please email to irene.lam@polyu.edu.hk for enquiries.

All are welcome!