THE UNIVERSITY  OF HONG KONG

Department of Mathematics

Numerical Mathematics and Applied Analysis Group Seminar (NMAA)

Analysis for strategy of closed-loop supply chain with dual recycling channel

Professor Min Huang

Department of Systems Engineering, Northeastern University

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in Room 210, Run Run Shaw Building, HKU

Abstract

In this talk, we investigate optimal strategies of a closed-loop supply chain (CLSC) with dual recycling channel, within which the manufacturer sells products via the retailer in the forward supply chain, while the retailer and the third party competitively collect used products in the reverse supply chain. Based on game theory, we characterize the supply chain performance in terms of the pricing decisions and the recycling strategies for both the decentralized and the centralized channel scenarios. By comparing this work with the existing optimal strategies of the CLSC with single recycling channel (the retailer or the third party), we derive the parameter domain which is defined as the set of competing intensities for which the CLSC with dual recycling channel outperforms the CLSC with single recycling channel from the perspectives of the manufacturer and the consumers, respectively. Moreover, we give some suggestions, which will present paramount social value, to the macro-control policy making by exhaustive numerical analysis. These results can be used as a reference for choosing recycling strategy, the single recycling channel or the dual recycling channel, for collecting used products.

All are welcome

About the speaker:

Dr. Min Huang is a Professor in the Department of Systems Engineering at Northeastern University, China and was a senior visiting scholar in the Department of Industrial and Operations Engineering at University of Michigan, Ann Arbor. She received her B.S degree (Automatic Instrument), M.S degree (Systems Engineering) and PhD degree (Control Theory and Engineering) in 1990, 1993 and 1999 from Northeastern University, China. Her research focuses on the modeling and analysis for the logistics and supply chain system, and meta-heuristics. Her research work has been sponsored by the National Science Foundation of China, and the State Education Ministry China, among others. She has received several recognitions including Distinguished Young Scholars of the National Science Foundation of China, The Operations Research New People Award of the Operations Research Society of China, Henry Fok Education Foundation funded award for the young college teachers (for Research), etc. She has published more than 40 research papers on international Journals. Dr. Huang is currently an associate editor for the Asia Pacific Journal of Operational Research, and a member of INFORMS, POM and MSOM.