# The Hong Kong University of Science and Technology
## Dept of Information Systems, Business Statistics and Operations Management

## Frontiers in Operations Management Workshop



**Approximate Methods for a Class of Operations Management Problems**
by
**Prof Miao Song**
**Professor**
**Department of Logistics and Maritime Studies**
**The Hong Kong Polytechnic University**

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| **Date** | : | **2 December 2022 (Friday)** |
| **Time** | : | **11:30 AM – 12:15 PM** |
| **Venue** | : | **Room G012, LSK Business Building, HKUST** |

**Abstract**:

Stochastic dynamic programming has been widely applied to model operations management problems. For these models, the single-period profit/cost function is fundamental to determining an optimal control policy. In practice, many of these profit/cost functions are quite complex and make the optimal policies too complicated for managers to implement. To address the challenge, we introduce a concept named weak K-convexity, which generalizes many variations of convexity in the literature, and establish some preservation results of weak K-convexity that can be used in dynamic programming setting. These findings lead to well-structured heuristic policies with worst-case performance bounds for a class of periodic-review inventory control or joint pricing and inventory control problems. Numerical studies show that our heuristic policies perform strongly.

**Bio**:

Prof Miao Song got her PhD degree from MIT. She is currently a professor in the Department of Logistics and Maritime Studies at the Hong Kong Polytechnic University. Her research focuses on applications of optimization methods in operations management, particularly inventory optimization and supply chain network design problems. She has published in top journals such as Operations Research, Management Science, Production and Operations Management, and INFORMS Journal on Computing.

All interested are welcome!
Enquiries: Dept of ISOM