

# VORträge zum Operations Research

Kolloquium des Instituts für Operations Research

*Zeit:* Mittwoch, 24. Oktober 2018, 13:00 Uhr

*Ort:* Raum 320, Gebäude 09.21

*Es spricht:* Prof. Yun Fong LIM, Singapore Management University (SMU)

*Zum Thema:* **Inventory Management Based on Target-Oriented Robust Optimization**

*Abstract:* We propose a target-oriented robust optimization approach to solve a multi-product, multi-period inventory management problem subject to ordering capacity constraints. We assume the demand for each product in each period is characterized by an uncertainty set, which depends only on a reference value and the bounds of the demand. Our goal is to find an ordering policy that maximizes the sizes of all the uncertainty sets such that all demand realizations from the sets will result in a total cost lower than a pre-specified cost target. We prove that a static decision rule is optimal for an approximate formulation of the problem, which significantly reduces the computation burden. By tuning the cost target, the resultant policy can achieve a balance between the expected cost and the associated cost variance. Numerical experiments suggest that, although only limited demand information is used, the proposed approach performs comparably to traditional methods based on dynamic programming and stochastic programming. More importantly, our approach significantly outperforms the traditional methods if the latter assume inaccurate demand distributions. We demonstrate the applicability of our approach through two case studies from different industries.

*Bio:*

Yun Fong LIM is Associate Professor of Operations Management at the Lee Kong Chian School of Business, Singapore Management University (SMU). He is also Chang Jiang Chaired Professor, and has been a Lee Kong Chian Fellow and an NOL Fellow. Yun Fong's research has appeared in Operations Research, Management Science, Manufacturing and Service Operations Management, and Production and Operations Management. He has delivered keynote and plenary speeches in several international conferences. In addition, his work has received funding by MOE and A\*STAR and media coverage by The Business Times, Capital 95.8, and 93.8 Live. His current research interests include e-commerce and marketplace analytics, inventory management, warehousing and fulfillment, sustainable urban logistics, and flexible workforce and resource management. Yun Fong is a recipient of the SMU Teaching Excellence Innovative Teacher Award. He teaches both undergraduate and postgraduate courses in Operations Management. He has provided consulting services and executive development to corporations such as Maersk, McMaster-Carr Company, Resorts World Sentosa, Schneider Electric, Temasek Holdings, and Zalora. Yun Fong obtained both his PhD and MSc degrees in Industrial and Systems Engineering from the Georgia Institute of Technology.

**Die Vorträge zum Operations Research wenden sich an alle Interessierten!**

Nach dem Vortrag laden wir Sie gerne zu einem Gespräch mit dem Referenten und einer Tasse Kaffee ein.

Bei Rückfragen wenden Sie sich bitte an:

Prof. Dr. Steffen Rebennack, Institut für Operations Research.