

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

## **Fair Risk Pooling and Sharing**

by

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**Date: 17 November 2017 (Friday)**  
**Time: 10:30am - 11:30am**  
**Venue: R601, Shirley Chan Building**  
**The Hong Kong Polytechnic University**

**(Conducted in English)**

### **Abstract:**

Risk pooling and sharing are commonly used strategies for firms to mitigate their risks due to various uncertainties. For example, retailers may serve different demand streams using centralized inventory to reduce inventory cost; wind power producers may form coalitions to reduce aggregate power output variability; and insurance companies can share risk in reinsurance market to diversify their risk. In these settings, a key issue is how to design sharing mechanisms to fairly allocate the cost and/or risk among the players. In this talk, I will cast this problem into cooperative game theory framework and propose fair sharing mechanisms using duality theory in optimization. I will also identify conditions under which the sharing mechanisms have certain monotonicity property.

### **Bio:**

Xin Chen is a professor, an Abel Bliss Faculty Scholar and the Jerry S. Dobrovolny Faculty Scholar at the University of Illinois at Urbana-Champaign. He obtained his PhD from MIT in 2003, MS from Chinese Academy of Sciences in 1998 and BS from Xiangtan University in 1995. His research interest lies in optimization, data analytics, revenue management and supply chain management. He received the Informs revenue management and pricing section prize in 2009. He is the coauthor of the book "The Logic of Logistics: Theory, Algorithms, and Applications for Logistics and Supply Chain Management (Second Edition & Third Edition, 2005 & 2014)", and serving as the associate editor of several journals including Operations Research, Management Science, Mathematics of Operation Research and Production and Operations Management.

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**All are welcome!**