中国科学院数学与系统科学研究院

应用数学研究所

华罗庚应用数学青年论坛

报告题目： **Simultaneous Optimal Transport**

报 告 人： 王若度 教授

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时　　间： **2023 年 3 月 28 日 (星期二) 上午 9:00--10:30**

地　　点： **腾讯会议 731-288-405**

摘　　要： We propose a general framework of mass transport between vector-valued measures, which will be called simultaneous mass transport. The new framework is motivated by the need to transport resources of different types simultaneously, i.e., in single trips, from specified origins to destinations. In terms of matching, one needs to couple two groups, e.g., buyers and sellers, by meeting supplies and demands of different goods at the same time. The mathematical structure of simultaneous transport is quite different from the classic setting of optimal transport, leading to many new challenges. The Monge and Kantorovich formulations are contrasted and connected. Existence, uniqueness, and duality theorems are established, and a notion of Wasserstein distance in this setting is introduced. We illustrate the theory with a few applications in economics and finance. This talk is based on joint work with Zhenyuan Zhang.

个人简介： Dr. Ruodu Wang is University Research Chair, Sun Life Fellow, and Professor at the University of Waterloo in Canada. He received his PhD in Mathematics (2012) from the Georgia Institute of Technology, after completing his Bachelor (2006) and Master's (2009) degrees at Peking University. He serves on the editorial board of seven leading journals in actuarial science, operations research and mathematical economics, including Co-Editor of the European Actuarial Journal, Co-Editor of ASTIN Bulletin - The Journal of the International Actuarial Association, and Associate Editor of Mathematics of Operations Research. He is an affiliated member of RiskLab at ETH Zurich. He is the inaugural winner of the SOA Actuarial Science Early Career Award (2021) from the Society of Actuaries, and a Fellow of the Institute of Mathematical Statistics (elected 2022).