

## *Business Distinguished Scholar Seminar Series*

# *Decisions with Several Objectives under Uncertainty: Sufficient Bounds for Multivariate Almost Stochastic Dominance*

When faced with an important choice, decision makers are typically interested in more than just one attribute. For example, a company choosing between two risky projects, A and B, might be interested in the net present value (NPV) of profits for the first five years and the market share (MS) at the end of the fifth year. Traditional decision analysis would suggest: a) assessing the bivariate distribution of NPV and MS for each project and b) eliciting the two-attribute utility function of the company. Our approach partially bypasses these steps.

We develop sufficient bounds for Multivariate Almost Stochastic Dominance to provide a partial ranking of a set of multivariate distributions representing different alternatives that are under consideration in a decision-making problem under uncertainty. The partial ranking can simplify decision making by eliminating some of the alternatives. We also provide a path to a complete order which, if attainable, can recommend a single alternative. Some of our bounds require only means and variances of the marginal distributions.



## *Professor Ilia Tsetlin*

Professor of Decision Sciences, INSEAD

Ilia M. Tsetlin is a Professor of Decision Sciences at INSEAD. His teaching and research interests are in prescriptive decision making emerging from normative analysis. Two recent research focuses are generic properties of preferences (multiattribute utility and stochastic dominance) and search, deadlines, and the role of uncertainty. Other research streams are related to negotiation, auction theory and collective choice. His work has been published in a number of academic journals including Management Science, Operations Research, Journal of Risk and Uncertainty, Journal of Economic Theory, Psychological Review, Games and Economic Behavior, and Social Choice and Welfare. He currently serves as a Department Editor in Management Science.



**Date:** 6 May 2021 (Thursday)

**Time:** 16:00 – 17:30 (HK Time)

**Venue:** Zoom meeting  Meeting ID: 913 0293 9385 Passcode: 29315989  
Please join Zoom Meeting, link: <https://lingnan.zoom.us/j/91302939385>

**Language:** English

\*\*\* All are Welcome \*\*\*