



Canadian Operational Research Society
Société Canadienne de Recherche Opérationnelle

SUMMER SCHOOL ON DYNAMIC DISCRETE CHOICE MODELS: ECONOMETRIC MODELS AND OPERATIONS RESEARCH METHODS

JUNE 10-12, 2015

Université de Montréal, Montréal, Canada

PAVILLON ANDRÉ-AISENSTADT

Room 5441 - Presentations

Room 5448 - Breakfast and Coffee breaks

Room 1180 - Lunches

PROGRAM

WEDNESDAY, JUNE 10, 2015

9:00-9:30	WELCOME AND BREAKFAST
9:30-10:45	Introduction to discrete choice modelling (Cinzia Cirillo) Review of state-of-the-art and recent research directions <ul style="list-style-type: none">➤ Theories of individual choice behavior and random utility theory➤ Multi-dimensional choice models: multinomial logit and nested logit models➤ Accommodating unobserved population heterogeneity in choice behavior➤ Joint stated preference and revealed preference modeling
10:45-11:00	COFFEE BREAK
11:00-12:15	Deterministic dynamic programming (Fabian Bastin) <ul style="list-style-type: none">➤ Finite horizon, Bellman principle➤ Shortest path➤ Infinite horizon
12:15-13:30	LUNCH
13:30-14:45	Stochastic optimization (Fabian Bastin) <ul style="list-style-type: none">➤ Two-stage stochastic programming➤ Value of perfect information and stochastic solution➤ Multistage optimization under uncertainty➤ Stochastic programming➤ Dynamic programming: Bellman principle, concepts in approximate dynamic programming
14:45-15:15	COFFEE BREAK
15:15-16:30	Keynote by Michel Gendreau

THURSDAY, JUNE 11, 2015

8:30-9:00	BREAKFAST
9:00-10:00	Introduction to dynamic discrete choice models: from static to dynamic (Emma Frejinger) <ul style="list-style-type: none">➤ Introduction of assumptions behind Rust's model ("bus engine replacement")➤ Illustration using the simple case of route choice
10:00-10:20	COFFEE BREAK
10:20-11:20	Dynamic discrete choice models: real case studies (Cinzia Cirillo) A real case study on the adoption of new vehicle technology <ul style="list-style-type: none">➤ Data collection: capturing changes in travel behavior over time.➤ Model Estimation: static and dynamic variables➤ Comparison with static model and validation.
SHORT BREAK	
11:30-12:30	Maximum likelihood estimation and non-linear optimization (Fabian Bastin) <ul style="list-style-type: none">➤ Concept of local and global optima➤ Descent and Newton methods➤ Trust-region and linesearch techniques
12:30-13:30	LUNCH
13:30-15:00	Solving and estimating discrete choice models using NFXP (John Rust, Bertel Schjerning, Fedor Iskhakov)
15:00-15:15	COFFEE BREAK
15:15-16:30	Keynote by Mogens Fosgerau

FRIDAY, JUNE 12, 2015

8:30-9:00	BREAKFAST
9:00-10:30	Keynote by John Rust and Bertel Schjerning
10:30-11:00	COFFEE BREAK
11:00-12:30	Solving and Estimating and Estimating Discrete-Continuous Choice models using the Endogenous Grid-point Method (Fedor Iskhakov)