

Winter Workshop on Operations Research, Finance and Mathematics, 2024

February 29 – March 4



Invited Speakers:

Konstantin Borovkov, Sebastian Jaimungal, Juri Hinz,
Yuri Kabanov, Nino Kordzakhia, Yue Kuen Kwok, Vincent Liang,
Alexander Novikov, and Mikhail Zhitlukhin.

Committee: Yukio Muromachi, Katsumasa Nishide, Takashi Shibata, Kohta Takehara, Tomonori Uchiyama, Kyoko Yagi, Toshinao Yoshiba, Tomooki Yuasa,

Local Organizer: Teruyoshi Suzuki

Venue: Asarigawaonsen Hotel, Otaru city, Hokkaido, Japan

Registration Fee: JPY 30,000

Organized by:

The Operations Research Society of Japan, Hokkaido Branch

Sponsor:

- ◆ Research Center for Quantitative Finance, Tokyo Metropolitan University
- ◆ JSPS Grant-in-Aid for Scientific Research (B) (PI: T. Suzuki)

Schedule

All sessions are held in the **3rd floor** conference room.

Feb. 28 (Wed)

18:30 Special dinner starts in the Large Hall on the **1st floor**.

Feb. 29 (Thu)

7:30 – 8:30 Breakfast (Large Hall)

Lecture

9:00 - 12:00 Ryo Miyata (Canceled)

Workshop

Chair: Youri Kabanov

14:00-15:00 Alexander Novikov, On parameter estimation diffusion processes: revisiting the sequential and fixed sample time approaches.

15:00-16:00 Masaaki Fukasawa, Backward stochastic difference equations on lattices with application to market equilibrium analysis.

Break

Chair: Takanori Adachi

16:15-17:15 Vincent Liang, On boundary crossing probabilities of diffusion processes.

17:15-18:15 Makoto Shimoshimizu, Trade execution games in a Markovian environment

18:30 Dinner starts in the Large Hall.

Mar. 1 (Fri)

7:30 – 8:30 Breakfast (Large Hall)

Lecture

9:00 - 12:00 Ryo Miyata (Canceled)

Workshop

Chair: Sebastian Jaimungal

14:00-15:00 Katsumasa Nishide, Competition in Liquidity Provision:
Analysis of High-Frequency Market-Making and Policy Implications

15:00-16:00 Toshinao Yoshiba, Tail dependence of copulas for financial risk
factors

Break

Chair: Vincent Liang

16:15-17:15 Nino Kordzakhia, On Maximal Inequalities and their
Applications.

17:15-18:15 Takanori Adachi, Hierarchical Structure of Uncertainty.

18:30 Dinner starts in the Large Hall.

Mar. 2 (Sat)

7:30 – 8:30 Breakfast (Large Hall)

Lecture (Japanese Language)

9:00 - 12:00 Katsumasa Nishide 「債券投資分析」

Workshop

Chair: Alexander Novikov

14:00-15:00 Kakeru Ito, The dynamics of tail dependence structure among multi-asset classes and its significance for portfolio management.

15:00-16:00 Konstantin Borovkov, Large deviation probabilities for random walks: Light vs heavy tails.

Break

Chair: Yue Kuen Kwok

16:15-17:15 Tomooki Yuasa, Second order unbiased simulation methods for Bally-Kohatsu's backward type and Henry-Tan-Touzi type.

17:15-18:15 Juri Hinz, Modelling Interest Rates with Forward Market Models.

18:30 Special Dinner starts in the Large Hall.

Mar. 3 (Sun)

7:30 – 8:30 Breakfast (Large Hall)

Local Workshop (Japanese Language)

Chair: 八木恭子

8:40 - 9:10 石井一成 「地域銀行の気候変動リスクに関する分析」

9:10 - 9:40 中村伊知雄 「預金取扱金融機関における債務者区分にかかる格付遷移行列の一因子表現を用いたフォーワードルッキングな一般貸倒引当金の算出」

9:40 - 10:10 兼子晃寛 「スパースグリッドを用いた後退確率微分方程式のマルチレベル空間離散化手法」

Break

Chair: 湯浅智意

10:30 - 11:00 山崎太裕 「Hawkes 過程に従う取引事象における Market Maker のモデルリスク評価」

11:00 - 11:30 西崎薫 「コモディティ市場におけるファクターの特徴とファクター間の関係性」

11:30 - 12:00 姫野公佐 「投資信託の資金フローに関わる要因分析」

Workshop

Chair: Juri Hinz

14:00-15:00 Yuri Kabanov, Optimal pair trading: consumption-investment problem.

15:00-16:00 Chiaki Hara, An Arrow-Pratt-Type Measure of Ambiguity Aversion.

Break

Chair: Mikhail Zhitlukhin

16:15-17:15 Takashi Shibata, Does debt-equity financing accelerate investments faster than all-equity financing? A real options framework.

17:15-18:15 Yue Kuen Kwok, Analytic solvability and efficient numerical schemes for pricing exotic derivatives under general stochastic volatility models.

18:30 Dinner starts in the Large Hall

Mar. 4 (Mon)

7:30 – 8:30 Breakfast (Large Hall)

Lecture (Japanese Language)

9:00 - 12:00 Katsumasa Nishide 「債券投資分析」

Workshop

Chair: Nino Kordzakhia

14:00-15:00 Kohta Takehara, Analysis on Structure of Decentralized Exchanges.

15:00-16:00 Mikhail Zhitlukhin, Convergence of forecasts in prediction markets.

Break

Chair: Konstantin Borovkov

16:15-17:15 Ryozi Takano, A partial rough path space for rough volatility

17:15-18:15 Sebastian Jaimungal, Minimal Kullback-Leibler Divergence for Constrained Levy-Ito Processes and Applications.

18:15 Closing address by Tomonori Uchiyama, Director of Research Center for Quantitative Finance, Tokyo Metropolitan University, Japan

18:30 Special dinner starts in the Large Hall

The following options are available for LUNCH:

- (1) Two restaurants in the ski resort.
- (2) The restaurant in the Classe Hotel (Next to our hotel)
- (3) Order to our hotel by **14:00 the day before**. A boxed lunch or something will be served for 1000 yen in the restaurant or the large hall at **12:00**.