Workshop II: The Mathematics of High Frequency Financial Markets: Limit Order Books, Frictions, Optimal Execution and Program Trading

Monday April 13, 2015

8:00–9:00 *Check-In/Breakfast (Hosted by IPAM)*

9:00–9:10 **Charles Lehalle** (Capital Fund Management)
Market Microstructure in Practice: Overview

9:10–10:20 **Charles Lehalle** (Capital Fund Management)
Market Microstructure in Practice: Why and how to trade optimally in a fragmented market - Part I

10:20–10:40 *Break*

10:40–12:00 **Charles Lehalle** (Capital Fund Management)
Market Microstructure in Practice: Why and how to trade optimally in a fragmented market - Part II

12:00–1:30 *Lunch (on your own)*

1:30–2:50 **Charles Lehalle** (Capital Fund Management)
Market Microstructure in Practice: Why and how to trade optimally in a fragmented market - Part III

3:00–3:30 *Break*

3:30–4:20 **Aurelien Alfonsi** (École Nationale des Ponts-et-Chaussées)
Dynamic optimal execution in a mixed-market-impact Hawkes price model

4:30–6:00 *Reception (Location: IPAM Lobby)*

Tuesday April 14, 2015

8:00–9:00 *Check-In/Breakfast (Hosted by IPAM)*

9:00–9:50 **Xin Guo** (University of California, Berkeley (UC Berkeley))
Dynamics of order positions and related queues in limit order books

10:00–10:50 **Frederic Abergel** (École Centrale de Paris)
Mathematical properties of limit order books modelled by Hawkes processes

11:00–11:30 *Break*

(Tuesday schedule continued on next page)

(Tuesday schedule continued from previous page)

11:30–12:20 **Sophie Laruelle** (Université Paris-Est Créteil (UPEC))
Optimal Execution and Sochastic Approximation : Learning by Trading

12:30–2:00 *Lunch (on your own)*

2:00–2:50 **Alvaro Cartea** (University College London)
A Closed-Form Execution Strategy to Target VWAP

3:00–3:50 **Juan (Julie) Wu** (University of Georgia)
International Evidence on Algorithmic Trading

4:00–4:30 *Break*

4:30–5:20 **Michael Ludkovski** (University of California, Santa Barbara (UC Santa Barbara))
Connecting Order Flow with Execution Costs

Wednesday April 15, 2015

8:00–9:00 *Check-In/Breakfast (Hosted by IPAM)*

9:00–9:50 **Sebastian Jaimungal** (University of Toronto)
Mean-Field Game Strategies for a Major-Minor Agent Optimal Execution Problem

10:00–10:50 **Austin Gerig** (U.S. Securities and Exchange Commission)
Too Fast or Too Slow? Determining the Optimal Speed of Financial Markets

11:00–11:30 *Break*

11:30–12:20 **Robert Almgren** (Quantitative Brokers and NYU)
Using a simulator to develop futures and bond algorithms

12:30–2:00 *Lunch (on your own)*

2:00–2:50 **Huyên Pham** (Université de Paris VII (Denis Diderot))
An optimal trading problem in intraday electricity markets

3:00–3:50 **Jianfeng Zhang** (University of Southern California (USC))
A dynamic approach for some time inconsistent problems

4:00–4:30 *Break*

4:30–5:20 **Charles Lehalle** (Capital Fund Management)
Q & A Session

Thursday April 16, 2015

8:00–9:00 *Check-In/Breakfast (Hosted by IPAM)*

9:00–9:50 **Mathieu Rosenbaum** (Université de Paris VI (Pierre et Marie Curie))
Volatility is rough

10:00–10:50 **Sasha Stoikov** (Cornell University)
Estimating the cost of latency in trading

11:00–11:30 *Break*

11:30–12:20 **Sergey Nadtochiy** (University of Michigan)
Modeling Limit Order Book via Mean Field Games

12:30–2:00 *Lunch (on your own)*

2:00–2:20 **Ioane Muni Toke** (University of New Caledonia)
Stationary distributions in Poisson limit order book models

2:30–2:50 **Maria Alessandra Crisafi** (University College London)
Dark-pool perspective of optimal market making

3:00–3:30 *Break*

3:30–3:50 **Eyal Neuman** (Hong Kong University of Science and Technology)
Optimal Portfolio Liquidation in Target Zone Models and Catalytic Superprocesses

4:00–4:20 **Dmytro Karabash**
Hawkes-type HFT implies price impact

Friday April 17, 2015

8:00–9:00 *Check-In/Breakfast (Hosted by IPAM)*

9:00–9:50 **René Carmona** (Princeton University)
Trading Frictions in High Frequency Markets

10:00–10:50 **Alexander Schied** (Universität Mannheim)
A hot-potato game under transient price impact

11:00–11:30 *Break*

11:30–12:20 **Jin Ma** (University of Southern California (USC))
Order Book Model and Related Optimal Liquidation Problem

12:30 *Conclusion*