

**WINTER SCHOOL ON  
THEORY AND PRACTICE OF OPTIMAL STOPPING  
AND FREE BOUNDARY PROBLEMS**

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**WORKSHOP ON STOCHASTIC ANALYSIS, CONTROL AND  
MATHEMATICAL FINANCE**

LEEDS, 13TH–17TH JANUARY 2020

PROGRAMME

**Monday 13th of January**

8.15 - 9.15 - Registration

——[Morning session]——

9.15 - 10.45 - Damien Lamberton:

*Variational inequalities for optimal stopping* (lecture 1)

10.45 - 11.00 - Break

11.00 - 12.30 - Mihalis Zervos:

*Continuous Time Contract Theory Models* (lecture 1)

12.30 - 13.45 - lunch break

——[Afternoon session]——

13.45 - 15.15 - Erik Ekström:

*Optimal stopping games* (lecture 1)

15.15 - 15.30 - Break

15.30 - 16.30 - Mihalis Zervos:

*Continuous Time Contract Theory Models* (lecture 2)

16.30 - 16.50 - Break

——[Contributed talks by students]——

16.50 - 17.10 - Benjamin Robinson (University of Bath)

*An SDE with no strong solution arising from the stochastic control of martingales in a radially symmetric environment*

17.10 - 17.30 - Ruiqi Liu (University of Warwick)

*A Mathematical Model to Technical Analysis*

17.30 - 17.50 - Alessandro Milazzo (Imperial College London)

*Optimal stopping for the exponential of a Brownian bridge*

**Tuesday 14th of January****——[Morning session]——**

9.00 - 10.30 - Damien Lamberton:

*Variational inequalities for optimal stopping* (lecture 2)

10.30 - 10.45 - Break

10.45 - 12.15 - Mihalis Zervos:

*Continuous Time Contract Theory Models* (lecture 3)

12.15 - 13.30 - lunch break

**——[Afternoon session]——**

13.30 - 15.00 - Erik Ekström:

*Optimal stopping games* (lecture 2)

15.00 - 15.15 - Break

15.15 - 16.15 - Damien Lamberton:

*Variational inequalities for optimal stopping* (lecture 3)

16.15 - 16.30 - Break

**——[Contributed talks by students]——**

16.30 - 16.50 - Bhudisaksang Theerawat (University of Oxford)

*Online drift estimation of Lévy driven diffusion*

16.50 - 17.10 - Abel Guada Azze (University Carlos III of Madrid)

*Optimal exercise for American options under pinning effect*

17.10 - 17.30 - Cheng Cai (University of Leeds)

*Optimal hedging for American put options with a single trade*

17.30 - 17.50 - Jingsi Xu (University of Manchester)

*Optimal Mean-Variance Portfolio Selection with No Short-Selling Constraint*

**Wednesday 15th of January**  
**Workshop on Stochastic Analysis, Control and Mathematical Finance**

8.30 - 9.15 - Registration

———[Session]———

9.15 - 10.00 - Mihalis Zervos (London School of Economics):

*A principal-agent model with costly renegotiation*

10.00 - 10.20 - Andrew Allan (ETH Zurich)

*Parameter Uncertainty in Stochastic Filtering*

10.20 - 10.40 - Junkee Jeon (Kyung Hee University)

*Optimal Insurance with Limited Commitment in a Finite Horizon*

10.40 - 11.15 - Coffee break

11.15 - 12.00 - Damien Lamberton (Université Paris Est - Marne-la-Vallée):

*Variational inequalities in the Heston model*

12.00 - 12.20 - Christina Zou (University of Oxford)

*A free boundary representation of Root's and Rost's solutions to the Skorokhod embedding problem for Markov processes*

12.20 - 12.40 - Konstantinos Dareiotis (University of Leeds)

*Approximation of stochastic equations with irregular drift*

12.40 - 14.15 - Lunch + Discussion Time

(RSS Applied Probability Section Meeting)

14.15 - 15.00 - Erik Ekström (University of Uppsala):

*A Bayesian fraud detection problem*

15.00 - 15.20 - Jingjie Zhang (University of Michigan)

*On the Notions of Equilibria for Time-Inconsistent Stopping Problems in Continuous Time*

15.20 - 15.40 - Yufei Zhang (Oxford)

*Penalty schemes and policy iteration for stochastic hybrid control problems*

15.40 - 16.00 - José Manuel Pedraza Ramirez (London School of Economics)

*Predicting in a  $L^p$  sense the last zero of a spectrally negative Lévy process*

16.00 - 16.30 - Coffee break

16.30 - 17.15 - [TBC] Goran Peskir (University of Manchester):

*Optimal real-time detection of a drifting Brownian coordinate*

17.15 - 17.35 - Yuqiong Wang (University of Uppsala)

*Sequential Testing and Quickest Detection Problems for a Multi-Dimensional Wiener Process*

17.35 - 17.55 - Sonya Javadi (Dogus University)

*An Optimal Stopping Approach for the End-of-Life Inventory Problem*

**Thursday 16th of January****——[Morning session]——**

9.00 - 10.30 - Damien Lamberton:

*Variational inequalities for optimal stopping* (lecture 4)

10.30 - 10.45 - Break

10.45 - 12.15 - Mihalis Zervos:

*Continuous Time Contract Theory Models* (lecture 4)

12.15 - 13.30 - lunch break

**——[Afternoon session]——**

13.30 - 15.00 - Erik Ekström:

*Optimal stopping games* (lecture 3)

15.00 - 15.15 - Break

15.15 - 16.15 - Erik Ekström:

*Optimal stopping games* (lecture 4)

16.15 - 16.30 - Break

**——[Contributed talks by students]——**

16.30 - 16.50 - Marcos Leutscher (ENSAE ParisTech)

*Mean-Field Games with optimal stopping and continuous control: a relaxed solution approach*

16.50 - 17.10 - Nikita Merkulov (University of Leeds)

*Value of an optimal stopping game with asymmetric information*

17.10 - 17.30 - Younhee Lee (Chungnam National University)

*Real option under a regime-switching jump-diffusion model on finite time horizon*

**Friday 17th of January****——[Morning session]——**

9.00 - 10.30 - Mihalis Zervos:

*Continuous Time Contract Theory Models* (lecture 5)

10.30 - 10.45 - Break

10.45 - 12.15 - Damien Lamberton:

*Variational inequalities for optimal stopping* (lecture 5)

12.15 - 13.30 - lunch break

**——[Afternoon session]——**

13.30 - 15.00 - Erik Ekström:

*Optimal stopping games* (lecture 5)

15.00 - 15.15 - Break

15.15 - 16.15 - Tutorial:

*Solution to selected questions* (tutorial 1)

16.15 - 16.30 - Break

16.30 - 17.30 - Tutorial:

*Solution to selected questions* (tutorial 2)

17.30 - Concluding remarks