

Graduate Summer School: Mean Field Games and Applications

Monday June 18, 2018

- 8:00–9:00 *Check-In/Light Breakfast (Hosted by IPAM)*
- 9:00–10:00 **Wilfrid Gangbo** (University of California, Los Angeles (UCLA))
Rudiments of Optimal Transport and Mean Field Games I
- 10:10–10:40 *Recitation: Alpár Mészáros*
- 10:40–11:00 *Break*
- 11:00–12:00 **Wilfrid Gangbo** (University of California, Los Angeles (UCLA))
Rudiments of Optimal Transport and Mean Field Games II
- 12:10–12:40 *Recitation: Alpár Mészáros*
- 12:40–2:30 *Lunch (on your own)*
- 2:30–3:30 **Yann Brenier** (Centre National de la Recherche Scientifique (CNRS))
Optimal transport viewed as an elementary limit case of MFG: part I
- 3:40–4:10 *Recitation: Alpár Mészáros*
- 4:10–6:00 *Poster Session & Reception (Hosted by IPAM)*

Tuesday June 19, 2018

- 8:00–9:00 *Check-In/Breakfast (Hosted by IPAM)*
- 9:00–10:00 **Yann Brenier** (Centre National de la Recherche Scientifique (CNRS))
Optimal transport viewed as an elementary limit case of MFG: part II
- 10:10–10:40 *Recitation: Alpár Mészáros*
- 10:40–11:00 *Break*

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- 11:00–12:00 **Tamer Basar** (University of Illinois at Urbana-Champaign)
Stochastic Differential Games in Finite and Infinite Population Regimes I
- 12:10–12:40 *Recitation: Yat Tin Chow*
- 12:40–2:10 *Lunch (on your own)*
- 2:10–3:10 **Daniel Lacker** (Columbia University)
Probabilistic compactification methods for mean field games I
- 3:20–3:50 *Recitation: Daniel Lacker*
- 3:50–4:00 *Break*
- 4:00–5:00 **Yat Tin Chow** (University of California, Los Angeles (UCLA))
A discussion of some algorithms for Hamilton-Jacobi equations in density space I

Wednesday June 20, 2018

- 8:00–9:00 *Check-In/Breakfast (Hosted by IPAM)*
- 9:00–10:00 **Tamer Basar** (University of Illinois at Urbana-Champaign)
Stochastic Differential Games in Finite and Infinite Population Regimes II
- 10:10–10:40 *Recitation: Yat Tin Chow*
- 10:40–11:00 *Break*
- 11:00–12:00 **Tamer Basar** (University of Illinois at Urbana-Champaign)
Stochastic Differential Games in Finite and Infinite Population Regimes III
- 12:10–12:40 *Recitation: Yat Tin Chow*
- 12:40–2:30 *Lunch (on your own)*
- 2:30–3:30 **Marie-Therese Wolfram** (University of Warwick, RICAM)
Mean field game models in pedestrian dynamics I
- 3:40–4:10 *Recitation: Marie-Therese Wolfram*

Thursday June 21, 2018

- 8:00–9:00 *Check-In/Breakfast (Hosted by IPAM)*
- 9:00–10:00 **Daniel Lacker** (Columbia University)
Probabilistic compactification methods for mean field games II
- 10:10–10:40 *Recitation: Daniel Lacker*
- 10:40–11:00 *Break*
- 11:00–12:00 **Daniel Lacker** (Columbia University)
Probabilistic compactification methods for mean field games III
- 12:10–12:40 *Recitation: Daniel Lacker*
- 12:40–2:10 *Lunch (on your own)*
- 2:10–3:10 **Marie-Therese Wolfram** (University of Warwick, RICAM)
Mean field game models in pedestrian dynamics II
- 3:20–3:50 *Recitation: Marie-Therese Wolfram*
- 3:50–4:00 *Break*
- 4:00–5:00 **Yat Tin Chow** (University of California, Los Angeles (UCLA))
A discussion of some algorithms for Hamilton-Jacobi equations in density space II

Friday June 22, 2018

- 8:00–9:00 *Check-In/Breakfast (Hosted by IPAM)*
- 9:00–10:00 **Marie-Therese Wolfram** (University of Warwick, RICAM)
Boltzmann mean field games I
- 10:10–10:40 *Recitation: Marie-Therese Wolfram*
- 10:40–11:00 *Break*
- 11:00–12:00 **Daniel Lacker** (Columbia University)
Probabilistic compactification methods for mean field games IV
- 12:10–12:40 *Recitation: Daniel Lacker*
- 12:40–2:00 *Lunch (on your own)*
- 2:00–3:00 **Marie-Therese Wolfram** (University of Warwick, RICAM)
Boltzmann mean field games II
- 3:10–3:40 *Recitation: Marie-Therese Wolfram*

Monday June 25, 2018

- 8:00–9:00 *Check-In/Breakfast (Hosted by IPAM)*
- 9:00–10:00 **Diogo Aguiar Gomes** (King Abdullah Univ. of Science and Technology (KAUST))
Explicit solutions for MFGs
- 10:10–10:40 *Recitation: Levon Nurbekyan*
- 10:40–11:00 *Break*
- 11:00–12:00 **Yann Brenier** (Centre National de la Recherche Scientifique (CNRS))
Link between MFG and initial value problems: part I
- 12:10–12:40 *Recitation: Alpár Mészáros*
- 12:40–2:30 *Lunch (on your own)*
- 2:30–3:30 **Hamidou Tembine** (New York University)
Linear-quadratic mean-field-type games: Direct method I
- 3:40–4:10 *Recitation: Wuchen Li*

Tuesday June 26, 2018

- 8:00–9:00 *Check-In/Breakfast (Hosted by IPAM)*
- 9:00–10:00 **Yann Brenier** (Centre National de la Recherche Scientifique (CNRS))
Link between MFG and initial value problems: part II
- 10:10–10:40 *Recitation: Alpár Mészáros*
- 10:40–11:00 *Break*
- 11:00–12:00 **Diogo Aguiar Gomes** (King Abdullah Univ. of Science and Technology (KAUST))
Price formation models
- 12:10–12:40 *Recitation: Levon Nurbekyan*
- 12:40–2:10 *Lunch (on your own)*
- 2:10–3:10 **Diogo Aguiar Gomes** (King Abdullah Univ. of Science and Technology (KAUST))
A priori estimates for mean-field games
- 3:20–3:50 *Recitation: Levon Nurbekyan*
- 3:50–4:00 *Break*
- 4:00–5:00 **Wuchen Li** (University of California, Los Angeles (UCLA))
Mean field games via probability manifold I

Wednesday June 27, 2018

- 8:00–9:00 *Check-In/Breakfast (Hosted by IPAM)*
- 9:00–10:00 **Diogo Aguiar Gomes** (King Abdullah Univ. of Science and Technology (KAUST))
Monotonicity methods for mean-field games
- 10:10–10:40 *Recitation: Levon Nurbekyan*
- 10:40–11:00 *Break*
- 11:00–12:00 **Hamidou Tembine** (New York University)
Linear-quadratic mean-field-type games: Direct method II
- 12:10–12:40 *Recitation: Wuchen Li*
- 12:40–2:30 *Lunch (on your own)*
- 3:00–4:00 **Yann Brenier** (Centre National de la Recherche Scientifique (CNRS))
Public Lecture: The melting rubik cube: from fluids to combinatorics and vice versa

Thursday June 28, 2018

- 8:00–9:00 *Check-In/Breakfast (Hosted by IPAM)*
- 9:00–10:00 **David Ambrose** (Drexel University)
PDE Methods for Non-Separable Mean Field Games I: Data in the Wiener Algebra
- 10:10–10:40 *Recitation: David Ambrose*
- 10:40–11:00 *Break*
- 11:00–12:00 **Hamidou Tembine** (New York University)
Linear-quadratic mean-field-type games: Direct method III
- 12:10–12:40 *Recitation: Wuchen Li*
- 12:40–2:10 *Lunch (on your own)*
- 2:10–3:10 **David Ambrose** (Drexel University)
PDE Methods for Non-Separable Mean Field Games II: Data in Sobolev Spaces (Part 1)
- 3:20–3:50 *Recitation: David Ambrose*
- 3:50–4:00 *Break*
- 4:00–5:00 **Wuchen Li** (University of California, Los Angeles (UCLA))
Mean field games via probability manifold II

Friday June 29, 2018

- 8:00–9:00 *Check-In/Breakfast (Hosted by IPAM)*
- 9:00–10:00 **David Ambrose** (Drexel University)
PDE Methods for Non-Separable Mean Field Games III: Data in Sobolev Spaces (Part 2)
- 10:10–10:40 *Recitation: David Ambrose*
- 10:40–11:00 *Break*
- 11:00–12:00 **Hamidou Tembine** (New York University)
Linear-quadratic mean-field-type games: Direct method IV
- 12:10–12:40 *Recitation: Wuchen Li*
- 12:40–2:30 *Lunch (on your own)*
- 2:30–3:30 **David Ambrose** (Drexel University)
PDE Methods for Non-Separable Mean Field Games IV: Further Topics

