



The Seventeenth International Conference on Game Theory and Management (GTM2024)

June 26–28, 2024
Saint Petersburg, Russia

Organized by
Saint Petersburg State University
(Graduate School of Management, Faculty of Applied Mathematics and Control
Processes) and the International Society of Dynamic Games (Russian Chapter)

International Scientific Committee

Robert Aumann (Israel), Abdulla Azamov (Uzbekistan), Tamer Basar (USA), Irina Ganus (Russia), Hongwei Gao (China), Tamara Kuropatkina (Russia), Irina Marchenko (Russia), Vladimir Mazalov (Russia), Yaroslavna Pankratova (Russia), Elena Parilina (Russia) Leon Petrosyan (Russia) – *co-chair*, Anna Rettieva (Russia), Artem Sedakov (Russia), Eilon Solan (Israel), Nina Subbotina (Russia), Alexander Tarasyev (Russia), Anna Tur (Russia), Alexander Vasin (Russia), David W.K. Yeung (Hong Kong), Georges Zaccour (Canada), Nikolay Zenkevich (Russia) – *co-chair*

Saint Petersburg State University
Volkhovskiy per., 3, Saint Petersburg, Russia

<https://gsom.spbu.ru/en/research/conferences/gtm2024/>

Program

Saint Petersburg State University
Volkhovsky per., 3, Saint Petersburg, Russia

Wednesday, June 26		
09:00–10:00	REGISTRATION	3 rd floor
09:00–10:00	COFFEE	Room 307
10:00–10:15	WELCOME ADDRESS	Room 309
10:15–11:15	PLENARY TALK (1)	Room 309
11:30–12:30	PLENARY TALK (2)	Room 309
12:30–14:00	LUNCH/COFFEE	Dining hall, 1 st floor
14:00–15:30	PARALLEL SESSIONS (1)	Rooms 205, 209, 215
15:30–16:00	COFFEE	Room 307
16:00–17:30	PARALLEL SESSIONS (2)	Rooms 205, 209, 215
18:00–21:00	WELCOME PARTY	Room 309
Thursday, June 27		
09:30–10:00	COFFEE	Room 307
10:00–11:00	PLENARY TALK (3)	Room 309
11:15–12:15	PLENARY TALK (4)	Room 309
12:15–14:00	LUNCH/COFFEE	Dining hall, 1 st floor
14:00–15:30	PARALLEL SESSIONS (3)	Rooms 205, 209
15:30–16:00	COFFEE	Room 307
16:00–17:30	PARALLEL SESSIONS (4)	Rooms 205, 209
Friday, June 28		
09:30–10:00	COFFEE	Room 215
10:00–12:30	PARALLEL SESSIONS (5)	Room 205, 209
12:30–14:00	LUNCH/COFFEE	Dining hall, 1 st floor
14:00–15:30	PARALLEL SESSIONS (6)	Rooms 205, 209
15:30–16:00	COFFEE	Room 215
16:00–17:30	PARALLEL SESSIONS (7)	Rooms 205, 209
17:45–18:00	CLOSING SESSION	Room 209
19:00–22:00	CONFERENCE DINNER	University Center, Birzhevaya liniya, 6, 2 nd floor

Wednesday, June 26

09:00–10:00 REGISTRATION, 3rd floor

09:00–10:00 COFFEE, room 307

10:00–10:15 WELCOME ADDRESS, room 309
Chairs – Leon Petrosyan and Nikolay Zenkevich

10:15–11:15 PLENARY TALK (1), room 309
Chair – Leon Petrosyan

Joseph Abdou, Université Paris 1 Panthéon-Sorbonne, France
“Toward a category of political foundations”

11:30–12:30 PLENARY TALK (2), room 309
Chair – Nikolay Zenkevich

Lina Mallozzi, University of Naples Federico II, Italy
“Optimal transport methods in bilevel optimization problems”

12:30–14:00 LUNCH, dining hall, 1st floor

14:00–15:30 PARALLEL SESSIONS (1)

Differential Games – 1, room 205
Chair – Ulmasjon Soyibboev

14:00–14:30 **Valerii Patsko, Georgii Trubnikov and Andrey Fedotov**
Two-dimensional reachable set of the Dubins car under integral constraint on control

14:30–15:00 **Georgii Trubnikov**
Elliptic functions in constructions of two-dimensional reachable set of the Dubins car with integral constraint on control

15:00–15:30 **Abdulla Azamov, Bahrom Samatov and Ulmasjon Soyibboev**
The II-Strategy When Players Move under Repulsive Forces

Dynamic Network Games, room 209

Chair – Yaroslavna Pankratova

14:00–14:30 **Alexey Korolev and Gennady Ougolnitsky**
Differential game-theoretic models of Cournot oligopoly with environmental impact and network structure

14:30–15:00 **He Yang**
Differential game with pairwise interactions and intersecting partner sets

15:00–15:30 **Leon Petrosyan, Yaroslavna Pankratova and David Yeung**
Differential Cooperative Network Games with Changing Communication Structure

Game Theory and Management Applications – 1, room 215

Chair – Alexander Vasin

14:00–14:30 **Suriya Kumacheva**
Game-theoretic Model of Venture Capital Investment

14:30–15:00 **Kamilla Timerbulatova**
Mutual signaling between employees and organizations with blog posts on social media

15:00–15:30 **Alexander Vasin and Artem Sivachenko**
On optimal design of three-level tax inspection

15:30–16:00 COFFEE, room 307

16:00–17:30 PARALLEL SESSIONS (2)

Differential Games – 2, room 205

Chair – Sergey Kumkov

16:00–16:30 **Shagalova Lyubov**
On generalized solutions for two Hamilton-Jacobi equations with state constraints

16:30–17:00 Samatov Bahrom, Umaraliyeva Nargiza and Uralova Saboxat
Differential Games with Non-stationary Constraints of Langenhop Type on Controls

17:00–17:30 Anton Mikhailov and Sergey Kumkov
Geometric Method for Solving Linear Differential Games with Multi-Dimensional Phase Vector

Economy and Markets, room 209

Chair – Vladimir Mazalov

16:00–16:30 Emily Tanimura
Hoteling models with multiple vendors and multiple goods

16:30–17:00 Natalia Aizenberg and Igor Bykadorov
Import tariffs in the monopolistic competition open economy with and without transport costs

17:00–17:30 Elena Konovalchikova and Vladimir Mazalov
The pricing problem in the transport services market

Social Dynamics and Graphs – 1, room 215

Chair –Elena Gubar

16:00–16:30 Aleksandra Grinikh
Cooperative Trajectory for n-Person Prisoner's Dilemma on the Hypergraph

16:30–17:00 Xiangyu Li, Yin Li, Boying Wu and Yao Li
Strategies of Influence in Binary Star Networks: The Role of Indifferent Agents in Opinion Dynamics

17:00–17:30 Yike Li and Gubar Elena
Viral Spread Dynamics in Complex Networks

18:00–21:00 WELCOME PARTY, room 309

Thursday, June 27

09:30–10:00 COFFEE, room 307

10:00–11:00 PLENARY TALK (3), room 309

Chair – Artem Sedakov

Puduru Viswanadha Reddy, Indian Institute of Technology
Madras, India

“Linear Quadratic Dynamic Games with Inequality Constraints and Partial Information”

11:15–12:15 PLENARY TALK (4), room 309

Chair – Vladimir Mazalov

Elena Parilina, Saint Petersburg State University, Russia

“Payment schemes for sustainable cooperation in dynamic and stochastic environments”

12:15–14:00 LUNCH, dining hall, 1st floor

14:00–15:30 PARALLEL SESSIONS (3)

Game Theory and Management Applications – 2, room 205

Chair – Yaroslavna B. Pankratova

14:00–14:30 **Pavel Konyukhovskiy**

Game-theoretic Methods in Solving Problems of Differentiation of Artificial Intelligence Systems

14:30–15:00 **Vassily Kalachev, Daniil Olishevsky, Gennady Ougolnitsky and Anatoly Usov**

Models of Innovation Management in Universities with Consideration of Opportunistic Behavior

15:00–15:30 **Nadezhda V. Smirnova, Yaroslavna B. Pankratova, Sergei Pogozhev and Irina Marchenko**

New algorithm for construction of α -nucleolus for bi-cooperative games

Social Dynamics and Graphs – 2, room 209

Chair – Artem Sedakov

14:00–14:30 **Iryna Zabarianska and Anton Proskurnikov**

Multidimensional Opinion Dynamics with General Confidence Sets

14:30–15:00 **Chen Yajin and Vladimir Mazalov**

Adaptive strategies in opinion dynamic model

15:00–15:30 **Yulia Kareeva and Artem Sedakov**

Influence Power of Strategic Agents in Social Groups: A Case of Constant Control

15:30–16:00 COFFEE, room 307

16:00–17:30 PARALLEL SESSIONS (4)

Hybrid Differential Games, room 205

Chair – Anton Bondarev

16:00–16:30 **Peichen Ye and Anna Tur**

On the Estimation of the Switching Moment of Utility Functions in Differential Games

16:30–17:00 **Yilun Wu and Anna Tur**

Sustainable solution for hybrid differential game with regime shifts and random duration

17:00–17:30 **Anton Bondarev**

Hybrid differential games with piecewise-smooth dynamic constraints

Networks, room 209

Chair – Natalia Nikitina

16:00–16:30 **Ziyu Ma**

Stability conditions for multiplex networks

16:30–17:00 **Chi Zhao and Elena Parilina**

A novel approach to measure centrality in two-layer networks with replica nodes

17:00–17:30 **Natalia Nikitina and Evgeny Ivashko**
Edge ranking in a transport graph of Petrozavodsk basing on equilibrium flows

Friday, June 28

09:30–10:00 COFFEE, room 215

10:00–12:30 PARALLEL SESSIONS (5)

Game Theory and Management Applications – 3, room 205
Chair – Nikolay Korgin

10:00–10:30 **Mikhail Lutsenko**
Agent Games and Agency Games

10:30–11:00 **Olga Gorbaneva, Anton Murzin and Stanislav Mikhalkovich**
Game-theoretic models of public-private partnership and budgeting of social significant projects

11:00–11:30 **Denis Fedyanin**
Epistemic equilibrium

11:30–12:00 **Nikolay Korgin**
IPUKER – yet another business game from ICS RAS

Portfolios, Contracts, and Trade, room 209
Chair – Nikolay Zenkevich

10:00–10:30 **Suriya Kumacheva and Vitalii Novgorodtcev**
On a Portfolio Management Problem

10:30–11:00 **Igor Bykadorov**
Local Comparative Statics of Market Equilibrium w.r.t. Trade Balance Saldo in Monopolistic Competition Trade Model

11:00–11:30 **Igor Bykadorov**
Equilibrium in International Trade of several countries under Monopolistic Competition Model: the case of autarky

11:30–12:00 **Natalia Nikolchenko and Nikolay Zenkevich**
Coordination of sales buyback contract under demand uncertainty

12:00–12:30 **Vladislav Novikov, Nikolay Zenkevich and Andrey Zyatchin**
Cost Allocation Problem in a Financial Supply Chain

12:30–14:00 LUNCH, dining hall, 1st floor

14:00–15:30 PARALLEL SESSIONS (6)

Evolutionary Games and Epidemic Models, room 205
Chair – Elena Gubar

14:00–14:30 **Ekaterina M. Lorits and Elena A. Gubar**
An evolutionary game under the influence of player opinions and environmental feedback

14:30–15:00 **Serigne Modou Ndiaye and Victor Zakharov**
Two Epidemic Models of Malaria and Their Practical Applications

15:00–15:30 **Xiuxiu Liu and Elena Gubar**
Stability analysis of two-stage evolutionary SIR model

Dynamic Games in Environmental Management, room 209
Chair – Denis Kuzyutin

14:00–14:30 **Shimai Su and Elena Parilina**
Stability of one- and two-agreement scenarios in pollution control problems

14:30–15:00 **Vladimir V. Mazalov and Anna N. Rettieva**
Asymmetric Dynamic Resource Management Problem with Different Regimes

15:00–15:30 **Denis Kuzyutin and Nadezhda V. Smirnova**
On bicriteria multistage models with asymmetric players

15:30–16:00 COFFEE, room 215

16:00–17:30 PARALLEL SESSIONS (7)

Game Theory in Transportation, room 205

Chair – Julia Chirkova

16:00–16:30 **Khaled Alkhaled**

Game Theoretic Approach to Multi-Agent Transportation Problems on Network

16:30–17:00 **Ke Ma**

The Impact of the connecting urban transportation system to the SEIR model

17:00–17:30 **Julia Chirkova**

Potential Game in Parallel Transport Network with Symmetric Externalities

Dynamic Games under Uncertainty, room 209

Chair – Anna Ivashko

16:00–16:30 **Jiangjing Zhou, Ovanes Petrosian and Hongwei Gao**

Optimizing Pollution Control Strategies in Uncertain Environments

16:30–17:00 **Maria Bykova and Elena Parilina**

Payment schemes and their properties for cooperative stochastic games

17:00–17:30 **Anna Ivashko and Vladimir Mazalov**

Optimal Stopping Game on a Random Walk

17:45–18:00 CLOSING SESSION, room 209

Chairs – Leon Petrosyan and Nikolay Zenkevich

19:00–22:00 CONFERENCE DINNER, University Center, Birzhevaya liniya 6, 2nd floor