

Workshop on
“One World Optimization Seminar in Vienna”

June 3 - 7, 2024

organized by

Radu Ioan Bot (U of Vienna) and Yurii Malitskyi (U of Vienna)

- **Monday, June 3rd, 2024**

09:00 – 09:30 **Registration & Welcome**

09:30 – 10:00 **Terry Ralph Rockafellar (U of Washington, Seattle)**

Progressive Decoupling of Dynamics in Convex Optimal Control

10:00 – 10:30 **Ewa Bednarczuk (Polish Academy of Science, Warsaw)**

Constraint qualification and the existence of multipliers for nonconvex infinite-constrained optimization problems in Banach spaces

10:30 – 11:00 **Coffee Break**

11:00 – 11:30 **Jong-Shi Pang (U of Southern California, Los Angeles)**

Heaviside composite optimization and complementarity constraints by a progressive integer programming method

11:30 – 12:00 **Panayotis Mertikopoulos (CNRS, Grenoble)**

The Long-Run Distribution of Stochastic Gradient Descent: A Large Deviations Analysis

12:00 – 14:00 **Lunch Break**

14:00 – 14:30 **Roberto Cominetti (U Adolfo Ibanez, Santiago de Chile)**

Error bounds for mean-payoff Markov decision processes

14:30 – 15:00 **Alp Yurtsever (Umeå U)**

CCCP is Frank-Wolfe in disguise

15:00 – 15:30 **Coffee Break**

15:30 – 16:00 **Adrien Taylor (INRIA Paris)**

Computer-aided Lyapunov analyses & counter-examples to the convergence of first-order optimization algorithms

16:00 – 16:30 **Ya-Ping Hsieh (ETH Zurich)**

How to Optimize a Schrödinger Bridge?

16:30 – 17:00 **Mert Gürbüzbalaban (Rutgers U)**

High probability and risk-averse guarantees for stochastic saddle point problems

17:30 – 21:00 **Welcome Reception**

- **Tuesday, June 4th, 2024**

09:00 – 09:30 **Marc Teboulle (Tel Aviv U)**

Proximal Gradient Methods for Nonsmooth Nonconvex Minimax: A Unified Convergence Analysis

09:30 – 10:00 **Russell Luke (U Göttingen)**

Nonconvex Optimization and the Curse of Local Minima: Lessons Learned from Orbital Tomography

10:00 – 10:30 **Jalal Fadili (CNRS-ENSICAEN)**

Iterative Regularization of the Deep Inverse Prior via (Inertial) Gradient Flow

10:30 – 11:00 **Coffee Break**

11:00 – 11:30 **Ya-xiang Yuan (Chinese Academy of Sciences, Beijing)**

A new derivative-free method using an improved under-determined quadratic interpolation model

11:30 – 12:00 **Frank Curtis (Lehigh U, Bethlehem)**

Stochastic Algorithms for Constrained Continuous Optimization

12:00 – 14:00 **Lunch Break**

14:00 – 14:30 **Michael Hintermüller (WIAS, Berlin)**

Quasi-Variational Inequalities: Semismooth Newton Methods, Optimal Control, and Uncertainties

14:30 – 15:00 **Michael Ulbrich (TU Munich)**

Sample Size Estimates for Risk-Neutral Semilinear PDE-Constrained Optimization

15:00 – 15:30 **Coffee Break**

15:30 – 16:00 **Behzad Azmi (U Konstanz)**

Nonmonotone Forward-Backward Splitting Method for a Class of Infinite-Dimensional Nonsmooth Nonconvex Problems

• **Wednesday, June 5th, 2024**

09:00 – 09:30 **Tom Luo (CUHK Shenzhen)**

Finite Horizon Optimization

09:30 – 10:00 **Edouard Pauwels (TSE, Toulouse)**

Inexact subgradient algorithm with errors for semialgebraic functions

10:00 – 10:30 **Niao He (ETH Zurich)**

A Hessian-Aware Stochastic Differential Equation Modelling of SGD

10:30 – 11:00 **Coffee Break**

11:00 – 11:30 **Shoham Sabach (Technion Haifa)**

Bilevel Optimization Problems: Algorithms and Theory

11:30 – 12:00 **Adriana Nicolae (Babes-Bolyai U, Cluj-Napoca)**

Weighted means in geodesic metric spaces

12:00 – 14:00 **Lunch Break**

14:00 – 14:30 **Stephen Wright (U Wisconsin Madison)**

Revisiting Inexact Fixed-Point Iterations for Min-Max Problems: Stochasticity and Structured Nonconvexity

14:30 – 15:00 **Benjamin Grimmer (Johns Hopkins U, Baltimore)**

Some Better Theory for Gradient Descent

15:00 – 15:30 **Coffee Break**

15:30 – 16:00 **Anthony Man-Cho So (CU Hong Kong)**

Spurious Stationarity and Hardness Results for Bregman-Type Algorithms

16:00 – 16:30 **Pontus Giselsson (Lund U)**

Automated tight Lyapunov analysis for first-order methods

18:00 – 22:00 **Workshop Dinner - Heuriger Schübel-Auer**

- **Thursday, June 6th, 2024**

09:00 – 09:30 **Osman Güler (U of Maryland)**

On the Kantorovich theory of Newton's method

09:30 – 10:00 **Coralia Cartîş (U Oxford)**

Optimization of functions with low effective dimensionality

10:00 – 10:30 **Guoyin Li (UNSW Sydney)**

Generalized Metric Subregularity and Superlinear Convergence Analysis for High-order Regularized Newton's Method with Momentum

10:30 – 11:00 **Coffee Break**

11:00 – 11:30 **Peter Richtarik (KAUST, Thuwal)**

The First Optimal Distributed SGD in the Presence of Data, Compute and Communication Heterogeneity

11:30 – 12:00 **Mustafa Pinar (Bilkent U, Ankara)**

Sparsity Regularized Mean-Variance Portfolio Optimization

12:00 – 14:00 **Lunch Break**

14:00 – 14:30 **Amir Beck (Tel Aviv U)**

Exact Lipschitz Regularization of Convex Optimization Problems

14:30 – 15:00 **Szilard Csaba Laszlo (U Cluj-Napoca)**

On strong convergence of inertial algorithms via Tikhonov regularization

15:00 – 15:30 **Coffee Break**

15:30 – 16:00 **Patrick Combettes (North Carolina State U)**

The geometry of monotone operator splitting

16:00 – 16:30 **Mathias Staudigl (Uni Mannheim)**

A conditional gradient homotopy method with applications to Semidefinite Programming

- **Friday, June 7th, 2024**

09:00 – 09:30 **Boris Mordukhovich (Wayne State U, Detroit)**

Semi-Newton Method in Difference Programming

09:30 – 10:00 **Ernest Ryu (Seoul National U)**

Toward a grand unified theory of accelerations in optimization and machine learning

10:00 – 10:30 **Ting Kei Pong (PolyU, Hong Kong)**

Kurdyka-Łojasiewicz exponent for a class of Hadamard-difference-parameterized models

10:30 – 11:00 **Coffee Break**

11:00 – 11:30 **Wotao Yin (Alibaba Group, Bellevue)**

Sum-of-Minimum Model: Joint Optimization of Specialized Models for Heterogeneous Data

11:30 – 12:00 **Ion Necoara (U Politehnica Bucharest)**

Coordinate descent methods beyond separability and smoothness

12:00 – 14:00 **Lunch Break**

14:00 – 14:30 **Jonathan Eckstein (Rutgers U)**

"DEFBAL" – a Connection between the ADMM and Forward-Backward methods

15:00 – 15:30 **Coffee Break**

15:30 – 16:00 **Sorin-Mihai Grad (ENSTA Paris)**

A fresh look at algorithms for solving smooth multiobjective optimization problems

16:00 – 16:30 **Masoud Ahookhosh (U Antwerpen)**

High-order Moreau envelope in the nonconvex setting: Framework and algorithms

All talks take place at ESI Boltzmann Lecture Hall!