

XIV INTERNATIONAL
SYMPOSIUM ON

Generalized Convexity and Monotonicity

SEPT 2-6 2024 PISA, ITALY

FULL PROGRAM

SEPTEMBER 2-6 2024 UNIVERSITY OF PISA, ITALY

XIV INTERNATIONAL SYMPOSIUM ON

Generalized Convexity and Monotonicity



Welcome!

Dear GCM14 Participant,

We are glad to welcome you to the “XIV International Symposium on Generalized Convexity and Monotonicity”.

This is the official conference of the Working Group on Generalized Convexity (WGGC), founded in August 1994 during the 15th International Symposium on Mathematical Programming in Ann Arbor (Michigan, U.S.A.).

The previous Generalized Convexity Symposia have been in Vancouver (Canada, 1980), Canton (U.S.A., 1986), Pisa (Italy, 1988), Pécs (Hungary, 1992), Luminy-Marseille (France, 1996), Karlovassi-Samos (Greece, 1999), Hanoi (Vietnam, 2002), Varese (Italy, 2005), Kaohsiung (Taiwan, 2008), Cluj (Romania, 2011), Rio de Janeiro (Brazil, 2014), Hajdúszoboszló (Hungary, 2017), Arequipa (Peru, Online, 2022).

The purpose of the symposium is to focus on specific challenges around generalized convexity, generalized monotonicity, variational analysis and all the applications on topics including, but not limited to, economics, regulated markets, performance measurement and bilevel programming. The symposium provides an ideal platform for presenting new methods, applications of existing techniques and advances in theoretical and empirical research.

The symposium will have 66 participants from all over the world, as well as seven keynote speakers:

- Francisco J. Aragón Artacho (University of Alicante, Spain)
- Amir Beck (Tel-Aviv University, Tel-Aviv, Israel)
- Aharon Ben-Tal (Israel Institute of Technology, Haifa, Israel)
- Felipe Lara (University of Tarapacá, Arica, Chile)
- Mau Nam Nguyen (Portland State University, Portland, OR U.S.A.)
- Pedro Pérez-Aros (University of Chile, Santiago, Chile)
- Katya Scheinberg (Cornell University, Ithaca, NY U.S.A.)

We would like to thank the “Comitato dei Matematici Applicati in Toscana” for the great effort in organizing the conference. We also owe gratitude to the Department of Economics and Management, the University of Pisa, AMASES (Association for Mathematics Applied to Social and Economic Sciences), INDAM GNAMPA, LaMME and Ensiie for their sponsorship and patronage. Also, thank you for participating and bringing your great contribution!

Before leaving, don't miss the opportunity to visit Pisa and the natural beauties around its Lands!

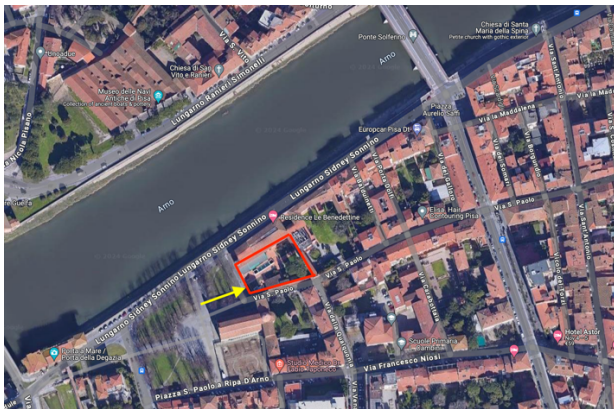
We have one last thing to say. We wish you all a successful workshop and enjoyable stay in Pisa!

The Local Organizing Committee,
Riccardo, Laura, Giovanna, Simone, Rachele, Emanuele.



Venue

The symposium takes place at “Le Benedettine” Conference Center, in Piazza S. Paolo a Ripa D’Arno, 16, 56125 Pisa (the yellow arrow points the Conference Center entrance).



Social activities

On Tuesday afternoon, we will visit the exhibition of “Le Navi Antiche di Pisa” in the majestic rooms and aisles of the “Arsenali Medicei”, along the Arno River (<https://www.navidipisa.it/en/display/>).

On Tuesday evening, we will enjoy the social dinner at the “Republic of Pisa Arsenals” (https://www.culturalheritageonline.com/location-708_Republican-Arsenals.php).

On Wednesday afternoon, we will take a bus to visit the beautiful city of Lucca.

Special Issues

 <p>Vol. 158, No. 3 September 2013 158(3) 637-944 (2013) ISSN 0022-3239</p> <p>JOURNAL OF OPTIMIZATION THEORY AND APPLICATIONS</p> <p>Springer</p> <p>Available online www.springerlink.com</p>	<p>Generalized Convexity, Monotonicity, Variational Analysis and Applications</p> <p>to appear in the “Journal of Optimization Theory and Applications”.</p> <p>Submission deadline is 31 March 2025</p> <p>All information is available at: https://link.springer.com/collections/gdbfaefigh</p>
 <p>Volume 73 Number 4 April 2024 ISSN 0233-1934</p> <p>Optimization</p> <p>A JOURNAL OF MATHEMATICAL PROGRAMMING AND OPERATIONS RESEARCH</p> <p>Taylor & Francis Taylor & Francis Group</p>	<p>Advances on Generalized Convexity, Monotonicity and Optimization Methods</p> <p>to appear in the journal “Optimization”.</p> <p>Submission deadline is 31 August 2025</p> <p>All information is available at: https://think.taylorandfrancis.com/special_issues/advances-on-generalized-convexity-monotonicity-and-optimization-methods/</p>

Program Schedule

	Monday, September 2	Tuesday, September 3	Wednesday, September 4	Thursday, September 5	Friday, September 6
9:00-10:15	Registration + Welcoming Session	Talks [3]	Talks [3]	Talks [3]	Talks [3]
10:15-11:00	Keynote: Katya Scheinberg	Keynote: Aharon Ben-Tal	Keynote: Amir Beck	Keynote: Pedro Perez-Aros	Talks [2]
11:00-11:30	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
11:30-13:10	Talks [4]	Talks [4]	Talks [4]	Talks [4]	Talks [2] WGGC General Assembly
13:10-14:45	Lunch	Lunch	Lunch	Lunch	Farewell Lunch
14:45-16:00	Talks [3]	Talks [3]	Excursion to Lucca	Talks [3]	
16:00-16:45	Keynote: Mau Nam Nguyen	Keynote: Felipe Lara		Keynote: Francisco Javier Aragón Artacho	
16:45-17:15	Tea Break	Tea Break		Tea Break	
17:15-18:05	Talks [2]	Museum "Le Navi Antiche"		Talks [2]	
		Social Dinner at "Arsenali"			

Monday, September 2
Vector Optimization

- 9:00-9:45 Registration
- 9:45-10:15 Welcoming Session
- 10:15-11:00 Keynote: **Katya Scheinberg** (Georgia Institute of Technology , U.S.A.)
Stochastic oracles and where to find them
- 11:00-11:30 Coffee Break
- 11:30-13:10 Contributed Talks
- **Christiane Tammer** (Martin-Luther-University Halle-Wittenberg, Germany)
Construction of Vector-Valued Weak Separation Functions with Applications to Conjugate Duality in Vector Optimization
 - **Christian Günther** (Leibniz Universität Hannover, Germany)
Nonlinear Cone Separation Theorems and Applications in Optimization
 - **Bahareh Khazayel** (Martin-Luther-Universität Halle-Wittenberg, Germany)
Generalized Conic Scalarization in Vector Optimization
 - **Shiv Kumar Gupta** (Indian Institute of Technology Roorkee, India)
On conic non-smooth semi-infinite program having vanishing constraints
- 13:10-14:45 Lunch
- 14:45-16:00 Contributed Talks
- **Monica Milasi** (University of Messina, Italy)
A variational approach to weakly continuous relations in Banach spaces
 - **Matey Konstantinov** (Sofia University “St. Kliment Ohridski”, Bulgaria)
Integrability of the subdifferential of a p.l.n. function on a Banach space
 - **Amos Uderzo** (University of Milan-Bicocca, Italy)
On Convexity of Images of Sets under Nonlinear Mappings
- 16:00-16:45 Keynote: **Mau Nam Nguyen** (Portland State University, U.S.A.)
Generalized Differentiation and Applications to Optimization: from Convexity to Nonconvexity
- 16:45-17:15 Tea Break
- 17:15-18:05 Contributed Talks
- **Alberto De Marchi** (University of the Bundeswehr Munich, Germany)
A penalty barrier framework for constrained optimization
 - **Anurag Jayswal** (Indian Institute of Technology (ISM) Dhanbad, India)
Absolute Value Penalty Function Method for Isoperimetric Constrained Variational Control Problem involving Uncertainty

Tuesday, September 3

Models and methods for energy markets and policy making

9:00-10:15 Contributed Talks

- **Nguyen Dong Yen** (Vietnam Academy of Science and Technology, Vietnam)
Solving a Class of Nonconvex Quadratic Programs by Inertial DC Algorithms
- **Alfredo Iusem** (School of Applied Mathematics, Rio de Janeiro, Brazil)
On proximal algorithms with inertial effects beyond monotonicity
- **Riccardo Cambini** (University of Pisa, Italy)
Rank-two programs: generalized convexity and solution methods

10:15-11:00 Keynote: **Aharon Ben-Tal** (Technion, Israel Institute of Technology, Israel)
A new algorithm for the problem of maximizing the difference of two convex functions

11:00-11:30 Coffee Break

11:30-13:10 Contributed Talks

- **Giorgia Oggioni** (University of Brescia, Italy)
A stochastic bilevel model for energy transition: an analysis of the contract for difference application
- **Andrea Pizzuti** (Bilkent University, Turkey)
An improved bilevel programming approach for assortment and cut of defective stocks
- **Rossana Riccardi** (University of Brescia, Italy)
Optimality conditions for differentiable linearly constrained pseudoconvex programs
- **Maria Bernadette Donato** (University of Messina, Italy)
Other regarding preferences in a pure exchange economy: existence of equilibrium with a variational inequality approach

13:10-14:45 Lunch

14:45-16:00 Contributed Talks

- **Marco Castellani** (University of L'Aquila, Italy)
Projected solutions for quasiequilibrium problems: theory and algorithm
- **Sara Latini** (University of Pisa, Italy)
A numerical approach to projected solution for a pay-as-bid electricity market model
- **Giancarlo Bigi** (University of Pisa, Italy)
Least cores and energy communities

16:00-16:45 Keynote: **Felipe Lara** (Universidad de Tarapacá, Chile)
A review on strongly quasiconvex functions: existence, characterizations and algorithms

16:45-17:15 Tea Break

17:15-18:55 Visit to the Museum "Le Navi Antiche"

19:00-22:00 Social Dinner at the "Republic of Pisa Arsenals"

Wednesday, September 4
Monotonicity and Applications

9:00-10:15 Contributed Talks

- **Boris Mordukhovich** (Wayne State University, U.S.A.)
Relationships between Global and Local Monotonicity of Operators
- **Nicolas Hadjisavvas** (University of the Aegean, Greece)
On the regularity of selections and on Minty points of generalized monotone set-valued maps
- **Thi Van Hang Nguyen** (Vietnam Academy of Science and Technology, Vietnam)
Sensitivity Analysis for Generalized Equations via Strict Proto-Differentiability

10:15-11:00 Keynote: **Amir Beck** (Tel Aviv University, Israel)

New results on the multi-dimensional linear discriminant analysis problem

11:00-11:30 Coffee Break

11:30-13:10 Contributed Talks

- **Matteo Rocca** (University of Insubria, Italy)
Vector-Valued Games: Characterization of Equilibria in Matrix Games
- **Slavica Ivelić Bradanović** (Department of Mathematics, University of Split, Croatia)
Jensen type inequalities for generalized (m, M, ψ) -convex functions with applications
- **Neda Lovričević** (Department of Mathematics, University of Split, Croatia)
Generalized Jensen and Jensen-Mercer inequalities for strongly convex functions with applications
- **Balendu Bhooshan Upadhyay** (Indian Institute of Technology Patna, India)
On Constraint Qualifications for Mathematical Programming Problems with Vanishing Constraints on Hadamard Manifolds

13:10-14:30 Lunch

14:30-20:30 Excursion to Lucca

Thursday, September 5
Algorithms and Numerical Methods

9:00-10:15 Contributed Talks

- **Fabián Flores-Bazán** (Universidad de Concepcion, Chile)
Nonconvex quadratic optimization over two quadrics and the unit sphere
- **César López-Pastor** (University of Alicante, Spain)
Forward-backward algorithms devised by graphs
- **Puya Latafat** (KU Leuven, Belgium)
On nonmonotone extensions of Spingarn's method

10:15-11:00 Keynote: **Pedro Perez-Aros** (Universidad de Chile, Chile)
Coderivative-Based Semi-Newton Method in Nonsmooth Programming

11:00-11:40 Coffee Break

11:40-13:00 Contributed Talks

- **Michel De Lara** (Ecole des Ponts ParisTech, France)
Hidden Convexity in the ℓ_0 Pseudonorm and in Sparse Optimization
- **Seta Rakotomandimby** (CERMICS - ENPC, France)
Abstract Cutting Plane Method Applied to Sparse Optimization
- **César Gutiérrez** (University of Valladolid, Spain)
Efficient solutions of uncertain multiobjective optimization problems

13:00-14:45 Lunch

14:45-15:45 Contributed Talks

- **Attila László Gilányi** (University of Debrecen, Hungary)
Computer Assisted Visualization of m -convex Hulls of Sets
- **Thi Huong Vu** (Zuse Institute Berlin, Germany)
Google PageRank, Citation Networks, and Optimization

15:45-16:30 Keynote: **Francisco Javier Aragón Artacho** (University of Alicante, Spain)
The Boosted Double-Proximal Subgradient Algorithm for Nonconvex Optimization

16:30-17:10 Tea Break

17:10-18:00 Contributed Talks

- **Ganga Ram** (Banaras Hindu University, Varanasi, India)
Trajectory Controllability of Dynamical System Involving a Generalized Fractional Caputo's Derivative
- **Mukesh Kumar** (Banaras Hindu University, Varanasi, India)
Existence and properties of inverse Muth probability model

Friday, September 6
Convexity and Optimization

9:00-10:45 Contributed Talks

- **Nguyen Nang Thieu** (Vietnam Academy of Science and Technology, Vietnam)
Near Convexity and Generalized Differentiation
- **Tibor Kiss** (University of Debrecen, Hungary)
Some results on non-symmetrically convex sets
- **Robert Baier** (University of Bayreuth, Germany)
Filippov Theorems for Differential Inclusions with Strengthened One-Sided Lipschitz Right-Hand Side
- **Adela Elisabeta Capătă** (Technical University of Cluj-Napoca, Romania)
On generalized vector quasi-equilibrium problems

10:45-11:20 Coffee Break

11:20-12:10 Contributed Talks

- **Mihály Bessenyei** (University of Miskolc, Hungary)
Convex structure induced by geodesic convexity
- **Janusz Morawiec** (University of Silesia in Katowice, Poland)
Extreme points of betweenness spaces and CP-isomorphism

12:10-13:00 WGGC General Assembly

13:00-14:30 Farewell Lunch

List of Participants

1. ABDOU Afrah (University of Jeddah, Saudi Arabia)
2. ALLEVI Elisabetta (University of Brescia, Italy)
3. ARAGÓN ARTACHO Francisco Javier (University of Alicante, Spain)
4. BAIER Robert (University of Bayreuth, Germany)
5. BECK Amir (Tel Aviv University, Israel)
6. BEN-TAL Aharon (Technion, Israel Institute of Technology, Israel)
7. BESSENYEI Mihály (University of Miskolc, Hungary)
8. BIGI Giancarlo (University of Pisa, Italy)
9. BIN DEHAISH Buthinah (University of Jeddah, Saudi Arabia)
10. CAFFERATA Alessia (University of Turin, Italy)
11. CAMBINI Riccardo (University of Pisa, Italy)
12. CAPĂTĂ Adela Elisabeta (Technical University of Cluj-Napoca, Romania)
13. CARISTI Giuseppe (University of Messina, Italy)
14. CAROSI Laura (University of Pisa, Italy)
15. CASTELLANI Marco (University of L'Aquila, Italy)
16. D'INVERNO Giovanna (University of Pisa, Italy)
17. DE LARA Michel (Ecole des Ponts ParisTech, France)
18. DE MARCHI Alberto (University of the Bundeswehr Munich, Germany)
19. DONATO Maria Bernadette (University of Messina, Italy)
20. FLORES-BAZÁN Fabián (Universidad de Concepcion, Chile)
21. FOSCHI Rachele (University of Pisa, Italy)
22. GILÁNYI Attila László (University of Debrecen, Hungary)
23. GÜNTHER Christian (Leibniz Universität Hannover, Germany)
24. GUPTA Shiv Kumar (Indian Institute of Technology Roorkee, India)
25. GUTIÉRREZ César (University of Valladolid, Spain)
26. HADJISAVVAS Nicolas (University of the Aegean, Greece)
27. IUSEM Alfredo (School of Applied Mathematics, Rio de Janeiro, Brazil)
28. IVELIĆ BRADANOVIĆ Slavica (Dept. of Mathematics, University of Split , Croatia)
29. JAYSWAL Anurag (Indian Institute of Technology (ISM) Dhanbad, India)
30. KHAZAYEL Bahareh (Martin-Luther-Universität Halle-Wittenberg, Germany)
31. KISS Tibor (University of Debrecen, Hungary)
32. KLARIČIĆ BAKULA Milica (University of Split, Croatia)
33. KONSTANTINOV Matey (Sofia University "St. Kliment Ohridski", Bulgaria)
34. KUMAR Mukesh (Banaras Hindu University, Varanasi, India)
35. LARA Felipe (Universidad de Tarapacá, Chile)
36. LATAFAT Puya (KU Leuven, Belgium)
37. LATINI Sara (University of Pisa, Italy)
38. LÓPEZ-PASTOR César (University of Alicante, Spain)
39. LOVRIČEVIĆ Neda (Department of Mathematics, University of Split , Croatia)
40. MATKOVIĆ Anita (University of Split, Croatia)

41. MAZZOLENI Piera (Catholic University, Milan, Italy)
42. MILASI Monica (University of Messina, Italy)
43. MOLHO Elena (University of Pavia, Italy)
44. MORAWIEC Janusz (University of Silesia in Katowice, Poland)
45. MORDUKHOVICH Boris (Wayne State University, U.S.A.)
46. NAM NGUYEN Mau (Portland State University, U.S.A.)
47. NGUYEN Thi Van Hang (Vietnam Academy of Science and Technology, Vietnam)
48. OGGIONI Giorgia (University of Brescia, Italy)
49. PAPPALARDO Massimo (University of Pisa, Italy)
50. PEREZ-AROS Pedro (Universidad de Chile, Chile)
51. PINI Rita (University of Milan-Bicocca, Italy)
52. PIZZUTI Andrea (Bilkent University, Turkey)
53. RAKOTOMANDIMBY Seta (CERMICS – ENPC, France)
54. RAM Ganga (Banaras Hindu University, Varanasi, India)
55. RICCARDI Rossana (University of Brescia, Italy)
56. ROCCA Matteo (University of Insubria, Italy)
57. SCHEINBERG Katya (Georgia Institute of Technology , U.S.A.)
58. SCOTTI Simone (University of Pisa, Italy)
59. TAMMER Christiane (Martin-Luther-University Halle-Wittenberg, Germany)
60. THEMELIS Andreas (Kyushu University, Japan)
61. THIEU Nguyen Nang (Vietnam Academy of Science and Technology, Vietnam)
62. UDERZO Amos (University of Milan-Bicocca, Italy)
63. UPADHYAY Balendu Bhooshan (Indian Institute of Technology Patna, India)
64. VANNUCCI Emanuele (University of Pisa, Italy)
65. VU Thi Huong (Zuse Institute Berlin, Germany)
66. YEN Nguyen Dong (Vietnam Academy of Science and Technology, Vietnam)

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