

جامعة سيدي محمد بن عبد الله بفاس
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UNIVERSITÉ SIDI MOHAMED BEN ABDELLAH DE FES



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FACULTE DES SCIENCES DHAR EL MAHRAZ FES

International Conference on Optimization ICOP 24



May 16-18, 2024
Dhar El Mahraz Faculty of Sciences
Sidi Mohamed Ben Abdellah University
Fez – Morocco

Chairman: Nazih Abderrazzak Gadhi

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<https://icop24.sciencesconf.org/>

Welcome address

On behalf of the organizing committee, Sidi Mohamed Ben Abdellah University, and the LAMA laboratory, we are thrilled to welcome you to the International Conference on Optimization, ICOP 24.

The conference, featuring 11 keynote speakers and several oral talks, aims to gather experts in optimization and related fields from around the globe to share new ideas, spark future collaborations, and facilitate interaction. It will also provide a platform for discussing recent advances across all facets of optimization and associated disciplines. These include multi-objective optimization, set-valued optimization, mathematical programming with equilibrium or complementarity constraints, optimization under uncertainty, min-max optimization, semi-infinite optimization, bilevel optimization, integer and combinatorial optimization, robust optimization, shape optimization, optimal control, variational inequalities, and PDE-constrained optimization.

We wish you all a pleasant and memorable conference with open-minded and fruitful discussions.

Nazih Abderrazzak Gadhi

May, 2024

Conference Chair

- ✚ Nazih Abderrazzak Gadhi, Sidi Mohamed Ben Abdellah University, Morocco

Keynote Speakers

- ✚ Alireza Kabgani, University of Antwerp, Belgium
- ✚ El Mostafa Kalmoun, Al Akhawayn University, Morocco
- ✚ Alexander Y. Kruger, Ton Duc Thang University, Vietnam
- ✚ Luz de Teresa, Universidad Nacional Autonoma de México, Mexico
- ✚ Juan Enrique Martinez Legaz, Universitat Autònoma de Barcelona, Spain
- ✚ Fabio Raciti, University of Catania, Italy
- ✚ Hassan Riahi, Cadi Ayyad University, Morocco
- ✚ Vladimir Shikhman, TU Chemnitz, Germany
- ✚ Michel Théra, University of Limoges, France
- ✚ Alain Zemkoho, University of Southampton, United Kingdom
- ✚ Enrique Zuazua, Friedrich-Alexander-Universität, Erlangen-Nürnberg, Germany

Scientific Committee

- ✚ Omar Benslimane, EST-Salé - Mohammed V University, Morocco
- ✚ Stephan Dempe, Technische Universität Bergakademie Freiberg, Germany
- ✚ Joydeep Dutta, Indian Institute of Technology Kanpur, India
- ✚ Mohammed El idrissi, FSDM - Sidi Mohamed Ben Abdellah University, Morocco
- ✚ Ilias Ftouhi, Friedrich-Alexander-University of Erlangen-Nürnberg, Germany
- ✚ Nazih Abderrazzak Gadhi, FSDM - Sidi Mohamed Ben Abdellah University, Morocco
- ✚ El Mostafa Kalmoun, Al Akhawayn University, Morocco
- ✚ Alireza Kabgani, University of Antwerp, Belgium
- ✚ Elisabeth Anna Sophia Köbis, Norwegian University of Science and Technology, Norway
- ✚ Alexander Y. Kruger, Ton Duc Thang University, Vietnam
- ✚ Luz de Teresa, Universidad Nacional Autonoma de México, Mexico
- ✚ Juan Enrique Martinez Legaz, Universitat Autònoma de Barcelona, Spain
- ✚ Zakaria Mazgouri, ENSA - Sidi Mohamed Ben Abdellah University, Morocco
- ✚ Patrick Mehrlitz, University of Duisburg-Essen, Germany
- ✚ Boris Mordukhovich, Wayne State University, USA
- ✚ Fabio Raciti, University of Catania, Italy
- ✚ Hassan Riahi, Cadi Ayyad University, Morocco
- ✚ Vladimir Shikhman, TU Chemnitz, Germany
- ✚ Michel Théra, University of Limoges, France
- ✚ Alain Zemkoho, School of Mathematical Sciences, University of Southampton, United Kingdom
- ✚ Enrique Zuazua, Friedrich-Alexander-Universität, Erlangen-Nürnberg, Germany

Organizing Committee

- ✚ Mustapha Ait hammou, FSDM - Sidi Mohamed Ben Abdellah University, Morocco
- ✚ Adnane Azzouzi, FSDM - Sidi Mohamed Ben Abdellah University, Morocco
- ✚ Mohamed Baddi, FSDM - Sidi Mohamed Ben Abdellah University, Morocco
- ✚ Omar Benslimane, EST-Salé - Mohammed V University, Morocco (Co-Chair)
- ✚ Khalil Benhadouch, ENSA - Sidi Mohamed Ben Abdellah University, Morocco
- ✚ Jaouad Bennouna, FSDM - Sidi Mohamed Ben Abdellah University, Morocco
- ✚ Mohammed El idrissi, FSDM - Sidi Mohamed Ben Abdellah University, Morocco (Co-Chair)
- ✚ Nazih Abderrazzak Gadhi, FSDM - Sidi Mohamed Ben Abdellah University, Morocco
- ✚ El Mostafa Kalmoun, Al Akhawayn University, Morocco
- ✚ Najib Mahdou, FST - Sidi Mohamed Ben Abdellah University, Morocco
- ✚ Zakaria Mazgouri, ENSA - Sidi Mohamed Ben Abdellah University, Morocco (Co-Chair)
- ✚ Fatima Zahra Rahou, INSEA - Haut-Commissariat au Plan, Morocco
- ✚ Ahmed Yousfi, ENSA - Sidi Mohamed Ben Abdellah University, Morocco
- ✚ Abderrahim Zafrar, FSDM - Sidi Mohamed Ben Abdellah University, Morocco

Junior Organizing Committee

- ✚ Imad Zerrifi Amrani, FSDM - Sidi Mohamed Ben Abdellah University, Morocco
- ✚ Anas Chebbare, FSDM - Sidi Mohamed Ben Abdellah University, Morocco
- ✚ Nouredine Dahbi, FSDM - Sidi Mohamed Ben Abdellah University, Morocco
- ✚ Btissam El-Yaalaoui, FSDM - Sidi Mohamed Ben Abdellah University, Morocco
- ✚ Mohammed Fillali, FSDM - Sidi Mohamed Ben Abdellah University, Morocco
- ✚ Aissam Ichatouhane, FSDM - Sidi Mohamed Ben Abdellah University, Morocco
- ✚ Mohamed Ohda, FSDM - Sidi Mohamed Ben Abdellah University, Morocco

Useful information

Venue

The conference will take place at the faculty of sciences Dhar El Mahraz, which is part of Sidi Mohamed Ben Abdellah University in Fez, Morocco.

Registration desk

Participants are kindly asked to pick up their conference materials at the registration desk.

Contributed talks

Contributed talks are scheduled to last 20 minutes, including time for questions. Each lecture room is equipped with a PC. Speakers should bring their presentations on a USB flash drive and upload them onto the computer before their session begins. A member of the organizing committee will be available to assist with this process. Please arrive at least 10 minutes before your session starts.

Special issue in Optimization

A special issue of the journal "Optimization" will be dedicated to the conference ICOP 24. All delegates are encouraged to submit a paper to contribute to this special issue by August 31st, 2024.

Guest Editors

Nazih Abderrazzak Gadhi : abderrazzak.gadhinazih@usmba.ac.ma

Vladimir Shikhman: vladimir.shikhman@mathematik.tu-chemnitz.de

Format of manuscripts

The format of manuscripts for Optimization as well as guidelines and templates can be found on the journal's web page

<https://www.tandfonline.com/action/authorSubmission?show=instructions&journalCode=gopt20>

Each manuscript must be submitted via Optimization's online manuscript system under

<https://accounts.taylorfrancis.com/identity/#/login>

Detailed instructions are provided during the submission process. When submitting their manuscript, authors must answer the question '**Is the manuscript a candidate for a special issue?**' Please tick 'yes' and select '**ICOP 24**' from the list.

Program at a glance

Thursday, May 16th

Time & Event			
09h00 – 10h00	Registration & Opening Ceremony		
10h00 – 10h30	Coffee Break		
Keynote Session 1	10h30 – 11h20	Keynote speaker : Hassan Riahi	
	11h20 – 12h10	Keynote speaker : Michel Théra	
	12h10 – 13h00	Keynote speaker: Alexander Y. Kruger	
13h00 – 15h00	Lunch		
Participant Sessions 1-2	15h00 – 16h20	Participant Session 1	Participant Session 2
16h20 – 16h50	Coffee Break		
Participant Sessions 3-4	16h50 – 18h10	Participant Session 3	Participant Session 4

Friday, May 17th

Time & Event				
Keynote Session 2	09h00 – 09h50	Keynote speaker : Juan Enrique Martínez-Legaz		
	09h50 – 10h40	Keynote speaker : Fabio Raciti		
10h40 – 11h10	Coffee Break			
Participant Sessions 5–6–7	11h10 – 12h30	Participant Session 5	Participant Session 6	Participant Session 7
12h30 – 16h00	Lunch			
Keynote Session 3	16h00 – 16h50	Keynote speaker : Enrique Zuazua		
	16h50 – 17h40	Keynote speaker : Vladimir Shikhman		
17h40 – 19h00	Visit to Jnan Sbil Gardens and sunset panoramic view of Fez			

Saturday, May 18th

Time & Event		
Keynote Session 4	09h00 – 09h50	Keynote speaker : Alain Zemkoho
	09h50 – 10h40	Keynote speaker : El mostafa Kalmoun
10h40 – 11h10	Coffee Break	
Keynote Session 5	11h10 – 12h00	Keynote speaker : Luz de Teresa
	12h00 – 12h50	Keynote speaker : Alireza Kabgani
13h00 – 15h00	Lunch	
15h00 – 19h00	Visit to the old Medina of Fez and its historical monuments	

Detailed program

Thursday, May 16th

✚ 09h00 – 10h00 Registration & Opening Ceremony

✚ 10h00 – 10h30 Coffee Break

✚ 10h30 – 13h00 Keynote Session 1

Chair: Alain Zemkoho

○ 10h30 – 11h20

Combining Strong Convergence, Values Fast Convergence and Vanishing of Gradients for a Proximal Point Algorithm Using Tikhonov Regularization in a Hilbert Space

Hassan Riahi

○ 11h20 – 12h10

Linear regularity and strong CHIP of closed sets in Asplund spaces, old and new results

Michel Théra

○ 12h10 – 13h00

Fuzzy multiplier rules: decoupling approach revisited

Alexander Y. Kruger

✚ 13h00 – 15h00 Lunch

✚ 15h00 – 16h20 Presentation Session 1

Chair: Fabio Raciti

○ 15h00 – 15h20

Strong convergence of an inertial proximal algorithm with a Tikhonov regularization term for monotone inclusions

Aïcha Balhag

○ 15h20 – 15h40

Proximal Block Coordinate for Constrained Nonlinear Optimization Problems

Khaoula Kharfati

○ 15h40 – 16h00

Two inertial type algorithms for monotone hierarchical equilibrium problems

Zakaria Mazgouri

○ 16h00 – 16h20

Equilibrium problem resolution through a reformulated approach with proximal point algorithm and proximal bundle methods

Abdessamad Fadil

✚ 15h00 – 16h20 Presentation Session 2

Chair: Omar Benslimane

○ 15h00 – 15h20

Stochastic optimal control in biological wastewater treatment

Oumaima Boukhris

○ 15h20 – 15h40

Dynamic Decision Modeling for Pricing policy: A Viability Approach

Achraf Bouhmady

○ 15h40 – 16h00

An adaptive local search-based particle swarm optimisation to solve the multi-compartment vehicle routing problem

Nouhaila Adil

○ 16h00 – 16h20

Optimization of the supplier selection process

Laila Messaoudi

✚ 16h20 – 16h50 Coffee Break

✚ 16h50 – 18h30 Presentation Session 3

Chair: El mostafa Kalmoun

○ 16h50 – 17h10

A generalized division approach for interval fractional programming problems

Nisha Pokharna

○ 17h10 – 17h30

A note on p -hyperconvexity in Multiobjective optimal control with orthotropic p -Laplacian PDE constraints

Omar Benslimane

○ 17h50 – 18h10

Zero-Sum Deterministic Differential Games involving continuous and Impulse Controls

Hafid Lalioui

○ 18h10 – 18h30

Stabilization for a class of unbounded bilinear control system in Banach space

Abdelhak El aoula

16h50 – 18h30 Presentation Session 4

Chair: Adnane Azzouzi

○ 16h50 – 17h10

Multi-site automotive industry: Towards optimal coordination of production, spare parts logistics and maintenance through Maintenance 4.0

Raoua Zerrad

○ 17h10 – 17h30

Efficiency advancements in cooperative game theory: the bi-extremal bi-stabilization algorithm

Mekdad Slim

○ 17h50 – 18h10

Optimal control for a tuberculosis model with contamination by the consumption of unpasteurized dairy products: mathematical modelling and numerical simulations

Rizlane Zahli

○ 18h10 – 18h30

Supplier selection using fuzzy AHP and TOSPSIS methods: case study of Morocco

Mariam El hiri

Friday, May 17th

09h00 – 10h40 Keynote Session 2

Chair: Alexander Y. Kruger

○ 09h00 – 09h50

Closed convex sets that are both Motzkin decomposable and generalized Minkowski sets

Juan Enrique Martínez-Legaz

○ 09h50 – 10h40

Variational inequality approach to network games: theory, algorithms and extensions

Fabio Raciti

10h40 – 11h10 Coffee Break

11h10 – 12h30 Presentation Session 5

Chair: Alireza Kabgani

○ 11h10 – 11h30

An ADMM-based heuristic algorithm for optimization problems over nonconvex second-order cone

Baha Alzalg

○ 11h30 – 11h50

On interval-valued bilevel optimization problems using upper convexifiers

Mohamed Ohda

○ 11h50 – 12h10

Second order optimality conditions for a bilevel optimization problem in terms of approximate Hessians

Mohammed El idrissi

○ 12h10 – 12h30

On uniform null controllability of transport-diffusion equations with vanishing viscosity limit

Fouad Et-tahri

11h10 – 12h30 Presentation Session 6

Chair: Abderrahim Zafrar

○ 11h10 – 11h30

A vector (φ_1, φ_2) -variational principle

Abdessamad Douhou

○ 11h30 – 11h50

Best proximity point in G -Menger spaces

Lahcen Oumertou

○ 11h50 – 12h10

ε -Weak Pareto minimality in D.C. vector optimization

Imad Amrani zerrifi

○ 12h10 – 12h30

Fluidification of stochastic Petri nets by continuous Petri nets

Hamid El moumen

✚ 11h10 – 12h30 Presentation Session 7

Chair: Zakaria Mazgouri

○ 11h10 – 11h30

Integer linear programming for the redundancy allocation multistate series-parallel

Mohamed Ouzineb

○ 11h30 – 11h50

Optimality conditions in set optimization with approximation as the generalized derivative

Aissam Ichatouhane

○ 11h50 – 12h10

Sufficient optimality conditions and duality results for a fractional multiobjective optimization problem in terms of convexifiers

Fatima Zahra Rahou

○ 12h10 – 12h30

Bi-objective model for tactical planning in corn supply chain considering CO2 balance

Angelo Aliano Filho

✚ 12h30 – 16h00 Lunch

✚ 16h00 – 17h40 Keynote Session 3

Chair: Luz de Teresa

○ 16h00 – 16h50

Optimal placement of sensors and actuators

Enrique Zuazua

○ 16h50 – 17h40

Scalarization via utility functions in multi-objective optimization

Vladimir Shikhman

Visit to Jnan Sbil Gardens and sunset panoramic view of Fez

Saturday, May 18th

✚ 09h00 – 10h40 Keynote Session 4

Chair: Juan Enrique Martínez-Legaz

○ 09h00 – 09h50

The bilevel optimization renaissance through machine learning: lessons and challenges

Alain Zemkoho

○ 09h50 – 10h40

A theoretical analysis of bilevel optimization formulations for optical flow

El Mostafa Kalmoun

✚ 10h40 – 11h10 Coffee Break

✚ 11h10 – 12h50 Keynote Session 5

Chair: Michel Théra

○ 11h10 – 12h00

On Stackelberg hierarchic control for parabolic equations

Luz de Teresa

○ 12h00 – 12h50

High-order Moreau envelope in the nonsmooth and nonconvex setting

Alireza Kabgani

✚ 12h50 – 13h00 Closing Remarks

✚ 13h00 – 15h00 Lunch

Visit to the old Medina of Fez and its historical monuments

List of participants in alphabetical order

Aboussi, Wassim	Sidi Mohamed Ben Abdellah University, Fez – Morocco
Adil, Nouhaila	Hassan II University, Casablanca – Morocco
Ahmadi, Mohammad	Sidi Mohamed Ben Abdellah University, Fez – Morocco
Ait hammou, Mustapha	Sidi Mohamed Ben Abdellah University, Fez – Morocco
Alzalg, Baha	University of Jordan, Amman – Jordan
Assarrar, Anass	Sidi Mohamed Ben Abdellah University, Fez – Morocco
Azzouzi, Adnane	Sidi Mohamed Ben Abdellah University, Fez – Morocco
Baddi, Mohamed	Sidi Mohamed Ben Abdellah University, Fez – Morocco
Balhag, Aicha	Cadi Ayyad University, Marrakesh – Morocco
Ben haddouch, Khalil	Sidi Mohamed Ben Abdellah University, Fez – Morocco
Bennouna, Jaouad	Sidi Mohamed Ben Abdellah University, Fez – Morocco
Benslimane, Omar	Mohammed V University, Rabat – Morocco
Bouhmady, Achraf	Mohammed V University, Rabat – Morocco
Boukhris, Oumaima	Mohammed V University, Rabat – Morocco
Camara, Alya	Sidi Mohamed Ben Abdellah University, Fez – Morocco
Chebbare, Anas	Sidi Mohamed Ben Abdellah University, Fez – Morocco
Dahbi, Noureddine	Sidi Mohamed Ben Abdellah University, Fez – Morocco
Douhou, Abdessamad	Sultan Moulay Slimane University, Beni Mellal – Morocco
El aoula, Abdelhak	Sidi Mohamed Ben Abdellah University, Fez – Morocco
El hiri, Mariam	Private university of Fez, Fez – Morocco
El idrissi, Mohammed	Sidi Mohamed Ben Abdellah University, Fez – Morocco
El Khair, Imane	Sidi Mohamed Ben Abdellah University, Fez – Morocco
El moumen, Hamid	Abdelmalek Essaadi University, Tétouan – Morocco
El-Yaalaoui, Btissam	Sidi Mohamed Ben Abdellah University, Fez – Morocco
Et-tahri, Fouad	Ibnou Zohr University, Agadir – Morocco
Fadil, Abdessamad	Hassan I University, Settat – Morocco
Filho, Angelo Aliano	Universidade Tecnológica Federal do Paraná, Brazil
Fillali, Mohammed	Sidi Mohamed Ben Abdellah University, Fez – Morocco
Gadhi, Nazih Abderrazzak	Sidi Mohamed Ben Abdellah University, Fez – Morocco
Guennach, Nassima	Sidi Mohamed Ben Abdellah University, Fez – Morocco
Guissi, Fatima Zahra	Sidi Mohamed Ben Abdellah University, Fez – Morocco
Ichatouhane, Aissam	Sidi Mohamed Ben Abdellah University, Fez – Morocco
Kabgani, Alireza	University of Antwerp, Antwerp – Belgium
Kalmoun, El Mostafa	Al akhawayn University, Ifrane – Morocco
Kharfati, Khaoula	Hassan I University, Settat – Morocco
Kruger, Alexander	Ton Duc Thang University, Ho Chi Minh City – Vietnam
Lalioui, Hafid	Mohammed VI Polytechnic University, Rabat – Morocco
Luz, de Teresa	Universidad Nacional Autonoma de México, Mexico
Mahdou, Najib	Sidi Mohamed Ben Abdellah University, Fez – Morocco
Mahdou, Salah Eddine	Sidi Mohamed Ben Abdellah University, Fez – Morocco
Martinez Legaz, Juan Enrique	Universitat Autònoma de Barcelona, Barcelona – Spain
Mazgouri, Zakaria	Sidi Mohamed Ben Abdellah University, Fez – Morocco
Mekdad, Slim	Mohammed V University, Rabat – Morocco
Messaoudi, Laila	University of Gabes, Gabes – Tunisia
Ohda, Mohamed	Sidi Mohamed Ben Abdellah University, Fez – Morocco
Oubouhou, El Houssaine	Sidi Mohamed Ben Abdellah University, Fez – Morocco
Oumertou, Lahcen	Abdelmalek Essaadi University, Tétouan – Morocco
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Pokharna, Nisha	Sardar Vallabhbhai National Institute of Technology, India
Raciti, Fabio	University of Catania, Catania – Italy
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Riahi, Hassan	Cadi Ayyad University, Marrakesh – Morocco
Shikhman, Vladimir	Technische Universität Chemnitz, Chemnitz – Germany
Théra, Michel	University of Limoges, Limoge – France
Yousfi, Ahmed	Sidi Mohamed Ben Abdellah University, Fez – Morocco
Zafrar, Abderrahim	Sidi Mohamed Ben Abdellah University, Fez – Morocco
Zahli, Ghizlane	University of Sultan Moulay Slimane, Khouribga – Morocco
Zemkoho, Alain	University of Southampton, United Kingdom
Zerrad, Raoua	Abdelmalek Essaadi University, Tétouan – Morocco
Zerrifi, Amrani Imad	Sidi Mohamed Ben Abdellah University, Fez – Morocco
Zuazua, Enrique	Friedrich-Alexander-Universität, Erlangen – Germany