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# Curriculum Vitae

## 1 Personal Data.

*Name, surname:* Aris Daniilidis

*Date of birth:* 15.04.1970

*Place of birth:* Athens, Greece

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*Nationality:* Greek (Identity card X655100 ; Passport AP5152164)

*Personal address:* Schanzstraße 33/11, Wien 1140, Austria

*Professional address:* TU Wien, E105/04, Wiedner Hauptstrasse 8, Vienna, Austria

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*E-mail:* [aris.daniilidis@tuwien.ac.at](mailto:aris.daniilidis@tuwien.ac.at) ; [aris.daniilidis@gmail.com](mailto:aris.daniilidis@gmail.com)

*Web page:* <https://www.tuwien.at/mg/vador> (Research group)  
<https://www.arisdaniilidis.at/> (Personal webpage)

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*Research gate:* [https://www.researchgate.net/profile/Aris\\_Daniilidis](https://www.researchgate.net/profile/Aris_Daniilidis)

*Orcid profile:* <http://orcid.org/0000-0003-4837-694X>

*Researcher ID (Publons):* I-6737-2013

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*Languages:* English, French, Spanish (written/spoken very fluently); Greek (native);  
Catalan, Italian (good knowledge); German (medium), Portuguese (notions)

## 2 Education

(26.03.2002) Habilitation in Applied Mathematics, University of Pau, Bordeaux Academy, France.  
HDR Thesis: *Convex and Quasiconvex analysis. Applications in Optimization* (in French)

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(17.12.1997) PhD Dissertation in Mathematics, University of the Aegean, Greece.  
PhD Thesis: *Applications of Generalized Convexity and Monotonicity to Variational Inequalities and Vector Optimization* (in Greek)

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(19.11.1992) Bachelor Degree in Physics, University of Athens, Greece.  
Bachelor Thesis: *Determination and extension of measures* (in Greek)  
Graduate grade: 8,66 (out of 10); Graduation Rank 1 (Valedictorian: Best marks of the generation);

(July 1988) Admitted (after national competition) at the University of Athens (studies in Physics).  
Entrance Rank 2 (Score: 606 out of 640)

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(June 1988) High School Diploma. Grade: 9,1 (out of 10) (Best marks of the class).

### 3 Employment history

(since 2021) Full Professor, Director of VADOR E105/04, TU Wien  
Institute of Statistics and Mathematical Methods in Economics.

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(2017–2021) Deputy Director, Centre for Mathematical Modelling (CNRS IRL 2807)  
Research Center of Excellence, Santiago, Chile (<http://www.cmm.uchile.cl/>)

(2013–2021) Full Professor (Profesor Titular)  
Department of Mathematical Engineering, University of Chile

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(2007–2013) Tenure Associate Professor (Professor Agregat)  
Department of Mathematics, University Autonomous of Barcelona, Spain.

(2004–2007) Tenure-track researcher (investigador Ramon y Cajal)  
Department of Mathematics, University Autonomous of Barcelona, Spain.

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(Automne 2003) Post-doctorate researcher, INRIA, Rhône-Alpes, France.  
BIPOP Team (Non-regular Mechanics). Scientific responsible: Bernard Brogliato.

(2002–2003) Post-doctorate researcher  
Department of Economics, University Autonomous of Barcelona, Spain.

(2001–2002) Post-doctorate researcher, INRIA, Rhône-Alpes, France.  
NUMOP Team (Numerical Optimization). Scientific responsible: Claude Lemaréchal.

(2000–2001) Assistant Professor (fixed term contract) (ATER)  
Laboratory of Applied Mathematics, University of Pau, France.

(1998–2000) Post-doctorate researcher (Marie-Curie Fellow), CNRS Talence, France.  
Laboratory of Applied Mathematics, University of Pau, France.

### 4 Academic responsibilities, Administration

#### 4.1 Recent responsibilities

Deputy Director, CMM-CNRS IRL 2807  
Centre for Mathematical Modelling, Chile (June 2017–September 2021)

Head of the Department School (“Jefe Docente”)  
University of Chile (July 2014–June 2016)

Member of the Doctorate Committee (5 members)  
Department of Mathematical Engineering (2013–2019)

Member of the evaluation committee in charge of internal promotions (3 members)  
Department of Mathematical Engineering, University of Chile (since June 2018)

## 4.2 Editorial work

Member of the Editorial Board of the following WoS journals:

*Mathematical Programming* (Series A)  
Member of the Editorial Board (2005–2022).

*Journal of Mathematical Analysis and Applications*  
Member of the Editorial Board since 2008.

*Journal of Global Optimization*  
Member of the Editorial Board since 2008.

*Optimization* (Taylor & Francis)  
Member of the Editorial Board (2013–2022).

*Journal of Optimization Theory and Applications*  
Member of the Editorial Board since 2014.

*Mathematics of Operational Research*  
Member of the Editorial Board (2016–2023).

*Journal of Nonsmooth Analysis and Optimization*  
Member of the Editorial Board since 2019.

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I acted as “Guest Editor” in the following occasions:

Proceedings of the International conference (held at CRM, Spain; October 13–15, 2010)  
*Numerical Optimization and Applications in Engineering* NUMOPEN  
Special issue of TOP (Spanish journal of Operations Research) (co-edited with A. Ferrer and A. Juan).

Proceedings of the International conference (held at Santiago, Chile; January 5–10, 2014)  
*2nd International conference on Variational Analysis and Optimization*  
Special issue of *Set-Valued Variational Analysis* (co-edited with R. Correa and B. Mordukhovich)

## 4.3 Evaluation Panels, committees

Member of an ad-hoc *Selection Committee* (10 members) for the programs:  
“*Ramon y Cajal*” (5 years tenure-track positions) and “*Juan-de-la-Cierva*” (3 years post-doct):  
Recruitment competition in Mathematics (98 candidates) May 23–24, 2011  
ANEP (National Agency for Academic Evaluations), Madrid, Spain.

Member of an ad-hoc International<sup>1</sup> *Interdisciplinary Expert Panel* (10 members)  
(representing mathematics) for the evaluation of the Conicyt program “Anillos” (Team grants in Chile).  
Labor: Evaluate the impact of 16 executed projects (of various areas)  
Evaluation period: September 3–11, 2011, Santiago, Chile.  
Conicyt (National Agency for Research on Sciences and Technology), Chile.

Member (representing mathematics) of a National *Interdisciplinary Panel* (12 members)  
for the evaluation of proposals of the program MEC-PCI-Conicyt (International Cooperation).  
Annual Nomination: Years 2018 and 2019 (different committees)  
Evaluation period: May–August 2018 and June–September 2019.  
Labor: Assignment of referees (110 proposals); Final decision. PCI-Conicyt, Chile

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<sup>1</sup>In 2011, I was Associate Professor at the UAB (Spain) and participated as foreign expert.

Member of the Fondecyt *Expert Panel in Mathematics* (16 members)

Competitions: “Research initiation grants” (March–May), “Regular grants” (July–September) and “Post-doctorate grants” (October–December).

Labor: Evaluation of curricula; assignment of referees; 3 committee meetings (per competition)  
Fondecyt, Conicyt, Chile (Annual Nomination: Year 2019)

Hellenic Authority for Higher Education: *Expert Panel in Mathematics* (3 members);  
Accreditation of the Department Mathematics of the Aristotle University of Thessaloniki  
February 15-20, 2021.

Member of the International Scientific Board (5 members)

GDR 3273 MOA, CNRS, France (2017–2020) (Mathématiques de l’Optimisation et Applications)  
<https://gdrmoa.math.cnrs.fr/>

Member of the selection committee (5 members) of the Department of Mathematical Engineering for recruiting on tenure-track positions: competitions 2014, 2016\*, 2018\* [(\*):= Chair of the committee.]

Chair of the selection committee (5 members) for the “CMM-CNRS positions of Excellence” competition advertised by the Center for Mathematical Modelling (June 2019).

I participated in ad-hoc committees for academic evaluations (7 members) for the following universities:  
School of Architecture, Technical University of Crete (12/2014–3/2015) and  
School of Economics, Business and International Studies, University of Piraeus (11/2017–2/2018)

### External evaluator, referee

I acted as external evaluator for the following competitions:

Austrian Science Foundation (FWF), Grant competition 2016

Czech Sciences Foundation, Funding proposal competition (CSF-GASP)  
Grant competition 2007

Greek funding proposal competition (APELLA)  
Grant competition 2019

Israel Foundation Institute (ISF)  
Grant competition 2009

Spanish National Agency for Evaluation of Research Projects  
Team grant competitions 2009 & 2011

Romanian National Research Council (CNCS)  
Grant competitions 2012, 2020 & 2021.

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I acted as external evaluator in several competitions in Chile:

Master scholarships; Doctorate fellowships;

Fondecyt individual grants; Team grants “Anillos”;

Consolidated team grants “Millennium Science” (MSI)

Reviewer for *Mathematical Reviews* (AMS) (142 articles, 5 books), *Zentralblatt MATH* (83 articles, 1 book), *Canadian Mathematical Society Reviews* (1 book), *TOP Commentator* (Spanish Journal in Operational Research)

Referee for Springer, Berlin (monographs in Mathematics), CRC Press (Taylor & Francis group), as well as for several international journals (including *Bull. London Math. Soc.*, *Math. Annalen*, *Trans. Amer. Math. Soc.*, *Proc. Amer. Math. Soc.*, *Amer. Math. Monthly*, etc.).

#### 4.4 Organization of events. Scientific committees.

The symbol (★) in front of an activity indicates that I was chairing of the local committee.

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(★) *3rd Austrian Calculus of Variations Day* (45 participants)

National Workshop (November 23-24, 2023), Vienna, Austria

<https://appliedmath.univie.ac.at/public/ACVD/events/3/>

(★) *Workshop on Algebraic Real Geometry and Optimization* (ARGO2022) (20 participants)

August 30 - September 2, 2022, Santiago, Chile

<https://eventos.cmm.uchile.cl/argo2022/>

(★) *Workshop on Algebraic Real Geometry and Optimization* (ARGO2022) (25 participants)

International Workshop, MathAmSud 20MATH-02 (Aug. 30-Sept. 2, 2022), Santiago, Chile

<https://eventos.cmm.uchile.cl/argo2022/>

(★) *Dynamical Aspects in Variational Analysis* (30 participants)

Workshop co-organized with S. Gaubert (INRIA, Polytechnique) and S. Tapia (my PhD student)

CMAP, École Polytechnique, Palaiseau, France (December 13, 2018)

<http://www.cmap.polytechnique.fr/~gaubert/VariationalAnalysisWorkshop/>

*2<sup>nd</sup> International Conference on Variational Analysis and Optimization*

(in honor of Lionel Thibault) (80 participants)

Member of the organizing and scientific committee.

University of Chile, Santiago, Chile (January 5–10, 2014)

<http://eventos.cmm.uchile.cl/thibault2014/organizing-committee/>

(★) *XIII Escuela de Primavera* (Spring School, 22 participants)

(co-organized with J. Fontona and J. Ortega)

Department of Mathematical Engineering (October 14–25, 2013)

University of Chile, Santiago, Chile.

(★) *Research Programme* (4–months) on:

Variational Analysis and Optimization Theory and Applications

Main organizer. Chair of the scientific committee.

CRM, Barcelona, Spain (September–December 2010)

(★) *Optimization: Theory, Algorithms and Applications in Economics* (OPT2011, 70 participants)

(a tribute to Juan-Enrique Martinez-Legaz on the occasion of his 60<sup>th</sup> birthday)

Chair of the organizing committee. Chair of the Scientific committee.

CRM, Barcelona, Spain. <http://mat.uab.cat/~opt/opt2011/>

<http://www.dim.uchile.cl/~arisd/OPT2011.Poster.pdf>

(★) *Advances in Optimization and Related Topics* (ADORT, 69 participants)

Chair of the organizing committee. Chair of the scientific committee.

CRM, Barcelona, Spain (November 29 – December 3, 2010)

[http://www.dim.uchile.cl/~arisd/Leaflet\\_ADORT2010.pdf](http://www.dim.uchile.cl/~arisd/Leaflet_ADORT2010.pdf)

(★) *Numerical Optimization and Applications in Engineering* (NUMOPEN, 24 participants)

Chair of the organizing committee. CRM, Barcelona, Spain (October 13–15, 2011)

[http://www.dim.uchile.cl/~arisd/Leaflet\\_NUMOPEN2010.pdf](http://www.dim.uchile.cl/~arisd/Leaflet_NUMOPEN2010.pdf)

(★) *Advanced Course on Optimization: Theory, Methods, and Applications*

Summer School (70 participants) Main organizer. Chair of the scientific committee.  
 CRM, Campus UAB, Spain (July 20–24, 2009)  
[http://www.dim.uchile.cl/~arisd/Leaflet\\_OPT2009.pdf](http://www.dim.uchile.cl/~arisd/Leaflet_OPT2009.pdf)

*6th International Symposium on Generalized Convexity and Generalized Monotonicity*  
 Member of the organizing committee (50 participants)  
 University of the Aegean, Greece (August 1999).

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I have been (external) member of the *scientific committee* for the following events:

XIII Global Optimization Workshop (GOW'16)  
 Braga, Portugal (September 4–8, 2016)  
<http://apolo.dps.uminho.pt/gow16/committees.html>

Approximation and Optimization (MATRIX)  
 Melbourne, Australia (July 10–22, 2016)  
<https://www.matrix-inst.org.au/events/approximation-and-optimisation-3/>

XII International Seminar on Optimization and Related Areas  
 Lima, Peru (October 5–9, 2015)  
<http://isora2015.imca.edu.pe/committees.php>

XIII Conference on Function Theory on Infinite Dimensional Spaces  
 University Complutense of Madrid (February 4–7, 2014).  
<https://www.icmat.es/congresos/2014/ftida/>

Congress SMAI 2013 (French Society for Applied and Industrial Mathematics)  
 Seignosse, France (May 27–31, 2013).

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I coordinated, together with Bruno Bongioanni (Conicet, Santa Fe, Argentina) the section “Analysis” (including real and functional analysis, complex and harmonic analysis and approximation theory) held at the conference SUMA2019, co-organized by UMA (Argentinean Mathematical Society) and SOMACHI (Chilean Mathematical Society), held in Buenos Aires (September 2019).  
[http://www.union-matematica.org.ar/suma2019/sesiones\\_cientificas.html](http://www.union-matematica.org.ar/suma2019/sesiones_cientificas.html)

## 5 Research grants.

I use (★) to indicate individual grants, as well as team proposals and grants for complementary actions for which I acted as Principal Investigator (P.I.) or leading researcher. In case of international projects the symbol (★) means that I acted as coordinator (direct scientific responsible) of the national group.

### 5.1 Center for Mathematical Modelling (Deputy director)

I have been Deputy Director of the Center for Mathematical Modelling (CMM), for a total period of 4 years (July 2017–September 2021). CMM is a National Research *Center of Excellence* for Chile and an International Research Unit (CNRS UMI 2807) for France. CMM was the first CNRS research unit in mathematics outside the French territory created in 2000. This label is always granted for a fixed period (5 years) and is renewed after evaluation.

CMM has maintained constantly, until today, this CNRS–UMI status. Together with A. Maass (Director of the center), I represented the center to the French delegation (April 2019) during the last evaluation process (January–May 2019) and I was in charge of preparing the report of activities of the center.

As Deputy Director, together with an executive committee, I prepared, during July–October 2017, the

last 3-years public funding proposal, eventually approved under the reference:

(★) AFB170001 (2019–2021) Center for Mathematical Modelling, CNRS UMI 2807 (131 members)  
Budget (per year): 2.151.332.000 CLP ( $\cong$  2.400.000€) <http://www.cmm.uchile.cl/>

## 5.2 Individual grants

(★) FWF P-36344-N, (2022-2026, 4 years)  
*Unilaterality and asymmetry in Variational Analysis*  
Stand-Alone Project (Austrian Science Fund)  
Budget: 356.475€.

(★) Fondecyt Regular 1211217, (2021–2024, 4 years) (ranked 1 out of 93)  
*Self-contractedness and KL-property*  
Individual research grant (ANID, Chile)  
Budget: 61.500.000 CLP.

(★) Fondecyt Regular 1171854 (2017–2020, 4 years) (ranked 19 out of 89)  
*Unifying paradigms, models and structure in Optimization*  
Individual research grant (Conicyt, Chile)  
Budget: 90.341.000 CLP.

(★) Fondecyt Regular 1130176 (2013–2016, 4 years) (ranked 2 out of 61)  
*Exploring Structure in Variational Analysis: Self-contractedness, permutation invariance and o-minimality*  
Individual research grant (Conicyt, Chile)  
Budget : 88.320.000 CLP.

(★) MEC129163 (2004–2005, 1 year)  
*Nonsmooth Analysis and Integration of multi-valued operators*  
Individual research grant (RyC programme, MEC, Spain)  
Budget: 6.000€

(★) ERBFMBICT983381 (1998-2000, 2 years)  
*Subdifferentials and applications to generalized convexity*  
Budget: 327.427FF ( $\cong$  4.900€) (TMR programme, European Commission, EU)

## 5.3 Team grants

ECOS-Conicyt C18E04 (2019–2021, 3 years)  
*Dynamics, optimization and geometry: theory and numerics*  
Chile-France research cooperation grant (14 persons)  
Budget (per year): 3.640.000 CLP (Chilean part) ; 3.470€ (French part<sup>2</sup>)

(★) ECOS-Conicyt C14E06 (2015–2017, 3 years)  
*Intrinsic properties of Functional Analysis: convexity, geometry and nonlinear mappings*  
Chile–France research cooperation grant (10 persons)  
Budget (per year): 3.160.000 CLP (Chilean part) ; 4.470€ (French part<sup>2</sup>)

REDES–Conicyt 180032 (2019–2020, 18 months)  
*Stability of Optimization and Variational Systems with Applications to Natural Resources Management*  
Australia–Chile research cooperation grant (10 persons)  
Budget: 36.000.000 CLP

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<sup>2</sup>Financed by ECOS/Sud (France)



(★) REDES–Conicyt 150040 (2016–2017, 18 months)

*Hamiltonian Dynamics and Differential Inclusions*

Chile–France research cooperation grant (8 persons)

Budget: 24.000.000 CLP

(★) MathAmSud 20-MATH-02 (2020–2021, 2 years)

*Algebraic Real Geometry and Optimization* (ARGO)

Argentina–Brazil–Chile–France (26 persons)

Budget (per year): 2.300€ (Conicyt, Chile) ; 4.112€ (Capes, Brazil); 2.500€ (CNRS, France)

MathAmSud 17-MATH-06 (2017–2018, 2 years)

*From monotonicity to dynamics and equilibrium: structures and applications* (MODYNE)

Brazil–Chile–France–Peru (22 persons)

Budget (per year): 4.400€ (Conicyt, Chile) ; 6.000€ (Capes, Brazil);

5.200€ (MAEDI & CNRS, France)

11.500€ (Conicet & IMCA, Peru)

PGC2018-097960-B-C22 (2019–2022, 4 years)

*Contributions to variational analysis: fundamentals, duality, robustness and algorithms*

Budget: 107.883€ (MICINN, Spain and ERDF, EU) (10 persons)

MTM2014-59179-C2-1-P (2015–2018, 3 years)

*Fundamentals, methods and applications of continuous optimization*

Budget: 118.338€ (MICINN, Spain) (9 persons)

(★) MTM2011-29064-C03-01 (2012–2014, 3 years)

*Variational Optimization: Structure and Duality*

Budget : 42.800€ (MEC, Spain) (5 persons)

(★) MTM2008-06695-C03-03 (2009–2011, 3 years)

*Models of Convex Analysis, Tame Optimization and Applications*

Budget : 52.400€ (MEC, Spain) (6 persons)

MTM2005-08572-C03-03 (2005–2008, 3 years)

*Convexity and Monotonicity. Applications to Optimization* (3 persons)

Budget: 25.000€ (MEC, Spain) (3 persons)

EDF R&D (MOS) & INRIA (2001–2002)

*Primal-Dual heuristic in combinatorial optimization*

Budget: 30.000€ (French Electricity company, France) (2 persons)

RUUA-328 (1996–1998)

*Variational Inequalities and Equilibrium problems*

Budget: 1.600.000 DRH ( $\cong$  4.800 €) (U. Aegean, Research Unit, Greece) (2 persons).

#### 5.4 Grants for complementary actions

(★) SARE-CEXT-0464

Project “Consolider” for conferences–events:

Optimization Theory: Algorithms and Applications in Economics (October 24-28, 2011)

Budget: 7.800€ (i-math Consolider, Spain)

**(★) MTM2011-14208E**

Complementary action: Organization of an International Conference  
 Optimization Theory: Algorithms and Applications in Economics (October 24-28, 2011)  
 Budget: 8.000€ (Ministry of Education, Spain)

**(★) ARCS-DGR2011**

Complementary action: Organization of an International Conference  
 Optimization Theory: Algorithms and Applications in Economics (October 24-28, 2011)  
 Budget: 4.000€ (AGAUR, Catalonia, Spain)

**(★) PMII-C5-0333**

Project Consolider for the Research Program:  
 Variational Analysis and Optimization (September 1 - December 31, 2010)  
 Budget: 47.329€ (i-math Consolider, Spain)

**(★) MTM2009-08146E**

Complementary action: Organization of an International Conference:  
 Recent Advances in Optimization and Related Topics (November 29 - December 3, 2010)  
 Budget: 6.200€ (Ministry of Education, Spain)

**(★) ORG2010-36**

University grants for organization of conferences:  
 Recent Advances in Optimization and Related Topics (November 29 - December 3, 2010)  
 Budget: 3.000€ (UAB, Catalonia, Spain)

**(★) MIGS-C4-0212**

Project “Consolider” for conferences–events  
 Advances in Optimization: Theory, Methods and Applications (July 20-24, 2009)  
 Budget: 22.325€ (i-math Consolider, Spain)

**(★) MTM2008-04356E**

Complementary action: Organization of a Summer school at the CRM  
 Advances in Optimization: Theory, Methods and Applications (July 20-24, 2009)  
 Budget: 5.870€ (Ministry of Education, Spain)

## 6 Research profile, invited talks, colloquia, dissemination

My research area is *Variational Analysis and Optimization*, with main contributions in convex and non-smooth analysis, in semialgebraic optimization and in variational inequalities. I have also contributed in other domains: functional analysis, dynamical systems, classical analysis/geometric measure theory and combinatorial optimization.

### 6.1 Publication record (in numbers)

I have currently published<sup>3</sup> **66** articles in journals, **4** articles in Lecture Notes (conference proceedings) and I have co-edited one book (with J.-E. Martinez-Legaz).

I publish regularly in the “top-3” optimization journals:

*Math. Program.* (5 times), *SIAM J. Opt.* (9 times) and *Math. Oper. Res.* (3 times),

as well as in classical journals of my area:

*J. Convex Anal.* (5 times), *J. Optim. Th. Appl.* (5 times), *J. Math. Anal. Appl.* (5 times).

Some of my articles appear in prestigious journals of mathematical analysis:

<sup>3</sup>See Section 3 (List of Publications) for details.

*J. Anal. Math.*, *Israel J. Math.*, *J. Funct. Anal.*, *J. Anal. Pure Appl.* and *J. Geom. Anal.*

Last but not least, my publication list includes generic top-rank journals:

*Advances in Math.*, *London Math. Soc.* (2 times), *Trans. Amer. Math. Soc.* (3 times),  
*Ann. Inst. Fourier*, *Proc. Amer. Math. Soc.* (4 times).

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**Citations.** According to MathSciNet (16.10.2023), my works have received **1515** citations from **1272** authors (h-index **18**). My first three most-cited articles are above **150** citations. In GoogleScholar (16.10.2023) my research profile appears with **3591** citations and h-index **30**.

## 6.2 Plenary talks at international conferences.

(*Vietnam*) Dynamical systems and Semi-algebraic geometry: Interactions with Optimization and Deep Learning. University of Dalat, Vietnam, July 17-21, 2023  
 Plenary talk: *A convex function satisfying the Lojasiewicz inequality but failing the gradient conjecture both at zero and infinity*

(*Vietnam*) International Conference on Optimization and Variational Analysis with Applications 2023 (ICOVAA-2023), VIASM, Hanoi, Vietnam, July 12-15, 2023  
 Plenary talk: *Slope determination and sensitivity for convex functions*

(*France*) Nonsmooth and Variational AnaLysis (NAVAL), Conference (in honor of L. Thibault) June 26-28, 2023, Dijon, France. Plenary talk: *Determination of functions by metric slopes.*

(*China*) Advances in Nonsmooth Analysis and Applications, December 6-9, 2019, SUSTech, Shenzhen.  
 Plenary talk: *Critical points for Lipschitz functions.*  
[http://www.dim.uchile.cl/~arisd/Poster\\_SUSTech.pdf](http://www.dim.uchile.cl/~arisd/Poster_SUSTech.pdf)

(*Spain*) Function Theory on Infinite Dimensional Spaces XV, November 18–21, 2019, Madrid.  
 Plenary talk: *Lipschitz continuous functions and criticality.*

(*France*) Geometry of Banach spaces and Optimization, June 16-21, 2019, Métabief.  
 Plenary talk: *Spaceability of the space of Clarke-saturated Lipschitz functions.*  
 (Conference on the occasion of R. Deville's 60th birthday.)

(*Iran*) Conference on Nonlinear Analysis and Optimization (NAOP2018), June 18–20, 2018, Zanjan.  
 Plenary talk: *Paradigms of gradient systems: asymptotic study.*  
 (Conference on the occasion of N. Hadjisavvas 65th birthday.)

(*Spain*) Function Theory on Infinite Dimensional Spaces XV, UCM, February 6-9, 2018, Madrid.  
 Plenary talk: *Gradient flows, second order gradient systems and convexity.*  
 (Conference on the occasion of J. Jaramillo's 60th birthday.)  
[http://www.dim.uchile.cl/~arisd/Poster\\_Madrid18.pdf](http://www.dim.uchile.cl/~arisd/Poster_Madrid18.pdf)

(*Germany*) Nonsmooth Optimization and its Applications, May 15-19, 2017, HCM, Bohn.  
 Plenary talk: *Self-contracted curves: recent developments and applications.*  
[http://www.dim.uchile.cl/~arisd/Poster\\_Bonn.pdf](http://www.dim.uchile.cl/~arisd/Poster_Bonn.pdf)

(*Australia*) Mathematical Optimization Down-Under (MODU2016), July 18-22, 2016, Melbourne.  
 Plenary talk: *Self-contracted curves: recent developments and applications (keynote)*  
[http://www.dim.uchile.cl/~arisd/Poster\\_MODU.pdf](http://www.dim.uchile.cl/~arisd/Poster_MODU.pdf)

(*France*) Variational Analysis, Optimization and Quantitative Finance, May 18-22, 2015, Limoges.

Plenary talk: Nonsmooth critical values and Sard type results  
(Conference on the occasion of T. Rockafellar's 80th birthday.)

(Spain) Function Theory on Infinite Dimensional Spaces XII, February 7-10, 2012, Madrid.  
[http://www.dim.uchile.cl/~arisd/Confe\\_12.pdf](http://www.dim.uchile.cl/~arisd/Confe_12.pdf)

(France) Convex Analysis, Optimization and Applications. January 5-9, 2010, Les Houches.  
Plenary Talk: *Genericity of partial smoothness in semialgebraic optimization*  
(Conference on the occasion of C. Lemarechal's 65th birthday.)

(France) International Conference on Nonsmooth and Variational Analysis in Sciences and Engineering  
Limoges, June 2007. Plenary Talk: *Variational Analysis and Tame Optimization*.

(France) Calculus of Variations, Shape Optimization, June 10-13, 2003, Bourget-du-Lac.  
Plenary Talk: *Subsmooth sets and related concepts*.

### Invited talks at International Workshops

(Italy) Variational Analysis and Optimization, September 14-15, 2023, Messina.  
Talk: *Using slopes to determine continuous functions in metric spaces*.

(Bulgaria) (16th Workshop on) Well-posedness of optimization problems and related topics, July 3-7, 2023, Borovets.  
Talk: *Determination of functions by metric slopes*

(Austria) 2nd Austrian Calculus of Variations Day, November 17-18, 2022, Salzburg.  
Talk: *Kurdyka-Lojasiewicz inequality in Variational Analysis*

(Austria) Optimization Methods in Acoustics, October 10-12, 2022, Vienna.  
Talk: *Descent modulus and function determination*.

(Spain) Optimization and Variational Analysis (OVA11), September 22-23, 2022, Alicante, Spain  
Talk: *Determination of functions by metric slopes*.

(USA) Modern Nonsmooth Optimization (in honor of Adrian S. Lewis) August 8-11, 2022, Seattle  
Talk: *Determining a function via the modulus of its derivative*.

(Austria) Workshop on Numerical Algorithms in Nonsmooth Optimization, February 2019, ESI, Vienna  
Talk: *Self-contracted curves and Applications*.

(Austria) Workshop on Nonsmooth and Variational Analysis, January 2019, ESI, Vienna.  
Talk: *Detecting and controlling the size of critical values: from Classical to Nonsmooth Analysis*.

(Chile) Control of State-Constrained Dynamical Systems, September 24-27, 2019, Valparaiso.  
International workshop and summer school.  
Talk: *From the Gradient Dynamics to the Sweeping Process*.  
[http://www.dim.uchile.cl/~arisd/Poster\\_Valpo.pdf](http://www.dim.uchile.cl/~arisd/Poster_Valpo.pdf)

(Brazil) XII Brazilian Workshop on Continuous Optimization, July 23-27, 2018, Foz do Iguaçu.  
ICM 2018 Satellite Conference.  
Semi-plenary talk: *Gradient flows and determination of convexity*.

(Iran) Workshop on Optimization, Institute of Physics and Mathematics, June 23, 2018, Isfahan.

Invited talk: *The Morse-Sard theorem for Lipschitz selections.*

(Italy) 71th Workshop “Advances in Convex Analysis and Optimization”, June 2019, Erice.

Plenary talk: *Spaceability of Clarke saturated functions.*

<http://www.dim.uchile.cl/~arisd/Poster-Erice-2019.pdf>

(Peru) XIII International Seminar on Optimization and Related Areas, October 9-13, 2017, Lima

Plenary Talk: *Determining a function from partial data: The Gleaser-Whitney problem.*

(Mexico) Splitting Algorithms, Modern Operator Theory, and Applications.

BIRS conference (upon invitation), September 17-22, 2017, Oaxaca

Talk: *On the Glaeser-Whitney extension problem.* Video available at:

<http://www.birs.ca/events/2017/5-day-workshops/17w5030/videos/watch/201709181005-Daniilidis.html>

(Italy) 66th Workshop “Advances in Convex Analysis and Optimization”, July 2016, Erice.

Plenary talk: *Interplay between geometric descent and structure in optimization.*

[http://www.dim.uchile.cl/~arisd/Poster\\_Erice16.pdf](http://www.dim.uchile.cl/~arisd/Poster_Erice16.pdf)

(Saudi Arabia) Weak Sharp Minima in Optimization, KFUPM, December 2015, Dhahran.

Plenary talk: *Clarke critical values and the Morse-Sard theorem.*

(France) Workshop on the Whitney problems.

CIRM conference (upon invitation), October 19–23, 2015, Luminy.

Talk: *Semialgebraic paradigms in structural optimization: dynamical considerations.*

(Peru) XII ISORA, October 5-9, 2015, Lima.

Plenary talk: *The convex paradigms in optimization.*

[http://www.dim.uchile.cl/~arisd/Poster\\_ISORA15.pdf](http://www.dim.uchile.cl/~arisd/Poster_ISORA15.pdf)

(France) Real Analytic Geometry and Trajectories of Vector Fields.

CIRM conference (upon invitation), June 8–12, 2015, Luminy.

Talk: *Trajectory length of the tame sweeping process*

(France) Real singularities and applications,

CIRM conference (upon invitation), February 16–20, 2015, Luminy.

Talk: *Applications of Real Algebraic Geometry to Variational Analysis*

(Uruguay) Real Number Complexity Workshop<sup>4</sup>, December 9–11, 2014, Montevideo

Invited talk: *Variational Analysis in the light of Semialgebraic Geometry.*

(Peru) IV Latin American Workshop on Optimization and Control (LAWOC), July 2014, Lima.

Invited talk: *Orbits of geometric descent.*

(Peru) XI ISORA, October 7-13, 2013, Lima.

Plenary talk: *The Sard theorem from the viewpoint of nonsmooth analysis.*

(France) Alicante-Elche-Limoges Workshop in Optimization (ALEL VI), July 2–4, 2012, Limoges.

Plenary talk: *Self-contracted curves and applications in dynamical systems.*

[http://www.dim.uchile.cl/~arisd/ALEL12\\_poster.pdf](http://www.dim.uchile.cl/~arisd/ALEL12_poster.pdf)

<sup>4</sup>This workshop is part of the main conference on *Foundations of Computational Mathematics* (FoCM 2014).

(Italy) Workshop on Optimization and Related Topics, May 10–11, 2012, Milano.

Invited talk: *Trajectories of gradient systems for functions with isolated singular values.*

(Italy) Workshop on Optimization and Related Topics (Università Cattolica), May 5-6, 2011, Milano.

Invited talk: *Genericity results in Convex Minimization problem.*

(Chile) III Latin American Workshop on Optimization and Control (LAWOC), January 2012, Viña.

Plenary talk: *Gradient orbits of smooth functions with isolated singular values.*

(Spain) Alicante-Elche-Limoges Workshop (ALEL III), June 23–25, 2011, Castro Urdiales.

Plenary talk: *Generalized Hessians and second-order viscosity subjets.*

(France) Workshop on Geometry and Algebra of Linear Matrix Inequalities (GeoLMI)

LAAS-CNRS, November 19–20, 2009, Toulouse.

Invited talk: *Linear Maximization over semialgebraic sets and partial smoothness.*

(Italy) 12th Workshop on Well-Posedness of Optimization and related topics, September 2009, Trento

Invited talk: *Genericity of partial smoothness in tame optimization.*

(Bulgaria) Workshop on Optimization and Applications, December 17–19, 2008, Sofia.

Invited talk: *Sard type theorems in Tame Variational Analysis: illustration of semialgebraic techniques.*

(Spain) 11th Workshop on Well-Posedness of Optimization and related topics, Alicante, September 2007.

Invited talk: *On the uniform finiteness of lengths of trajectories of gradient systems.*

(Spain) Workshop in Economics & Applied Mathematics, December 12–14, 2002, Barcelona.

Invited talk: *Convex Integration of Fenchel subdifferentials.*

### Plenary talks at National Workshops

(France) Journées annuelles 2018 du GdR MOA, October 17-19, 2018, Pau (**keynote**)

Talk: *On functions that saturate the Clarke subdifferential.*

(Chile) Conference of the Chilean Mathematical Society (SOMACHI 2013), November 7–9, 2013, Olmué.

Semi-Plenary talk: *Asymptotic behavior of gradient orbits* (in Spanish).

(France) Journées du groupe MODE de la SMAI, March 28–30, 2012, Dijon (**keynote**)

Talk: *Genericity results on well-posedness and partly smoothness* (in French)

(Spain) Conference of the Spanish Royal Mathematical Society 2009

Session: Real Analytic and Algebraic Geometry (RAAG), February 4–7, 2009.

Invited talk: *Sard type theorems in Tame Variational Analysis.*

(Spain) Workshop on Nonsmooth Analysis and Applications, UCM, February 7–9, 2007, Madrid.

Talk: *Subdifferential Representation of Convex functions.*

### 6.3 Research colloquiums and research seminars

*Research colloquiums:*

Madrid, Spain (February 3, 2020)

Mathematical Analysis Colloquium, Interdisciplinary Mathematical Institute, University Complutense.

Vienna, Austria (December 4, 2019)

Mathematisches Kolloquium, Faculty of Mathematics, University of Vienna.

Göttingen, Germany (July 4, 2017)  
Kolloquien (Angewandte Mathematik), University of Göttingen.

Buenos Aires, Argentina (June 23, 2016)  
Mathematical Colloquium, University of Buenos-Aires (UBA).

Santiago, Chile (September 25, 2015)  
Colloquium in Mathematics, Catholic University of Chile (PUC).

Grenoble, France (March 9, 2006)  
Colloquium in Mathematics, IMAG, University of Grenoble.

Barcelona, Spain (April 21, 2004)  
Department Colloquium, University Autonomous of Barcelona (UAB).

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*Distinguished seminars:*

Séminaire CMAP (September 18, 2018)  
École Polytechnique, Palaiseau, France

Séminaire Parisien d'Optimisation (SPO) (November 6, 2018) & (May 16, 2005)  
Institut Henri Poincaré, Paris, France

101 Seminario Iberoamericano de Matemáticas (February 2018)  
Centro Tordesillas de relaciones con Iberoamérica, Universidad de Valladolid, Spain

Seminario Mischa Cotlar (June 24, 2016)  
Mathematical Institute of Argentina (IAM).

90 Seminario Iberoamericano de Matemáticas (February 2016)  
Centro Tordesillas de relaciones con Iberoamérica, Universidad de Valladolid, Spain

Optimization and Applications Seminar (Fall 2008)  
ETH Zurich and University of Zurich, Switzerland

*Webinars:*

Séminaire Français d'Optimisation (June 17, 2021)  
One World Optimization Seminar (October 5, 2020)  
OWOS Series, University of Vienna, Vienna, Austria  
Singularity seminar UFC (August 4, 2020)  
Federal University of Ceara, Fortaleza, Brazil

*Other seminars classified by countries:*

(Australia) Melbourne (25/07/2016, Seminar RMIT).

(Belgium) Université Catholique de Louvain-la-Neuve (March 12, 2007).

(Brazil) Universidade Federal da Rio (March 30, 2007), IMPA, Rio de Janeiro (April 13, 2007).

(Canada) CECM, University of Simon Fraser, Vancouver (July 2, 2003).

(Chile) Universidad de Concepción (June 12, 2013), Center of Mathematical Modeling (June 30, 2004).

(France)

Paris Orsay (2/2/2017, séminaire géométrie-topologie; 7/2/2017, séminaire d'analyse harmonique), Paris University "Pierre et Marie-Curie" (3/2/2017, séminaire de géométrie et systèmes dynamiques).

(Center/North of France) Chambéry (13/11/2018 & 15/4/2011, séminaire de géométrie; 11/4/2005, 7/11/2003 & 16/04/2002, séminaire d'EDP) Tours (20/3/2008 & 1/6/2006), Limoges (3/3/2006, 26/4/2002 & 28/5/1999), Brest (29/11/2022, 13/10/2020, 5/4/2011 & 2/12/2003). INRIA Rhône-Alpes (April 21, 2011), IMAG (5/6/2008), Lyon I (25/11/2003, 19/12/2001)

(South of France) Toulouse (12/05/2022), Bordeaux (6/11/2017, 7/7/2008, 4/6/2007 & 9/11/1998), Pau (28/6/2012, 29/6/2009, 16/6/2009, 8/7/2008, 28/5/2007 & 15/10/2002), Montpellier II (8/3/2006, 9/12/2003, 21/3/2000), Avignon (8/11/2001), Marseille (May 9, 2011 & May 12, 2011).

(French Antilles) Pointe-à-Pître (9/12/2011, 23/9/2010, 13/12/2008, 13/4/2006, 10/2/2005 & 24/2/2005).

(Greece) Salonica (27/5/2003), Crete (3/9/2002), Athens (15/03/2004 & 4/9/2001), NTUA (20/5/2014, 9/12/2009, 11/2/2009, 9/9/2008, 29/5/2002, 29/5/2001), Samos (14/3/2001).

(Israel) The Technion University of Haifa (March 7, 2010)

(Italy) Università degli studi di Napoli (Federico II) (16/06/2022), Università di Pisa (February 23, 2011), Università Cattolica di Sacro Cuore, Brescia (February 22, 2011), Politecnico di Milano (February 16, 2011), Università degli Studi di Padova (February 28, 2007).

(Japan) University of Saitama, Tokyo (December 3, 2004)

(Mexico) Benemérita Universidad Autónoma de Puebla (March 24, 2010)

(Spain) Universitat Politècnica de Catalunya (29/5/2009), Universidad de Murcia (11/5/2009), Centre de Recerca Matemàtica (24/4/2007), Universidad Complutense de Madrid (15/9/2005), Universitat Autònoma de Barcelona (4/6/2010, 26/2/2010, 21/12/2009, 4/12/2006, 5/7/2005, 18/10/2004, & 1/3/1004), Universidad de Alicante (20/9/2005 & 27/2/2004), Universidad de Elche (19/9/2005 & 26/2/2004).

#### 6.4 Dissemination activities

Exceptional lecture (90 minutes, in French) about *Chess and Mathematics* within the course (*Jeux Mathématiques*) for third-year students of the University of Tours (March 2008).

Interview (in Spanish) for the Magazine "Beauchef" (No 5, 2013). (Periodic edition —two volumes per year— with news on Sciences and Engineering related to the activities of the University of Chile.)

Interview (in English) for the newsletter of the Center of Mathematical Modelling, on the topic *When science moves the chess pieces*. Link: <http://www.cmm.uchile.cl/?p=23376>

Organization (together with Axel Osses) of the production (and active participation to the recording) of the Video *Beautiful Concepts, a poetic walk through mathematics* (in Spanish), released on January 13, 2016, in the occasion of the 50th anniversary of the department.

Link available at <http://www.dim.uchile.cl/videos/118736/video-bellos-conceptos-un-paseo-poetico-por-las-matematicas>

Active participation to an "open-day dissemination activity" (*Jornada de puertas abiertas*) organized by the Engineering Faculty of the University of Chile for schoolchildren (March 12, 2016).



Dissemination purpose visit (April 14, 2016), together with Axel Osses, to the high-school “Instituto Nacional Barros Arana” (Santo Domingo #3535, Santiago). Projection of the video for the 50th anniversary of DIM to approximately 150 pupils. Discussion/questions/responses concerning the labor of a researcher in Mathematical Engineering. Link of the activity:

<http://www.dim.uchile.cl/noticias/120757/bellos-conceptos-matematicos-al-inba>.

Exceptional lecture (90 minutes, in French) within the course MAP557 (*Recherche opérationnelle: aspects mathématiques et applications*) for third-year students of “École Polytechnique” interested in Operations Research (November 6, 2018).

Participation in the organization of the celebration fest (May 16, 2019) for the 100th graduate of the Doctoral programme of DIM and Chairman of the closing section. Link of the activity:

<http://ingenieria.uchile.cl/noticias/153913/dim-celebro-sus-primeros-100-doctorados>

Chairman of a session at the dissemination activity *Le mois de l'optimisation* organized by IRMAR (Rennes) and the GDR 3273 CNRS (Mathématiques de l'Optimisation et Applications) (November 2020). <https://mois-optim.math.cnrs.fr/>

## 7 Collaborators, visiting positions

I have **58** co-authors in WoS journals.

### Invited professor (official assignment)

*(in Austria)*

University of Vienna (December 2017 – January 2018, 2 months)

Lectures: Elective Module, Master AMaSciCo (Applied mathematics and scientific computing)

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*(in France)*

University of Sorbonne-Panthéon (Paris 1) (February 2019, 2 weeks).

*Gaspard Monge invited professor*<sup>5</sup>, École Polytechnique, Palaiseau (September-December 2018, 4 months).

Lectures: Elective Module, Master COCV (Contrôle, Optimisation et Calcul des Variations).

University Paris-Sud (Orsay) (February 2017)

INSA-Rennes (PR1-03, February 2023), (PR1-03, November 2020), (PR1-03, November 2016)

University of Toulouse 1 (Capitole) (PR1-03, May 2012, 1 month)

University of Versailles (Saint Quentin) (PR1-03, March 2012, 1 month)

University of Pau (4 times, 1 month)

(December 2011, PR1-03) (June 2009, PR1-03), (June 2008, PR1-03), (May 2007, PR2-03)

University of Tours (January-May 2008, PR1-01, 5 months)

University of Antilles-Guyana DOM (2 times, 1 month)

(April 2006, MCF-08, 1 month), (February 2005, MCF-05, 1 month)

University of Savoy (March-May 2005, CRA-07, 3 months)

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*(in Greece)*

University of the Aegean, Samos (Spring 2001, Adjutant Lecturer).

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<sup>5</sup>The program included a financial support for my PhD student S. Tapia (4 months salary).

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*(in Italy)*

Università degli studi di Napoli (Federico II) (INDAM, June 2022, 3 weeks)

Politecnico di Milano (INDAM, GNAMPA, February 2011, 1 month)

**Invited research stays** (via grants)

*(in Australia)*

University of Ballarat (November 2013, 2 weeks) (invited by Alexander Kruger)

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*(in Brazil)*

IMPA (Institute for Pure and Applied Mathematics), Rio de Janeiro, Brazil

(February 2007, 1 month) (invited by Mikhail Solodov and Claudia Sagastizabal)

*(in Canada)*

Simon Fraser University (June 2003, 1 month) (invited by Adrian S. Lewis)

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*(in France)*

University of Bretagne Occidentale (Brest) (October 2020, 3 weeks) (invited by Marc Quincampoix)

University of Nice (June 2016, 1 week) (invited by Ludovic Rifford)

University of Franche-Comté, France (December 2016, 2 weeks) (visiting Gilles Lancien)

University of Bordeaux 1, France (October 2015, 2 weeks) (visiting Robert Deville)

University of Tours (February 2006, 2 weeks) (invited by Olivier Ley)

University of Provence, Marseille, France (May 2011, 1 week) (invited by Nicolas Dutertre)

University Paris 6 (May 2010, 6 weeks) (invited by Jerome Bolte)

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*(in Israel)*

The Technion University of Haifa (February 2010, 10 days) (invited by Alexander D. Ioffe)

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*(in Italy)*

University of Padova (February 2007, 2 weeks) (invited by Giovanni Colombo)

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*(in Japon)*

University of Saïtama (December 2004, 1 week) (invited by Toshi Fukui)

University of Nagoya (November 2004, 2 weeks) (invited by Masahiro Shiota)

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*(in Mexico)*

University ‘Las Americas’ of Puebla (March 2010, 10 days) (invited by Maxim Todorov)

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*(in Peru)*

IMCA (Institute for Mathematics and related sciences), Lima, Peru (October 2019, 3 weeks)

Lectures at the Doctorate programme. (The lecture notes will be published by EDUNI (in press))

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*(in Spain)*

UNED, Madrid (2018, 2017, 2015) (invited by Estibalitz Durand)

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*(in USA)*

University of Washington, Seattle (July 2019, 3 weeks) (invited by Dmitriy Drusviatskiy)

University of Cornell, USA (December 2012, 1 week) (invited by Adrian S. Lewis)

## 8 Awards, Qualifications, Hobbies

### *Fellowships–Awards.*

Awards from the Greek Mathematical Society: National Olympiads 1985 (2nd award), 1987 (Distinction)

Awards from the Municipality of Athens: Best school performance (1985, 1986, 1987, 1988)

Rank admission awards (1988), Physics Department (Entrance Rank 2)

Papadakis Foundation Fellow (1989-1992)

Valedictorian (1992), Physics Department, University of Athens

Bodossakis Foundation Fellow (1993-1996)

Marie-Curie Fellow (1998-2000)

Distinction for publishing in a best-10 journal (University of Chile, 2013).

Gaspard Monge invited professor (École Polytechnique, 2018).

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### *Accreditations.*

Accreditation ANECA – CU (“Catedrático de Universidad”) (Spain 2011)

Accreditation of Advanced Research (AQU, Catalonia, 2010)

Accreditation of the Program I-3 (Distinguished Researcher Trajectory) (ANEP, Spain 2007)

Accreditation of Professorship Level in Applied Mathematics (Qualification PR-26) (2003, CNU, France)

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### *Hobbies.*

*Chess:* FIDE Master (Best ELO 2345), Junior (sub-20) Champion of Greece (1988), Greek National Junior Team (Balkan championship 1988, 1989, 1990), Greek National Team (Olympiad 1988), European Junior Championship, Arnhem, Netherlands, 1988 (13th position), Student Champion of Greece with the team of University of Athens (1989)

*Bridge:* Occasional competitions at the St Egrève Club (2002-2003)

## 9 Training and supervision of students

### 9.1 Supervision of Post-doctorate fellows.

I was scientific responsible of David Salas during his post-doctorate stay at the University of Chile (2019–2020), financed by Fondecyt after a joint application. Since March 2020, David is hired by the UOH University (Chile) as (tenure-track) Assistant Professor.

I was scientific responsible of Pham Duy Khanh, during his first post-doctorate stay at the University of Chile (2016–2017, financed by the CMM–Basal project), as well as during his current post-doctorate stay (2018–2021) as Fondecyt fellow (grant obtained after a joint application). Since 2022, Khanh is Senior Lecturer at the University of Economics of Ho Chi Minh City (Vietnam).

### 9.2 Supervision of PhD Thesis

– *Completed PhD thesis:*

Gonzalo Flores Garcia, University of Chile (Defense: April 26, 2021).

Title: *Integration of essentially bounded functions and classification of Asymmetric spaces.*

During his thesis Gonzalo Flores has been financed by ANID (4 years). The thesis contains three articles (including a joint paper published by *SIAM J. Opt.* in 2019).

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Sebastian Tapia Garcia, University of Chile & University of Bordeaux (Defense: November 08, 2021)

Title: *Contributions to Linear Dynamics, Sweeping process and regularity of Lipschitz functions.*

The thesis has been co-supervised by R. Deville (Bordeaux Institute of Mathematics) and financed by ANID (4 years). The thesis contains three publications and three preprints.

Diana Narvaez, University of Chile (Defense: April 20, 2022)

Title: *Some contributions to degenerate state-dependant sweeping processes*

(co-director, together with E. Vilches and A. Hantoute)

The thesis has been financed by a CMM fellowship and FONDECYT grants.

Claudia Soto, University of Chile (Defense: September 8, 2022)

Title: *Inf-convolutions and convexifications via the lemma Shapley-Folkman.*

This thesis is co-directed with P. Perez and A. Hantoute.

During her thesis, Claudia Soto has been financed by ANID (4 years).

Francisco Venegas Martinez (ANID fellowship, University of Chile) (Defense: July 21, 2023)

Title: *Functional analysis in asymmetric structures*

The thesis contains two joint articles (*J. Funct. Anal.* (2020) and *Studia Mat.* (2021)).

– *Expected PhD thesis*

Juan José Maulen Muñoz (University of Groningen and University of Chile) (expected 12.12.2023)

Title: *Acceleration of optimization algorithms*

Co-direction with Juan Peypouquet (University of Groningen)

Tri Le Mihn (University Assistant, TU Wien) (expected March 2026)

Title: to be determined

Sotiris Armenakos (University Assistant, TU Wien) (expected March 2027)

Title: to be determined

In the past, I was informally involved in the following PhD thesis:

Mohammed Bachir (University of Bordeaux, 2000, director Robert Deville)

He is now Associate Professor at the University Paris-Sorbonne (France). His thesis contains two joint articles (published by *Bull. Austral. Math. Soc.* in 2000 and *Set-Valued Anal.* in 2002), both prepared during the period of my post-doctorate stay at Talence (1998–2000).

Jerome Malick (INRIA, Grenoble, 2005, director Claude Lemarechal).

He is now CNRS senior researcher at the University of Grenoble (France). His thesis contains two joint articles (published by *J. Convex Anal.* in 2005 and *Optimization* in 2006). These works have been prepared during my post-doctorate stays at INRIA (2001–2002 and Automne 2003) as well as 10-days visit of J. Malick in Barcelona (June 2004).

Yboon Garcia (University of Antilles, 2008, director Marc Lassonde).

She is now Professor at the Pacific University (Lima, Peru). Her thesis contains a joint article (published by *J. Optim. Th. Appl.* in 2007). This work has been prepared during my research stay at the University of Antilles as invited professor (April 2006) as well as a one-month research stay of Yboon at the CRM (University Autonomous of Barcelona) two months later (June 2006).

Jeffrey Pang (Cornell University, 2009, director Adrian S. Lewis).

He was appointed Assistant Professor at NUS (Singapore). His thesis contains a joint article (published by *J. London Math. Soc.* in 2011) prepared during his 3-months research stay at the CRM (University Autonomous of Barcelona) in Autumn 2008.

Dmitriy Drusviatskiy (Cornell University, 2013, director Adrian S. Lewis).

He is now Full Professor at the University of Washington (USA). His thesis contains two joint articles (published by *SIAM J. Matrix Anal.* in 2014 and *Canad. J. Math.* in 2015) prepared during his stay at the University Autonomous of Barcelona in Autumn 2011 (within the 4-months Research programme on Variational Analysis that I organized at the CRM), as well as my research visit at Cornell University in November 2012.

Axel Böhm (University of Vienna, 2020, director Radu Bot):

Axel assisted to my lectures at the University of Vienna (December 2017–January 2018) and made a 3-months research stay at the University of Chile (March-May 2019). During his stay we prepared a joint article (to appear in *J. Convex Anal.*).

### Direction of Master Thesis

Guillaume Grelier (University of Chile, August 2018)

Thesis: *On the geometry of compact convex sets* (in Spanish).

Francisco Venegas Martinez (University of Chile, March 2018)

Thesis: *A Banach–Stone theorem for Finsler Manifolds* (in Spanish).

Sebastian Tapia García (University of Chile, September 2017)

Thesis: *Self-contracted and  $\lambda$ -curves. Rectifiability and asymptotic behaviour* (in Spanish).

Roberto Bobadilla Solari (University of Chile, October 2017)

Thesis: *Geometry of descent systems: asymptotic study via desingularization* (in Spanish).

Gonzalo Flores Garcia (University of Chile, September 2016)

Thesis: *Lipschitz-Free spaces and a characterization for the finite-dimensional case* (in Spanish).

Ata Atur (UAB, July 2011)

Thesis: *Infinitely repeated zero-sum games with partial information.*

María del Mar Gómez Pujalte (UAB, September 2010).

Thesis: *Duality in convex optimization.* (co-supervised with JE Martínez-Legaz)

I was member of numerous Bachelor and Master committees held in UAB (2005–2013) and in the University of Chile (2013–today).

I participated to the examination committee for Master thesis defenses within the international Master *Erasmus Mundus* (Barcelona, 2011–2012).

As member of the Education Advisor Committee of the Department of Mathematical Engineering, during the period 2014–2017 I revised/developed courses syllabi of seven courses for Bachelor or Master Degree in Mathematical Engineering. I also revised the syllabi of three courses in the UAB.



## Teaching activities

I have a broad teaching experience in several countries, having lectured in five languages (Catalan, English, French, Greek, Spanish), at all levels (Undergraduate, Master or Doctorate), involving students with different background and type of studies: Mathematical Engineering, Mathematics, Applied Statistics, Actuarial Sciences, Chemistry and Technical Engineering.

I am currently teaching at the TU Wien, in Austria. The period 2013–2021, I was teaching regular courses and advanced seminars at the University of Chile as Full Professor. I have been Department Head for undergraduate studies for two years (2014–2016) and coordinator for all mathematical courses of the Faculty (5.700 students). Between 2004–2013, I was teaching at the Autonomous University of Barcelona (UAB), as (tenure) Associate Professor. I have also taught as *part-time lecturer* at the University of the Aegean (Greece) and at the University of Grenoble (France), as (fixed-term) *Assistant Professor* (ATER) at the University of Pau (France) and as Invited professor at the University of Tours (France). I was invited to deliver a specialized course at Master/Doctorate level at an advanced Spring School in Paseky (Czech Republic), at the University of Vienna (Austria), at the Doctorate program of IMCA (Peru) and at École Polytechnique (France).

I give below the complete list of my teaching activities.

**U1–U3** = Undergraduate courses ; **M1–M2** = Master courses ; **D** = Module in a Doctorate program

### 1 Teaching activities at the TU Wien (since 2021)

Lectures on the courses:

- *Introduction to Optimization* (second year, mandatory).
- *Convex and Tame Optimization* (Master level);
- *Calculus of Variations and Optimal Control* (Master-Doctorate level)

In charge of advanced seminars during the whole year.

### 2 Teaching activities at the University of Chile (2013–2021)

(*Regular courses*)

- *Calculus of Several Variables* (MA2001, **U2**, 6 ECTS, Mandatory) (Taught 7 times)

[*Syllabus*: Topology of  $\mathbb{R}^n$ , continuity, Lipschitz continuity, Banach fixed point theorem, differentiability, inverse function and implicit function theorems, Schwarz theorem, optimization, Lagrange method, higher order derivatives, Riemann integration, Fubini theorem, area calculation and volumes.]

Basic course in all Mathematical studies as well as all Bachelor curricula in Engineering at the University of Chile (100 students in average). I have been teaching continuously (every year) this course since 2013.

- *Metric spaces and General Topology* (MA3801, **U3**, 9 ECTS, Mandatory) (Taught 2 times)

[*Syllabus*: (*Part 1*) Axiom of choice, Zorn lemma, ordinals, cardinals, Cantor Bendixson index, topology of metric spaces, convergence, continuity, compactness, completeness, Baire theorem, Variational Principle of Ekeland, product space, equivalent metrics and Mazurkiewicz theorem, completeness of a metric space, universal surjectivity of Cantor set ; (*Part 2*) General Topology, separability axioms, compactness, convergence of nets, Tychonoff theorem, filters et ultrafilters, Urysohn lemma, Unit partitions, Alexandroff compactification, Stone–Čech compactification, connectedness, Quotient topology, introduction to homotopy and fundamental group.]

Fundamental course of the Bachelor Curriculum in Mathematical Engineering at the University of Chile (45 students in average). This course is also prerequisite for our Master and Doctorate program. I taught this course in 2014 and 2016.

- *Functional Analysis* (MA4801, **M1**, 6 ECTS, Mandatory) (Taught 2 times)

[*Syllabus*: Locally convex topological vector spaces, semi-norms, Hahn-Banach theorem, Fréchet spaces, Banach spaces, Open mapping theorem, closed graph theorem, Banach-Steinhaus principle, dual spaces, weak topologies, Alaoglu theorem, reflexive spaces, Krein-Milman theorem, separable isometric universality of  $C[0, 1]$ . Hilbert spaces, Riesz representation theorem, Stampacchia and Lax-Milgram theorem, Compact operators, Spectral analysis of Auto-adjoint operators, Banach algebras,  $C^*$ -algebras, Gelfand-Naimark theorem, General duality theory, Polar topologies, abstract version of Alaoglu theorem.]

Fundamental course at a Master level (4th year in Mathematical Engineering). I taught this course in 2017 and 2018 (20 students in average).

*Complex Analysis and Special Functions* (MA4001, **U3**, 6 ECTS, Elective Module<sup>6</sup>) (Taught 2 times)

[*Syllabus*: Fundamental theorem of Algebra (d’Alembert), holomorphic functions, Cauchy–Riemann conditions, Analytic functions, Goursat theorem, Cauchy homotopic invariance theorem, simple connected spaces, Morera theorem, Liouville theorem, Zeros of holomorphic functions, special functions, Classification of isolated singularities, Laurent series, Residua, Rouché theorem, Weierstrauss theorem, Inverse mapping theorem, conformal mappings, automorphisms of the complex plane and of the Riemann sphere, Möbius mappings, Riemann conformal map theorem, homological version of Cauchy theorem.]

Elective course of the Bachelor curriculum in Mathematical Engineering at the University of Chile. I taught this course in 2019 and 2020 (25 students in average).

*Differential and Variational Calculus* (MA4002, **U3-M1**, 6 ECTS, Elective Module<sup>1</sup>)

[*Syllabus*: Differential calculus in infinite dimensional spaces, Manifolds and submanifolds, Calculus of Variations, Lagrangien and Hamiltonian systems, Qualitative study of dynamical systems]

Elective course of the Bachelor curriculum in Mathematical Engineering at the University of Chile. I taught this course in 2013 (20 students).

*Convex Analysis and Duality* (MA5801, **M2-D**, 6 ECTS, Elective Module<sup>1</sup>) (Taught 2 times)

[*Syllabus*: Convex functions, Fenchel duality, polar cones, subdifferential, monotone operators, cyclic monotonicity and Rockafellar theorem, Fréchet/Gâteaux differentiability, bornologies, Variational principle of Deville-Godefroy-Zizler, Asplund spaces, strongly exposed points and Radon-Nikodym property, Variationnel principle of Stegall.]

Elective course at a Master level (5th year in Mathematical Engineering). I taught this course in 2014 and 2015 (20 students in average). The course is simultaneously offered to our international Master and Doctorate program (under the code MA674).

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(*Proposed modules and specialized seminars*)

*Advanced Seminar in Mathematics I* (MA693, **M2-D**, 9 ECTS, Elective)

[*Syllabus*: Special Topics in Operations Research: SDP and Conic Programming, Copositive Matrices, Spectral functions.]

Elective course (based on oral presentations of the students) for the Master and Doctorate programme of the Department of Mathematical Engineering of the University of Chile. I coordinated this course (together with Hector Ramirez) in 2013 (2 students).

*Advances Topics in Functional and Variational Analysis* (MA6093, **M2-D**, 9 ECTS, Elective)

[*Syllabus*: Special Topics in Optimization and Variational Analysis: Kakutani Fixed point theorem, Sperner lemma, Free Metric spaces, Monge-Kantorovitz theory, Brenier–McCann theorem in optimal transport.]

Elective course (based on oral presentations of the students) for the Master and Doctorate programme

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<sup>6</sup>There are 12 elective modules and Mathematical Engineering students choose 6 out of them.

of the Department of Mathematical Engineering of the University of Chile. I coordinated this course (together with Abderrahim Hantoute) in 2016 (12 students).

*Advances Topics in Tame Variational Analysis* (MA6093, **M2-D**, 9 ECTS, Elective)

[*Syllabus*: Nonsmooth Morse-Sard theorems, Semialgebraic optimization, KL-inequality, asymptotic theory of tame subgradient systems.]

Elective course (based on oral presentations of the students) for the Master and Doctorate programme of the Department of Mathematical Engineering of the University of Chile. I coordinated this course in 2018 (6 students).

*Weak KAM theory and Hamiltonian dynamics* (MA5309, **M2-D**, 9 ECTS, Elective)

[*Syllabus*: Hamilton-Jacobi method, Tonelli Lagrangians, viscosity solutions for first-order PDE, Lax–Oleinik semigroup, weak-KAM solutions and Aubry sets, Pugh closing lemma, Mañé theorem.]

Elective course (based on oral presentations of the students) for the Master and Doctorate programme of the Department of Mathematical Engineering of the University of Chile. I coordinated this course (together with Ludovic Rifford, visiting professor) in 2016 (5 students).

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### Lecture Notes (in Spanish):

I prepared lecture notes (available at <http://www.dim.uchile.cl/~ arisd/notes.html>) for the following mandatory modules in Mathematical Engineering:

*Analysis in Several Variables*, Part 1, 60 pages (in Spanish). This corresponds to the first part of the course MA2001 (2nd year, common engineering plan, University of Chile).

*Metric spaces*, 140 pages (in Spanish). This corresponds to the first part of the course MA3801 (3rd year, Mathematical Engineering, University of Chile), as well as the Master course I delivered at IMCA (Peru). An enhanced version of these notes has eventually been published as a Lecture notes Monograph in Mathematics by EDUNI (Editions of the National Engineering University of Peru):

“Espacios Métricos” (171 p.), Monografías del IMCA, ISBN: 978-612-47971-1-8 (October 2020)

*General Topology*, 100 pages (in Spanish). This corresponds to the second part of the course MA3801 (3rd year, Mathematical Engineering, University of Chile).

*Functional Analysis*, 126 pages (in Spanish). This corresponds to the course MA4801 (4th year, Mathematical Engineering, University of Chile).

## 3 Teaching activities at the UAB (2004–2013)

*Descriptive Statistics* (**U1**, 6 ECTS, Mandatory) (4 times)

Basic course for the Bachelor Degree in Applied Statistics (35 students in average).

I had been teaching this course every year from 2010 to 2013.

*Mathematics* (**U1**, 6 ECTS, Mandatory) (4 times)

Basic course for the Bachelor Degree in Chemistry (group of 80 students in average).

I had been teaching this course every year from 2010 to 2013.

*Linear Algebra and Differential Equations* (**U1**, 6 ECTS, Mandatory) (2 times)

Basic course for the Bachelor Degree in Physics and Chemistry (group of 70 students in average).

I taught this course in 2008 and in 2009.



*MAPLE (Formal Computation)* (**U1**, 6 ECTS, Mandatory) (3 times)

Basic course for the Bachelor Degree in Technical Engineering (group of 45 students in average). I had been teaching this course (laboratory) every year from 2008 to 2010.

*Linear programming and continuous optimization* (**U2**, 6 ECTS, Mandatory) (6 times)

Fundamental course for the Bachelor Degree in Applied Statistics (35 students in average). I had been teaching this course every year from 2004 to 2009.

*Operations Research* (**U3**, 6 ECTS, Mandatory)

Fundamental course for the Bachelor Degree in Applied Statistics and elective module for the Bachelor Degree in Mathematics. I taught this course (30 students) in 2006, together with A. Alabert and P. Puig.

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*(Specialized seminars)*

*Modern Trends in Mathematics* (**M1**, 6 ECTS, Elective) (4 times)

Elective module (based on oral presentations and written essays) for advanced undergraduate students of the Department of Mathematics (15 students in average). I coordinated this course from 2010 to 2013.

## 4 Teaching activities in other countries

*Mathematics I* (**U1**, 6 ECTS, Mandatory).

Basic course for a Bachelor Degree in Technical Engineering (group of 40 students). I taught this course at the University of Grenoble (France), in 2001, as part-time lecturer (during my post-doctorate stay at INRIA Rhône-Alpes).

*Calculus of one variable* (**U1**, 6 ECTS, Mandatory) (2 times)

Basic course for a Bachelor Degree in Science or Engineering. I taught this course in Spring 2001 (40 students) at the Department of Actuarial Sciences of the University of the Aegean (Greece) as Adjunct Lecturer and in 2008 (40 students) at the Department of Physics and Mathematics at the University of Tours (France) as invited professor.

*Lineal Algebra I* (**U1**, 6 ECTS, Mandatory)

Basic course for a Bachelor Degree in Science or Engineering. I taught this course in 2000 (33 students) as fixed-term Assistant Professor (ATER) at the University of Pau (France).

*Lineal Algebra II* (**U2**, 6 ECTS, Mandatory) (2 times)

Basic course for the Bachelor Degree in Mathematics. I taught this course in 2000 (33 students) as fixed-term Assistant Professor (ATER) at the University of Pau (France) and in 2008 (group of 32 students) at the University of Tours (France) as invited professor.

*Multivariable Calculus* (**U2**, 6 ECTS, Mandatory)

Basic course for the Bachelor Degree in Mathematics. I taught this course in 2008 (group of 32 students) at the University of Tours (France) as invited professor.

*Optimization* (**M1**, 6 ECTS, Elective Module)

Elective course of the Master Degree in Applied Mathematics of the University of Pau. I taught this course in 2000 (4 students) as fixed-term Assistant Professor (ATER).

### Invited modules in graduate programs and advanced schools

I have been invited to deliver a specialized course to the Master/Doctoral programs of the following institutions.

*Variational Analysis and Structure in Descent Systems and Optimization* (21 hours)

Master AMaSciCo (Applied mathematics and scientific computing)

Faculty of Mathematics, University of Vienna (December 2017 – January 2018, 2 months)

*Variational Analysis and Structure in Descent Systems and Optimization* (21 hours)

Master COCV (Contrôle, Optimisation et Calcul des Variations), University Paris-Sorbonne

École Polytechnique, Palaiseau (September-December 2018, 4 months)

*Topics in Metric spaces* (18 hours)

Lectures at the Doctorate programme, IMCA (Institute for Mathematics and related sciences), Lima, Peru (October 2019, 3 weeks)

I also gave mini-courses in the following events:

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*Measure theory for Quantum mechanics* (6 lectures, in Greek)

(National) Summer School in Mathematical Physics, University of the Aegean, Greece (August 1995)

Lecture Notes: Elements of Vector Measure Theory (in Greek), Proceedings of the 3rd Summer School on Analysis, Algebra and Mathematical Physics, ZITI Editions (Thessaloniki), pp. 57–94 (1997).

*Gradient Dynamical Systems, Tame Optimization and Applications* (6 lectures)

(International) Spring School in Variational Analysis, Paseky Nad Jizerou, Czech Republic (April 2009)

Lecture Notes: Gradient Dynamical Systems, Tame Optimization and Applications, Paseky Nad Jizerou, Czech Republic.

*Optimization and Convex Analysis* (6 lectures, in Spanish)

(Latin American) EMALCA School, National University of San Antonio, Cusco, Peru (October 2014).

*Exploring structure in variational analysis and optimization* (3 lectures)

Lecture Series on “Variational Analysis and Numerical Methods in Nonsmooth Optimization”

Vienna Doctoral School, ESI, Boltzmann Lecture Hall, Vienna (March 2019).

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## List of publications

Details on the publications can be found at <https://www.arisdaniilidis.at>

(\*) indicates that this author was graduate student at the time of the work.

### 1 ArXiv preprints

Extending Rademacher Theorem to Set-Valued Maps (with M. Quincampoix)  
 hal-03896086 (Preprint 16p., 2022)

Descent modulus and applications (with L. Miclo and D. Salas)  
 hal-03861013; arXiv 2211.11819 (preprint 45p, 2022)

Steepest geometric descent for regularized quasiconvex functions (with D. Salas)  
 arXiv 2310.01364 (preprint 18p, 2023)

Metric compatibility and determination in complete metric spaces (with Tri Minh Le\* and D. Salas)  
 arXiv 2308.14877 (preprint 32p, 2022)

### 2 Articles in WoS journals

Extending the Choquet Theory: Trace convexity (with M. Bachir)  
*Houston Math. J.* (to appear).

Desingularization of the Sweeping Process Mapping (with S. Tapia\*)  
*Math. Oper. Res.* (in press) DOI: <https://doi.org/10.1287/moor.2021.0269>

The slope robustly determines convex functions (with D. Drusvyatskiy)  
*Proc. Amer. Math. Soc.* **151** (2023), 4751–4756.

Determination of functions by metric slopes (with D. Salas)  
*Proc. Amer. Math. Soc.* **150** (2022), 4325–4333.

A convex function satisfying the Lojasiewicz inequality but failing the gradient conjecture both at zero and infinity (with O. Ley and M. Haddou) *Bull. London Math. Soc.* **54** (2022), 590–608.

Ubiquitous algorithms in convex optimization generate self-contracted sequences,  
*J. Convex Anal.* **29** (2022) 119–128 (with A. Böhm\*)

Characterization of Filippov representable maps and Clarke subdifferentials  
*Math. Program.* **189** (2021), 99–115 (with M. Bivas and M. Quincampoix)

Asymmetric Free spaces and canonical asymmetrization )  
*Studia Mathematica* **261** (2021), 55–102 (with JM Sepulcre and F. Venegas\*)

Smooth semi-Lipschitz functions and almost isometries between Finsler manifolds,  
*J. Funct. Anal.* **279** (2020), 1–29 (with J. Jaramillo and F. Venegas\*)

Pathological Subgradient systems  
*SIAM J. Optim.* **30** (2020), 1327–1338 (with D. Drusvyatskiy)

Metric and geometric relaxations of self-contracted curves  
*J. Optim. Theory Appl.* **182** (2019), 81–109 (with R. Deville, E. Durand-Cartagena).

Linear structure of functions with maximal Clarke subdifferential

*SIAM J. Optim.* **29** (2019), 511–521 (with G. Flores\*)

Gradient flows, second order gradient systems and convexity

*SIAM J. Optim.* **28** (2018), 2049–2066 (with T. Boulmezaoud, P. Cieutat)

Explicit formulas for  $C^{1,1}$  Glaeser-Whitney extensions of 1–Taylor fields in Hilbert spaces

*Proc. Amer. Math. Soc.* **146** (2018), 4487–4495 (with O. Ley, M. Haddou, E. Le Gruyer)

Self-contracted curves in Riemannian manifolds

*J. Math. Anal. Appl.* **457** (2018), 1333–1352 (with R. Deville, E. Durand, L. Rifford)

Sweeping by a tame process

*Ann. Inst. Fourier* **67** (2017), 2211–2223 (with D. Drusvyatskiy)

A partial answer to the Demyanov-Ryabova conjecture

*Set-Valued Var. Anal.* **26** (2018), 143–157 (with C. Petitjean)

Sard theorems for Lipschitz functions and applications

*Israel J. Math.* **212** (2016), 757–790 (with L. Barbet, M. Dambrine, L. Rifford)

Spectral (Isotropic) Manifolds and Their Dimension

*J. Anal. Math.* **128** (2016), 369–397 (with J. Malick, H. Sendov)

On the structure of locally symmetric manifolds

*J. Convex Anal.* **22** (2015), 399–426 (with J. Malick, H. Sendov)

Cut-generating functions and S-free sets

*Math. Oper. Res.* **40** (2015), 276–391 (with M. Conforti, G. Cornuéjols, C. Lemaréchal, J. Malick)

Stability in linear optimization under perturbations of the left-hand side coefficients

*Set-Valued Var. Anal.* **23** (2015), 737–758 (with M.-A. Goberna, M. Lopez, R. Lucchetti)

Rectifiability of self-contracted curves in the Euclidean space and applications

*J. Geom. Anal.* **25** (2015), 1211–1239 (with G. David, E. Durand, A. Lemenant).

Orbits of geometric descent

*Canad. Math. Bull.* **58** (2015), 44–50 (with D. Drusvyatskiy, A. S. Lewis)

Orthogonal Invariance and Identifiability

*SIAM J. Matrix Anal. Appl.* **35** (2014), 580–598 (with D. Drusvyatskiy, A. S. Lewis)

Morse-Sard theorem for Clarke critical values

*Adv. Math.* **242** (2013), 217–227 (with L. Barbet, M. Dambrine).

Lower semicontinuity of the feasible set mapping of linear systems relative to their domains

*Set-Valued Var. Anal.* **21** (2013), 67–92 (with M.-A. Goberna, R. Lucchetti, M. Lopez).

Continuity and differentiability of set-valued maps revisited in the light of tame geometry

*J. London Math. Soc.* **83** (2011), 637–658 (with J. C.-H. Pang\*)

Generic identifiability and second-order sufficiency in tame convex optimization

*Math. Oper. Res.* **36** (2011), 55–70 (with J. Bolte, A. S. Lewis).

Generalized Hessians of  $C^{1,1}$ -functions and second-order viscosity subjets  
*SIAM J. Optim.* **20** (2010), 340–358 (with L. Barbet, P. Soravia)

On the asymptotic behavior of Planar Curves  
*J. Math. Pures Appl.* **94** (2010), 183–199 (with O. Ley, S. Sabourau)

Characterizations of Lojasiewicz inequalities: subgradient flows, talweg, convexity  
*Trans. Amer. Math. Soc.* **362** (2010), 3319–3363 (with J. Bolte, O. Ley, L. Mazet)

Identifying Structure of Nonsmooth Convex Function by the Bundle Techniques  
*SIAM J. Optim.* **20** (2009), 820–840 (with C. Sagastizabal, M. Solodov).

Subdifferential characterization of approximate convexity: the lower semi-continuous case  
*Math. Program.* **117** (2009), 5–19 (with F. Jules, M. Lassonde)

Tame functions are semismooth  
*Math. Program.* **116** (2009), 115–127 (with J. Bolte, A. Lewis)

On the first Integral Conjecture of René Thom  
*Bull. Sci. Math.* **132** (2008), 625–631 (with J. Cresson, M. Shiota)

Prox-regularity of spectral functions and spectral sets  
*J. Convex Anal.* **15** (2008), 547–560 (with A. Lewis, J. Malick, H. Sendov).

Clarke subgradients of stratifiable functions  
*SIAM J. Optim.* **18** (2007), 556–572 (with J. Bolte, A. Lewis, M. Shiota)

Periodic solutions obtained via the averaging method for Lipschitz systems  
*Proc. Amer. Math. Soc.* **135** (2007), 3317–3327 (with A. Buică).

Remarks on the class of (semi)strictly quasiconvex functions  
*J. Optim. Theory Appl.* **133** (2007), 37–48 (with Y. Garcia\*).

The Lojasiewicz inequality for nonsmooth subanalytic functions  
with applications to subgradient dynamical systems  
*SIAM J. Optim.* **17** (2006), 1205–1223 (with J. Bolte, A. Lewis).

On the equivalence between complementarity systems and unilateral differential inclusions  
*Systems & Control Letters* **55** (2006), 45–51 (with V. Acary, B. Brogliato, C. Lemaréchal)

The Morse-Sard theorem for nondifferentiable subanalytic functions  
*J. Math. Anal. Appl.* **321** (2006), 729–740 (with J. Bolte, A. S. Lewis)

Geometrical interpretation of the proximal-type algorithms in structured optimization problems  
*Optimization* **55** (2006), 481–503 (Special issue for D. Pallaschke) (with W. Hare, J. Malick\*)

On a primal-proximal heuristic in discrete optimization  
*Math. Program.* **104** (2005), 105–128 (with C. Lemaréchal)

Subsmooth sets: functional characterizations and related concepts  
*Trans. Amer. Math. Soc.* **357** (2005), 1275–1301 (with D. Aussel, L. Thibault)

Clarke-critical values of subanalytic Lipschitz continuous functions

*Ann. Pol. Mat.* **87** (2005), 13–25 (Memorial issue for S. Lojasiewicz) (with J. Bolte, A. Lewis, M. Shiota)

Filling the gap between lower- $C^1$  and lower- $C^2$  functions  
*J. Convex Anal.* **12** (2005), 315–329 (with J. Malick\*).

Subdifferential Representation of Convex functions: Refinements and Applications  
*J. Convex Anal.* **12** (2005) 255–265. (with J. Benoist)

Cyclic hypomonotonicity, cyclic submonotonicity and integration  
*J. Optim. Theory Appl.* **291** (2004), 292–301 (with P. Georgiev).

Approximate convexity and submonotonicity  
*J. Math. Anal. Appl.* **291** (2004), 292–301 (with P. Georgiev).

Integration of multivalued operators and cyclic submonotonicity  
*Trans. Amer. Math. Soc.* **355** (2003), 177–195 (with P. Georgiev, J.-P. Penot)

Characterizations of evenly convex sets and evenly quasi-convex functions  
*J. Math. Anal. Appl.* **273** (2002), 58–66, (with J.E. Martinez-Legaz).

Coincidence theorems for convex functions  
*J. Convex Anal.* **9** (2002), 259–268, (with J. Benoist).

Lower subdifferentiability and integration  
*Set-Valued Anal.* **10** (2002), 89–108 (with M. Bachir\*, J.-P. Penot).

Integration of Fenchel Moreau subdifferentials of epi-pointed functions  
*SIAM J. Optim.* **12** (2002), 575–582 (with J. Benoist).

Appropriate subdifferentials in quasiconvex analysis  
*SIAM J. Optim.* **12** (2001), 407–420 (with N. Hadjisavvas, J.-E. Martinez-Legaz).

Dual characterizations of relative continuity of convex functions  
*J. Austral. Math. Soc. (Series A)* **70** (2001), 211–223 (with J. Benoist).

A dual characterization of the Radon-Nikodym property  
*Bull. Austral. Math. Soc.* **62** (2000) 379–387 (with M. Bachir\*).

On generalized cyclically monotone operators and proper quasimonotonicity  
*Optimization* **47** (2000), 123–135 (with N. Hadjisavvas).

Normal characterization of the main classes of quasiconvex functions  
*Set-Valued Anal.* **8** (2000), 219–236 (with D. Aussel).

Subdifferentials of convex functions and  $\sigma$ -cyclic monotonicity  
*Bull. Austral. Math. Soc.* **61** (2000), 269–276.

Characterization of nonsmooth semistrictly quasiconvex and strictly quasiconvex functions  
*J. Optim. Theory Appl.* **102** (1999), 525–536 (with N. Hadjisavvas).

On the subdifferentials of quasiconvex and pseudoconvex functions and cyclic monotonicity  
*J. Math. Anal. Appl.* **237** (1999), 30–42 (with N. Hadjisavvas).

Coercivity Conditions and Variational Inequalities

*Math. Program.* **86** (1999), 433–438 (with N. Hadjisavvas).

Connectedness of the efficient set for three objective quasiconcave maximization problems

*J. Optim. Theory Appl.* **93** (1997), 517–524 (with N. Hadjisavvas, S.Schaible).

Existence Theorems for Vector Variational Inequalities

*Bull. Austral. Math. Soc.* **54** (1996), 473–481 (with N. Hadjisavvas).

### 3 Articles in conference proceedings

*Characterizations of Super-regularity and its Variants Splitting Algorithms*, Chapter 6 (pp. 137–152) in: Lecture Notes of the BIRS Conference “Splitting Algorithms, Modern Operator Theory and Applications” (Springer, Cham 2019). Print ISBN: 978-3-030-25938-9 (with R. Luke and M. Tam).

*Cut Generation Functions*

Integer Programming and Combinatorial Optimization (IPCO 2013), M. Goemans and J. Correa (Eds), Lecture Notes on Computer Sciences **7801**, Springer Heidelberg (2013) 123–132 (with M. Conforti, G. Cornuéjols, C. Lemaréchal, J. Malick).

*Normal cones to sublevel sets: an axiomatic approach*

Lecture Notes in Econom. and Math. Systems **502** (2001), 88–101 (Springer, Berlin) (with D. Aussel).

Arrow-Barankin-Blackwell theorems and related results in cone duality: a survey

Lecture Notes in Econom. and Math. Systems **481** (2000), 119–131 (Springer, Berlin).

### 4 Edition of Books, Monographs

I authored the following Monograph in Mathematics (undergraduate level):

*Metric Spaces* (in Spanish), IMCA Monographs, EDUNI, 171 p., ISBN: 978-612-47971-1-8 (Oct. 2020)

I edited (together with J.-E. Martinez-Legaz) the following book:

*Modern Optimization Modelling Techniques* (authors: J.-B. Lasserre, F. Facchinei, R. Cominetti) Advanced Courses in Mathematics (CRM Barcelona), Birkhäuser Verlag, Basel, 2011 ISBN 978-3034802901

### 5 Dissertations, theses

Habilitation Thesis (March 2002)

*Convex and Quasi-convex Analysis: Applications in Optimization* (301 p., in French) University of Pau, Bordeaux Academy., France

PhD Thesis (December 1997)

*Applications of Generalized Convexity and Generalized Monotonicity to Variational Inequalities and Vector Optimization* (85 p. in Greek), University of the Aegean, Greece.

Bachelor Thesis (June 1992)

*Determination and Extension of Measures* (40 p. in Greek), University of Athens, Greece.

