Curriculum Vitae

José Antonio Agapito Ruiz

Names in publications:	José Agapito, José Agapito Ruiz
MR Author ID	758793
Mailing Address:	Department of Mathematics
	Faculty of Sciences
	University of Lisbon
	Campo Grande, 1749-016 Lisbon
	PORTUGAL

✉ jagruiz@cii.fc.ul.pt , jose.agapito@gmail.com

☎ +35 (1) 21-750-0324

🌐 http://www.ciul.ul.pt/∼jagruiz

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1. Research areas

Algebraic, Analytical, Enumerative and Geometric Combinatorics; Symplectic Geometry.

2. Education

Sept. 1999 – Dec. 2004	**Ph.D. in Mathematics**, 9 December 2004. The University of California at Santa Cruz (UCSC). Santa Cruz, **USA**. Supervisor: Jonathan Weitsman.
Oct 1997 – Sept. 1998	**Diploma in Mathematics**, 25 September 1998. The Abdus Salam International Center for Theoretical Physics (ICTP). Trieste, **ITALY**. Supervisor: Giovanni Vidossich.
Aug. 1995 – Jun. 1997	**M.Sc. in Mathematics**, 26 June 1997. Pontificia Universidad Católica del Perú (PUCP). Lima, **PERU**. Supervisor: Alfredo Poirier.

3. Academic and research appointments

Jul. 2009 – present	**Research Assistant**. Centro de Estruturas Lineares e Combinatórias (CELC). Universidade de Lisboa, PORTUGAL.
Sept. 2008 – Jun. 2009	**Invited Auxiliar Professor**. Universidade Lusófona de Humanidades e Tecnologias, Lisboa, PORTUGAL.
Sept. 2007 – Jun. 2008	**Invited Auxiliar Professor**. Universidade Nova de Lisboa, PORTUGAL.
Feb. 2005 – Jun. 2009	**Postdoctoral Research Fellow**. Instituto Superior Técnico (IST) de Lisboa, PORTUGAL.

4. Research stays

9 – 18 Jul. 2009	Department of Mathematics, University of Athens, GREECE. Host: Christos Athanasiadis.
Jun. – Aug. 2007	Departamento de Matemática, Universidad de Buenos Aires, ARGENTINA. Hosts: Alicia Dickenstein e Fernando Cukierman.
Oct. – Dec. 2006	Departamento de Matemática, Universidad de Buenos Aires, ARGENTINA. Host: Alicia Dickenstein.

12 – 14 Dec. 2005	Departamento de Matemáticas, Estadística y Computación, Universidad de Cantabria, SPAIN. Host: Francisco Santos.

5. Awards and scholarships

Feb. 2005 – Jul. 2009	FCT Postdoctoral Research Fellowship, PORTUGAL.
Sept. – Dec. 2004	UCSC Doctoral Student Sabbatical Fellowship, USA.
Mar. – Jun. 2003	University of California (UC) Regents Fellowship, USA.
Mar. – Jun. 2000	UC Regents Fellowship, USA.
Oct. 1997 – Oct. 1998	ICTP Diploma Program Fellowship, UNESCO.

6. Research contracts and participation in funded research projects

Jan. 2013 – Dec. 2014	Strategic Project LA 9–2013–2014. Ref. PEst-OE/EEI/LA0009/2013. Funded by FCT, PORTUGAL. Principal Investigator (PI): João José dos Santos Sentieiro (LARSyS).
Jan. 2011 – Dec. 2013	Strategic Project UI 1431–2011–2012. Ref. PEst-OE/MAT/UI1431/2011. Funded by FCT, PORTUGAL. PI: Carlos Alberto Martins André (CELC).
Jan. 2011 – Dec. 2012	Strategic Project LA 9 –2011–2012. Ref. PEst-OE/MAT/EEI/LA0009/2011. Funded by FCT, PORTUGAL. PI: João José dos Santos Sentieiro (LARSyS).
Feb. 2010 – Jun. 2013	Project: Algebroids, Geometry, Quantum Groups and Applications. Ref. PTDC/MAT/099880/2008. Funded by FCT, PORTUGAL. PI: Joana Nunes da Costa (CMUC).
Jul. 2009 – Jun. 2014	Contrato Programa Ciência 2008. Funded by Fundação para a Ciência e a Tecnologia (FCT), PORTUGAL.
Jul. 2007	Contrato Programa Juan de la Cierva (declined). Ref. JCI-2007-38-1096. Funded by Secretaría de Estado de Investigación, Desarrollo e Innovación, SPAIN.

7. Teaching experience

Lecturing classes (theory and practice), planning and preparing course material for students (using document markup languages, computer and web applications), elaborating and grading oral and written exams.

Universidade de Lisboa   (in Portuguese)

1st. Semester	Elements of Linear Algebra.

2012 – 2013	Computer Science students.
1st. Semester 2011 – 2012	Mathematics I (Elementary Linear Algebra). Geology students.
1st. Semester 2010 – 2011	Mathematics I (Elementary Linear Algebra). Geology students.
2nd. Semester 2009 – 2010	Mathematics II (Differential Calculus in one real variable). Geology and Applied Statistics students.
1st. Semester 2009 – 2010	Elements of Discrete Mathematics. Communication and Information Technology students.

Universidade Lusófona de Humanidades e Tecnologias   (in Portuguese)

2nd. Semester 2008 – 2009	Mathematics II (Differential and Integral Calculus). Computer Science students.
1st. Semester 2008 – 2009	Mathematics I (Precalculus and Differential Calculus in one real variable). Computer Science students.

Universidade Nova de Lisboa   (in Portuguese)

2nd. Semester 2007 – 2008	Mathematical Analysis II E (Integral Calculus in one and several variables). Engineering students.
1st. Semester 2007 – 2008	Mathematical Analysis III D (Multivariable Calculus and Complex Analysis). Engineering students.

University of California at Santa Cruz

Summer 2004	Multivariable Calculus. Science and Engineering students.
Summer 2003	Ordinary Differential Equations. Science and Engineering students.
Summer 2002	Calculus of Several Variables. Science and Engineering students.
Fall 1999 – Fall 2004	Teaching Assistant for various undergraduate math courses. Humanities, Science and Engineering students.

Pontificia Universidad Católica del Perú   (in Spanish)

Mar. – Jul. 1999	Mathematical Analysis I (Differential and Integral Calculus for functions of one real variable). Science and Engineering students.

8.   Lecture notes and other pedagogical material

Material available at my webpage.

[1] J. Agapito, *Lógica Matemática, Princípio de Indução e Somatórios* (in Portuguese).

[2] J. Agapito, *Resolução de Inequações (Método dos valores críticos)* (in Portuguese).

[3] J. Agapito, *Equações e inequações com valor absoluto* (in Portuguese).

[4] J. Agapito, *Produto Cartesiano de dois conjuntos, relações e funções* (in Portuguese).

[5] J. Agapito, *Gráficas de algumas funções* (in Portuguese).

[6] J. Agapito, *Alguns métodos de integração* (in Portuguese).

[7] J. Agapito, *Limites e Continuidade de funções $f : \mathbb{R}^2 \to \mathbb{R}$* (in Portuguese).

[8] J. Agapito, *Derivadas direccionais e vetor gradiente de funções $f : \mathbb{R}^2 \to \mathbb{R}$* (in Portuguese).

[9] J. Agapito, *Phase portrait, $\vec{x}' = A\vec{x}$, case* $\det A = 0$.

[10] J. Agapito, *Final Exam Solution*. Notebook version available here (need *Mathematica installed)*.

9.   Publications

Monographs

[1] Weighted polytope decompositions and applications. ***Ph.D. Thesis***.
UCSC, December 2004, 57 pp.

[2] The Theory of the Poincaré Index. ***Diploma Thesis***. ICTP, September 1998, 59 pp.

[3] Existence of periodic solutions of a particular hamiltonian equation (in Spanish).
M.Sc. Thesis. PUCP, June 1997, 44 pp.

Peer-reviewed papers

[1] J. Agapito, On symmetric polynomials with only real zeros and nonnegative γ-vectors, *Linear Algebra Appl.* 451 (2014), 260–289.

[2] J. Agapito, Â. Mestre, P. Petrullo and M. M. Torres, A symbolic treatment of Riordan arrays, *Linear Algebra Appl.* 439 (2013), no. 7, 1700–1715.

[3] J. Agapito Ruiz, Riordan arrays from an umbral symbolic viewpoint, *Bol. Soc. Port. Mat.* 2012, Special Issue, 5–8.

[4] J. Agapito and L. Godinho, Intersection numbers of polygon spaces, *Trans. Amer. Math. Soc.* 361 (2009), no. 9, 4969–4997.

[5] J. Agapito and L. Godinho, New polytope decompositions and Euler-Maclaurin formulas for simple integral polytopes, *Adv. Math.* 214 (2007), no. 1, 379–416.

[6] J. Agapito, Weighted Brianchon-Gram decomposition, *Canad. Math. Bull.* 49 (2006), no. 2, 161–169.

[7] J. Agapito and J. Weitsman, The Weighted Euler-Maclaurin Formula for a simple integral polytope, *Asian J. Math.* 9 (2005), no. 2, 199–211.

[8] J. Agapito, A weighted version of quantization commutes with reduction principle for a toric manifold, *Integer points in polyhedra–geometry, number theory, algebra, optimization*, 1–14, Contemp. Math., 374, *Amer. Math. Soc., Providence, RI*, 2005.

Preprints and work in progress

[1] J. Agapito and L. Godinho, *Decompositions of non-simple polytopes and Euler Maclaurin formulas.* Submitted in March 2014.

[2] J. Agapito, Â. Mestre, P. Petrullo and M. M. Torres, *Parametric Riordan Arrays.* In Preparation.

[3] J. Agapito, Â. Mestre and P. Petrullo, *Automorphisms of the Riordan group.* In Preparation.

Non-peer-reviewed papers

[1] J. Agapito, Contagem dos pontos inteiros de um polítopo (in Portuguese), Universidade Lusófona de Humanidades e Tecnologias, Lisbon (2009), 10 pp.

10. Invited talks

12 Mar. 2014	*On symmetric polynomials with only real zeros and nonnegative γ-vectors*. Algebra, Combinatorics and Number Theory Seminar. Centro de Matemática da Universidade do Porto (CMUP), PORTUGAL.
26 Nov. 2013	*On symmetric polynomials with only real zeros and nonnegative γ-vectors*. Regular Seminar. CELC, Lisbon, PORTUGAL.
24 Oct. 2012	*On a family of log concave symmetric unimodal polynomials*. Algebra and Combinatorics Seminar. Centro de Matemática da Universidade de Coimbra (CMUC), PORTUGAL.
10 Sept. 2012	*An umbral symbolic characterization of Riordan arrays*. XVIII Incontro Italiano di Combinatoria Algebrica. Sep. 10–12, 2012, Matera, ITALY.
9 Jul. 2012	*A symbolic umbral characterization of Riordan arrays*. Encontro Nacional da Sociedade Portuguesa de Matemática 2012. 9–11 Jul. 2012, Universidade de Algarve, Faro, PORTUGAL.
26 Nov. 2010	*A classical umbral view of the Riordan group and related Sheffer sequences*. Algebra and Combinatorics Seminar. CMUC, Coimbra, PORTUGAL.
19 Nov. 2010	*A classical umbral view of the Riordan group and related Sheffer sequences*. Workshop on Poisson Geometry and Quantum Groups. Department of Mathematics, University of Coimbra, PORTUGAL.
15 Oct. 2010	*A classical umbral view of the Riordan group and related Sheffer sequences*. Regular Seminar. CELC, Lisbon, PORTUGAL.
Jul. 2009	*Polytope decompositions and Euler Maclaurin formulas*.

Department of Mathematics, University of Athens, GREECE.

13 Mar. 2009	*Polytope decompositions and Euler Maclaurin formulas*. Regular Seminar. CELC, Lisbon, PORTUGAL.
14 Aug. 2007	*Fórmulas de localización y descomposición de polítopos*. Conferencia Internacional de Matemáticas PUCP. 14–17 Aug. 2007, PUCP, Lima, PERU.
Jun. 2007	*Fórmulas de localización y descomposición de polítopos*. Regular Seminar, Department of Mathematics. Universidad Nacional del Sur, Bahía Blanca, ARGENTINA.
14 Dec. 2006	*Enfoque simpléctico de las variedades tóricas*. XVI Encuentro Rioplatense de Álgebra y Geometría Algebraica. 12–15 Dec. 2006, Universidad de Buenos Aires, ARGENTINA.
Jun. 2006	*Paradan localization formula and polytope decompositions*. AMS, IMS, SIAM Joint Summer Research Conferences, Integer points in polyhedra–geometry, number theory, algebra, optimization, Utah, USA.
Dec. 2005	*Various polytope decompositions and Euler Maclaurin formulas with remainder*. Regular Seminar, Department of Mathematics, Statistics and Computer Science. Universidad de Cantabria, Santander, SPAIN.
4 Oct. 2005	*Paradan polytope decompositions and Euler Maclaurin formulas for simple integral polytopes*. Geometria em Lisboa Seminar. IST, PORTUGAL.
12 Apr. 2005	*Weighted polytope decompositions, toric varieties and Euler Maclaurin formulas*. Geometria em Lisboa Seminar. IST, PORTUGAL.
Dec. 2003	*Weighted polar decomposition of integral simple polytopes and applications*. Differential Geometry related talk. MSRI, Berkeley, USA.
16 Sept. 2003	*A weighted version of quantization commutes with reduction for a toric manifold*. Geometria em Lisboa Seminar, IST, Lisbon, PORTUGAL.
Jul. 2003	*Weighted lattice-point count for simple polytopes*. AMS, IMS, SIAM Joint Summer Research Conferences, Integer points in polyhedra–geometry, number theory, algebra, optimization, Utah, USA.

11. Poster presentations in conferences and workshops

11 Jul. 2012	*A symbolic umbral characterization of Riordan arrays*. Summer School on Algebraic and Enumerative Combinatorics. 2–13 Jul. 2012, São Miguel de Seide, Famalicão, PORTUGAL.
31 Jul. 2007	*Localization formulas and polytope decompositions*. Combinatorics Session. 26° Colóquio Brasileiro de Matemática. 29 Jul. – 3 Aug. 2007, IMPA, Rio de Janeiro, BRASIL.

12. Other selected seminars, conferences and courses attended

23 – 24 Jul. 2013	Lectures on Tensors and Hypermatrices. CELC, Lisbon, PORTUGAL.
15 – 19 Jul. 2013	Representation Theory Summer School. Calouste Gulbenkian Foundation, Lisbon, PORTUGAL.
23 – 27 Jul. 2012	Combinatorics Summer School. Calouste Gulbenkian Foundation, Lisbon, PORTUGAL.
30 May – 1 Jun. 2012	Lectures on Tropical Linear Algebra and its applications in optimization. CELC, Lisbon, PORTUGAL.
30 May – 1 Jun. 2012	Lectures on Compactification of the moduli spaces and graphs on Riemann surfaces. CELC, Lisbon, PORTUGAL.
18 May 2012	Seminar of Representation Theory and related areas: Second Workshop. Interdisciplinary Research Institute, University of Lisbon, PORTUGAL.
18 – 21 Sept. 2011	67th Séminaire Lotharingien de Combinatoire. Joint meeting with XVII Incontro Italiano di Combinatoria Algebrica, Bertinoro, ITALY.
16 – 25 May 2011	Combinatorics, letterplace superalgebras and representations of general linear Lie superalgebras. CELC, Lisbon, PORTUGAL.
8 Apr. 2011	First Combinatorics Day. Universidade do Porto, PORTUGAL.
6 Apr. 2011	Seminar of Representation Theory and related areas: First Workshop. Universidade de Coimbra, PORTUGAL.
9 – 10 Jul. 2010	8th Europt Workshop on Advances in Continuous Optimization. Universidade do Aveiro, PORTUGAL.
21 – 24 Jun. 2010	Additive Combinatorics. CELC, Lisbon, PORTUGAL.
9 – 12 Jun. 2010	GESTA 2010, Symplectic Geometry with Algebraic Techniques. IST, Lisbon, PORTUGAL.
7 – 8 May 2010	Workshop on Orthogonal Polynomials, Special Functions and Applications. Universidade de Trás-os-Montes e Alto Douro, Vila Real, PORTUGAL.
22 – 24 Mar. 2010	The eleventh and twelveth problems of Rota's Fubini Lectures: from cumulants to free probability theory. CELC, Lisbon, PORTUGAL.
13 – 17 Jul. 2009	Geometry Summer School. IST, Lisbon, PORTUGAL.
29 May – 3 Jun. 2006	International Conference on Toric Topology. Osaka, JAPAN.
20 – 26 Aug. 2005	Algebraic and Geometry Combinatorics Conference. Anogia, GREECE.
9 – 13 Aug. 2004	Moments maps and Surjectivity in Various Geometries. AIM, Palo Alto, USA.
11 – 31 Jul. 2004	Geometric Combinatorics, IAS Park City Mathematics Institute. Utah, USA.
22 – 26 Mar. 2004	Symplectic Geometry and Mathematical Physics. MSRI, Berkeley, USA.

Apr. 2002	Conference in Symplectic Geometry, MIT, Boston, USA.
Nov. 2001	Mt. Baldy Conference on Differential Geometry. HMC, Claremont, USA.
12 – 30 Apr. 1999	School on Differential Geometry. ICTP, Trieste, ITALY.
24 – 28 Jul. 1995	20° Colóquio Brasileiro de Matemática, IMPA, Rio de Janeiro, BRASIL.

13. Organisational and administrative experience

2 Mar. 2013	Co-Organiser of the Third Combinatorics Day, Lisbon 2013.
3 – 5 Sept. 2012	Co-Organiser of the Workshop on Combinatorics, Lisbon 2012.
Jul. 2011 – present	Co-Organiser of the CELC Regular Seminar, Lisbon.
Sep. 2011 – present	Webmaster of CELC.
Oct. – Mar. 2003	Organiser of the UCSC Math Graduate Colloquium, Santa Cruz, USA.

14. Academic supervision

Dec. 2012 – Aug. 2013	Mentor of Rafael Monteiro (an advanced math undergraduate student). Novos Talentos en Matemática. Program funded by the Calouste Gulbenkian Foundation.

15. Participation in scientific committees

26 Jul. 2012	Jury member for Marco António de Sousa e Silva dos Santos Mendes' doctoral seminar.

16. Languages

	speaking	reading	writing
English	fluent	fluent	fluent
Spanish	fluent	fluent	fluent
Portuguese	fluent	fluent	fluent
Italian	moderate	moderate	basic

17. Additional skills

Markup Languages	**LaTeX**, **HTML**, **CSS**.
TeX Macros	**PSTricks**.
Computer Applications	***Mathematica, Adobe Dreamweaver CS5***.

18. Referees

Carlos André Professor	CELC's Director. Departamento de Matemática, Faculdade de Ciências, Universidade de Lisboa, Portugal Email: caandre@fc.ul.pt
Leonor Godinho Professor	Post-Doc supervisor. Current IST's math undergraduate studies Director. Departamento de Matemática, Instituto Superior Técnico de Lisboa, Portugal. Email: lgodin@math.ist.utl.pt
Domenico Senato Professor	Dipartimento di Matematica e Informatica, Università della Basilicata, Potenza, Italy. Email: domenico.senato@unibas.it
Jonathan Weitsman Professor	PhD supervisor. Department of Mathematics, Northeastern University, USA. Email: j.weitsman@neu.edu