

# ACADEMIC CURRICULUM VITAE – JUAN JOSÉ RUÉ PERNA

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## PERSONAL INFORMATION

Date of birth: 26th August, 1982  
Place of birth: Lleida, Catalunya  
Gender: Male  
Citizenship: Spanish

Affiliation: Universitat Politècnica de Catalunya  
E-mail: [juan.jose.rue@upc.edu](mailto:juan.jose.rue@upc.edu)  
Webpage: <https://mat-web.upc.edu/people/juan.jose.rue/>

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## EDUCATION

09/2009      Ph.D. in Mathematics, UPC Barcelona.  
09/2012      3-year Physics degree, UNED Madrid (on-going).  
01/2007      5-year Telecommunications Engineering degree, UPC Barcelona.  
02/2005      5-year Maths degree, UPC Barcelona.

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## AFFILIATIONS

02/2016–      *Associate Professor*, UPC Barcelona, and  
                 *Faculty member*, Barcelona Graduate School of Mathematics.  
10/2013–01/2016 *Professor–W1* in Discrete Mathematics, *Freie Universität Berlin*.  
12/2013–01/2016 *Faculty member*, *Berlin Mathematical School*.  
01/2014–01/2016 *Junior Faculty member*, *DFG Graduiertenkolleg "Methods for Discrete Structures"*, Berlin.  
10/2010–09/2013 *Postdoctoral fellow*, *Instituto de Ciencias Matemáticas*, under the JAE-DOC program (with Javier Cilleruelo).  
10/2009–09/2010 *Postdoctoral fellow*, *Laboratoire d'Informatique de l'École Polytechnique*, under the ERC ExploreMaps project (with Gilles Schaeffer).  
01/2006–09/2009 *PhD student*, *Departament de Matemàtica Aplicada 2*, *Universitat Politècnica de Catalunya*.  
                 PhD advisor: Marc Noy.

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## GRANTS (AS PRINCIPAL RESEARCHER)

01/2018–12/2020 *Geometric, Algebraic and probabilistic Combinatorics*. Project from the Ministerio de Ciencia, Innovación y Universidad (Spain); reference number MTM2017-82166-P (PI joint with Oriol Serra).  
2015              Ramón y Cajal 2014 research fellow (rank 3rd, Mathematics panel). Research position declined by J.R.  
03/2014–02/2018 *Enumeration of discrete structures: algebraic, analytic, probabilistic and algorithmic methods for enriched planar graphs and planar maps*. Project from the Marie Curie Career Integration Grant (Europe); reference number 630749 CountGraph FP7-PEOPLE-2013-CIG.  
01/2015–12/2016 *Analytic, probabilistic and geometric Methods for Random Constrained graphs* (Project ID-57134837). Project from the *Deutscher Akademischer Austausch Dienst* and the *Agence française pour la promotion de l'enseignement supérieur, l'accueil et la mobilité internationale* (bilateral project between Germany and France, PI joint with Vlady Ravelomanana).

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## INVITED RESEARCH VISITS (MORE THAN 1 MONTH)

06/2018–07/2018 *Visiting Professor* at *Université Paris 7*.  
07/2013–08/2013 *Visiting researcher* at *Charles University Prague*, under the *CORES* Project.  
02/2013–03/2013 *Visiting researcher* at *École Polytechnique* under the ERC *ExploreMaps* project.

- 09/2011–12/2011 *Visiting researcher at École Polytechnique (under the ERC ExploreMaps project), and LIAFA (under the ANR MAGNUM project).*
- 09/2008–12/2008 *Visiting researcher at Simon Fraser University, Vancouver, Canada.*
- 07/2005–09/2005 *Traineeship at Instituto de Astrofísica de Canarias, La Laguna, Spain.*

## PUBLICATIONS

1. **Counting polygon dissections in the projective plane.** Marc Noy and Juanjo Rué. *Advances in Applied Mathematics*, (2008), 41 (4): 599 – 619 (20 pp.)
2. **On a question of Sárközy and Sós for Bilinear Forms.** Javier Cilleruelo and Juanjo Rué. *Bulletin of the London Mathematical Society*, (2009), 41 (2): 274 – 280 (6 pp.)
3. **Enumeration and limit laws of dissections on a cylinder.** Juanjo Rué. *Discrete Mathematics*, (2010), 310 (19): 2469 – 2570.
4. **A lower bound for the size of a Minkowski sum of dilates.** Yahya Ould Hamidoune and Juanjo Rué. *Combinatorics, Probability and Computing*, (2011), 20 (2): 249 – 256 (7 pp.)
5. **Asymptotic enumeration of subcritical graph classes.** Michael Drmota, Eric Fusy, Mihyun Kang, Veronika Kraus and Juanjo Rué. *SIAM Journal on Discrete Mathematics*, (2011), 25 (4) : 1615 – 1651 (36 pp.)
6. **Enumerating simplicial decompositions of surfaces with boundaries,** Olivier Bernardi and Juanjo Rué. *European Journal of Combinatorics*, (2012), 33 (3): 302 – 325 (23 pp.)
7. **Outerplanar obstructions for the vertex feedback set.** Juanjo Rué, Dimitrios Thilikos and Konstantinos Stavropoulos. *European Journal of Combinatorics*, (2012), 33 (5): 948 – 968 (20 pp.)
8. **On the sum of digits of some sequences of integers.** Javier Cilleruelo, Florián Luca, Juanjo Rué and Ana Zumalacárregui. *Central European Journal of Mathematics*, (2013), 11 (1): 188 – 195 (7 pp.)
9. **Asymptotic enumeration of non-crossing partitions on surfaces.** Juanjo Rué, Ignasi Sau and Dimitrios Thilikos. *Discrete Mathematics*, (2013) 313 (5): 635 – 649 (14 pp.)
10. **On the fractional parts of  $a^n/n$ .** Javier Cilleruelo, Angel Kumchev, Florián Luca, Juanjo Rué and Igor Shparlinski. *Bulletin of the London Mathematical Society*, (2013) 45 (2): 249-256 (7 pp.)
11. **Graph classes with given 3-connected components: asymptotic enumeration and random graphs.** Omer Giménez, Marc Noy and Juanjo Rué. *Random Structures & Algorithms*, (2013) 42 (4): 438-479 (41 pp.)
12. **On the error term of the logarithm of the lcm of a quadratic sequence.** Juanjo Rué, Paulius Šarka and Ana Zumalacárregui. *Journal Théorie des nombres de Bordeaux*, (2013) 25 (2): 457-470 (13 pp.)
13. **On polynomial representation functions for multilinear forms.** *European Journal of Combinatorics*, (2013), 34 (8): 1429-1435. Special Volume in Honor of Yahya Ould Hamidoune (6 pp.)
14. **Dynamic programming for graphs on surfaces.** Juanjo Rué, Ignasi Sau and Dimitrios Thilikos. *ACM Transactions of Algorithms*, (2014) 10 (2): Article 8.
15. **Analytic combinatorics of chord and hyperchord diagrams with  $k$  crossings.** Vincent Pilaud and Juanjo Rué. *Advances in Applied Mathematics*, (2014) (57): 60-100 (40 pp.)
16. **The least common multiple of random sets of positive integers.** Javier Cilleruelo, Juanjo Rué, Paulius Šarka and Ana Zumalacárregui. *Journal of Number Theory*, (2014) (144): 92-104 (12 pp.)
17. **On the probability of planarity of a random graph near the critical point.** Marc Noy, Vlado Ravelomanana and Juanjo Rué. *Proceedings of the American Mathematical Society*, (2015) 143 (3): 925-936 (11 pp.)
18. **On the limiting distribution of the metric dimension for random forests.** Dieter Mitsche and Juanjo Rué. *European Journal of Combinatorics*, (2015) (49): 68-89 (21 pp.)
  - A corrigendum to the paper: *European Journal of Combinatorics*, (2018) (67): 275-277 (2 pp.)
19. **Many 2-level polytopes from matroids.** Francesco Grande and Juanjo Rué. *Discrete & Computational Geometry*, (2015) 54 (4): 954-979 (23 pp.)
20. **Spanning trees in random series-parallel graphs.** Julia Ehrenmüller and Juanjo Rué. *Advances in Applied Mathematics*, (2016) 75: 18-55 (37 pp.)
21. **Counting configuration-free sets on groups.** Juanjo Rué, Oriol Serra and Lluís Vena. *European Journal of Combinatorics*, (2017), 66 :281-307 (26 pp.)
22. **Subgraphs statistics in subcritical graphs classes.** Joint work with Michael Drmota and Lander Ramos. *Random Structures & Algorithms*, (2017), 51 (4): 631-673 (43 pp.)
23. **Threshold functions and Poisson convergence for systems of equations on random sets.** Joint work with Ana Zumalacárregui and Christoph Spiegel. *Mathematische Zeitschrift*, (2018), 288 (1-2): 333-360 (24 pp.)
24. **Memorial to Javier Cilleruelo: A Problem List.** Collection of problems joint with Pablo Candela and Oriol Serra. *Integers*, (2018), 18, paper A28 (9 pp.)
25. **On the optimality of the random strategy.** Christopher Kusch, Juanjo Rué, Christoph Spiegel, Tibor Szabó. To appear at *Random Structures & Algorithms*.

26. **Enumeration of 4-regular planar graphs.** Joint work with Marc Noy and Clément Requilé. Submitted.
27. **Further results on random cubic planar graphs.** Joint work with Marc Noy and Clément Requilé. Submitted.
28. **On a problem of Sárközy and Sós on multivariate linear forms.** Joint work with Christoph Spiegel. Submitted.
29. **Structure and enumeration of  $K_4$ -minor-free links and link-diagrams.** Joint work with Dimitrios Thilikos and Vasiliki Velona. Submitted

#### Other publications (other research areas)

1. **Borane Polyhedra as Building Blocks for Unknown but Potentially Isolatable New Molecules – Extensions based on Computations of the Known  $B_{18}H_{22}$  isomers.** Josep M. Oliva, Drahomír Hnyk, John D. Kennedy and Vladimir R. Rosenfeld and Juanjo Rué. *Croatia Chemica Acta*, (2013) 86 (4): 485–494 (9 pp.)
2. **Pentagonal chains and annuli as models for designing nanostructures from cages.** Andrey A. Dobrynin, Josep M. Oliva, Vladimir R. Rosenfeld and Juanjo Rué. *Journal of Mathematical Chemistry*, (2016) 54 (2): 765-776 (11 pp.)

#### Book Chapters

1. **Handbook of Discrete and Combinatorial Mathematics.** New version of Chapter 3.6: Asymptotic sequences.

### DISSEMINATION

#### Books

1. **El Arte de Contar. Combinatoria y Enumeración.** Collection *El mundo es matemático*. RBA Editorial. Translated from Spanish to Portuguese, Italian, Polish, Russian, French and English.
2. **Los números trascendentes.** Collection *¿Qué sabemos de?* Ediciones de La Catarata. Joint with Javier Fresán (in Spanish).
3. **El hombre que quiso entender el infinito: Ramanujan.** Collection *Genios de las matemáticas*. RBA Editorial. Translated from Spanish to French and Italian.
4. **El impulsor de las matemáticas de la colaboración: Erdős.** Collection *Genios de las matemáticas*. RBA Editorial. Translated from Spanish to Italian.

#### Articles in general media

1. **Muere Alan Baker, el explorador de los números trascendentes.** El País (2nd March 2018, in Spanish).
2. **El matemático mejor relacionado del mundo.** El País (15th May 2017, in Spanish).
3. **The art of counting - Interview with Mireille Bousquet-Mélou.** *Newsletter of the European Mathematical Society*, december 2017.

#### Chapters in Dissemination books

1. **Los números de Catalan,** in *Matemáticas para Estimular el Talento III*. Edited by Sociedad Andaluza de educación matemática Thales. ISBN: 978-84-15641-06-03 (in Spanish).
2. **Matemáticas y Redes,** in *Unidad Didáctica Matemáticas del Planeta Tierra*. Edited by *Fundación española para la ciencia y la tecnología*. NIPO: 720-13-031-3. Joint with Ana Zumalacárregui (in Spanish).

#### Dissemination articles

1. **Del teorema de los cuatro colores a la gravedad cuántica: enumeración de mapas.** *Gaceta de la Real Sociedad Matemática Española*, (2011), 14 (3): 545 – 564. In Spanish.
2. **Mathematical essentials of quantum computing.** Juanjo Rué and Sebastià Xambó. *Butlletí de la Societat Catalana de Matemàtiques*, (2013) 28 (2): 183-231. In Catalan.
3. **Domino tilings of the Aztec Diamond,** *Snapshots of modern mathematics from Oberwolfach*, number 16/2015.

### RESEARCH PROJECTS (AS COLLABORATOR)

- 01/2006-06/2009 *Métodos algebraicos y analíticos en combinatoria y aplicaciones.* Project from the Ministerio de Educación y Ciencia (Spain); reference MTM2005-086018-C02-01. Principal researcher: Marc Noy.
- 01/2009-12/2011 *Enumeración de estructuras discretas: métodos analíticos, probabilísticos y geométricos.* Project from the Ministerio de Educación y Ciencia (Spain); reference MTM2008-03020. Principal researcher: Marc Noy.

- 01/2009-12/2013 *Grup de Recerca Consolidat en Geometria Computacional i Matemàtica Discreta.* Project from the Generalitat de Catalunya (Catalunya); reference 2009SGR 1040. Principal researcher: Ferran Hurtado.
- 01/2008-12/2013 *ExploreMaps Project.* Project from the European Research Council, ERC Grant agreement 208471. Principal researcher: Gilles Schaeffer.
- 01/2012-12/2014 *Aplicaciones del análisis armónico a la teoría de los números y la física matemática.* Project from the Ministerio de Ciencia e Innovación (Spain); reference MTM2011-22851. Principal researcher: Antonio Córdoba.
- 01/2009-12/2015 *Methods for Discrete Structures,* DFG Training Network (GRK1408, Germany).
- 01/2012-12/2015 *Programa de Excelencia Severo Ochoa.* Project from the Ministerio de Ciencia e Innovación (Spain); reference SEV-2011-0087. Principal researcher: Manuel de León.
- 09/2015-08/2018 *Estructuras discretas, geométricas y aleatorias.* Project from Ministerio de Economía y Competitividad (Spain); reference MTM2014-54745-P. Principal researchers: Marc Noy and Oriol Serra.
- 09/2015-08/2018 *Encuentros entre el análisis y la teoría de los números.* Project from Ministerio de Economía y Competitividad (España); reference MTM2014-56350-P. Principal researchers: Javier Cilleruelo and Antonio Córdoba.

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## TEACHING EXPERIENCE

Academic Year	Semester	Place	Subject	Hours
2018 – 2019	First	Bachelor Mathematics, UPC	Probability theory (Lecture)	36 hours
2018 – 2019	First	Bachelor Data Science, UPC	Discrete Mathematics (Problems)	24 hours
2018 – 2019	First	Bachelor Mathematics, UPC	Projective Geometry (Problems)	24 hours
2018 – 2019	First	Bachelor Aeronautics, UPC	Amplicació matemàtiques	60 hours
2017 – 2018	Second	Bachelor Aeronautics, UPC	Amplicació matemàtiques	60 hours
2017 – 2018	Second	Bachelor Mathematics, UPC	Complex analysis (Problems)	24 hours
2017 – 2018	First	Bachelor Mathematics, UPC	Probability theory (Lecture)	36 hours
2017 – 2018	First	Bachelor Data Science, UPC	Discrete Mathematics (Problems)	24 hours
2017 – 2018	First	Bachelor Mathematics, UPC	Projective Geometry (Problems)	24 hours
2016 – 2017	Second	Bachelor Aeronautics, UPC	Calculus	30 hours
2016 – 2017	Second	Bachelor Aeronautics, UPC	Amplicació matemàtiques	60 hours
2016 – 2017	Second	Bachelor Mathematics, UPC	Complex analysis (Problems)	24 hours
2016 – 2017	First	Bachelor Aeronautics, UPC	Calculus	60 hours
2016 – 2017	First	Bachelor Mathematics, UPC	Projective Geometry (Problems)	24 hours
2015 – 2016	Second	Bachelor Aeronautics, UPC	Ampliació matemàtiques	60 hours
2015 – 2016	Second	Bachelor Telecom. engineering, UPC	Matemàtiques telecom.	60 hours
2015 – 2016	First	Bachelor Mathematics, FU	Seminar - Diskrete Mathematik I	30 hours
2014 – 2015	Second	Bachelor Mathematics, FU	Stochastik II	60 hours
2014 – 2015	First	Bachelor Mathematics, FU	Seminar - Diskrete Mathematik I	30 hours
2014 – 2015	First	Master Mathematics, FU	Seminar - Diskrete Mathematik III	30 hours
2013 – 2014	Second	Master Mathematics, FU	Diskrete Mathematik III	56 hours
2013 – 2014	First	Master Mathematics, FU	Diskrete Mathematik II	64 hours
2012 – 2013	First	Bachelor Mathematics, UAM	Discrete Mathematics	60 hours
2011 – 2012	Second	Bachelor Informatics, UAM	Calculus 2	60 hours
2010 – 2011	Second	Bachelor Informatics, UAM	Probability and Statistics	60 hours
2008 – 2009	Second	Diploma Informatics, UPC	Calculus (instruction)	30 hours
2007 – 2008	Second	Diploma Statistics, UPC	Algebra 2	30 hours
2004 – 2005	First/Second	Diploma Mathematics, UPC	Problem's instruction	300 hours
				1436 hours

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COURSES IN EMERGENT COUNTRIES, NON-SPECIALIZED TALKS AND ADVANCED COURSES  
(♣ = EXPECTED)

Date	Place	Event
April 2017	Barcelona, Spain	BGSMath 6-hour course on Fourier analysis (3)
July 2016	Popayán, Colombia	6-hour course on combinatorial number theory (3)
November 2015	Berlin, Germany	Bundesciencia (1)
August 2015	Cusco, Perú	CIMPA-AGRA school on number theory (3)
July 2015	Barcelona, Spain	BarcelonaTech Mathematics Summer Camp (2)
July 2014	Bogotá, Colombia	4, 5-hour course on analytic combinatorics (3)
February 2014	Berlin, Germany	Café Scientifique (1)
October 2012	Madrid, Spain	Real Academia de Ciencias (2)
July 2012	Bogotá, Colombia	20-hour course on analytic combinatorics (3)
October 2010	Paris, France	Coloques du residents du College d'Espagne (1)
February 2010	Barcelona, Spain	Seminar on quantum processing (CRM-ICFO-SCM-FME) (2)
January 2010	Paris, France	Coloques du residents du College d'Espagne (1)

(1) General audience, (2) Undergraduate level, (3) Graduate level

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## MENTORING AND ADVISING

### PhD thesis

- 09/2014–11/2017 Clément Requilé, Freie Universität Berlin. Title: *Asymptotic study of regular planar graphs*.  
First job after graduation: postdoctoral researcher at JKU Linz and TU Wien.
- 06/2016– Christoph Spiegel, UPC Barcelona. On-going PhD Thesis.
- 04/2017– Vasiliki Velona, UPC Barcelona and UPF. On-going PhD Thesis coadvised with Gabor Lugosi.
- 04/2017– Maximilian Wötzel, UPC Barcelona. On-going PhD Thesis coadvised with Oriol Serra.

### Master thesis

- 01/2015 Maximilian Wötzel, Freie Universität Berlin.  
Title: *Growth in groups: arithmetic combinatorics and expansion*.
- 03/2015 Eduard Schkolnik, Freie Universität Berlin.  
Title: *Analytic techniques for the sum-free subset problem in the integers*.
- 10/2015 Gregor Lagodzinski, Freie Universität Berlin.  
Title: *Asymptotic study of series-parallel graphs with vertex degree constraints*.
- 01/2016 Julian Volland, Humboldt Universität (Diploma Thesis).  
Title: *Probability limiting distributions of arithmetic configurations in groups*.  
Coadvised with Dirk Kreimer.
- 01/2016 Joscha Karsten, Freie Universität Berlin.  
Title: *Analytic combinatorics of unlabelled discrete structures: explicit computations*.
- 06/2016 Vasiliki Velona, Kapodistrian University of Athens.  
Title: *Asymptotic analysis of outerplanar graphs with subgraph obstructions*.  
Coadvised with Dimitrios Thilikos.
- 03/2018 Julian Huth, Freie Universität Berlin.  
On-going Master Thesis. Coadvised with Tibor Szabó.

### Bachelor thesis

- 11/2014 Julian Huth, Freie Universität Berlin.  
Title: *Analytic combinatorics of words: patterns and extremal parameters*.
- 09/2015 Alberto Espuny, Universitat Politècnica de Catalunya.  
Title: *Classical and modern approaches for Plünnecke-type inequalities*. Coadvised with Oriol Serra.
- 11/2015 David Fabian, Freie Universität Berlin.  
Title: *Infinite Sidon sequences and related constructions*.
- 05/2016 Ignacio González, Universidad Autónoma de Madrid.  
Title: *Pruebas combinatorias y topológicas del teorema de Van der Waerden*.  
Coadvised with Javier Cilleruelo and Adolfo Quirós.

### PhD Comittee Member

- 01/2015 Dennis Clemens, Freie Universität Berlin.  
Doctoral Thesis: *Two-player games on graphs*.
- 01/2015 Ana Zumalacárregui, Universidad Autónoma de Madrid.  
Doctoral Thesis: *Congruence problems and questions regarding sequences of numbers*.

- 11/2015 Tuan Tran, Freie Universität Berlin.  
Doctoral Thesis: *On problems in Extremal Combinatorics*.
- 01/2016 Rafael Tesoro, Universidad Autónoma de Madrid.  
Doctoral Thesis: *Set of integers with additive restrictions*.
- 03/2017 Lander Ramos, Universitat Politècnica de Catalunya.  
Doctoral Thesis: *Graph enumeration and random graphs*.

### Comittee Member (Bachelor and Master)

- 06/2011 Jordi Tura, Universitat Politècnica de Catalunya.  
Msc. Thesis: *Mathematical and Technological Aspects of Quantum Information Processing*.
- 03/2014 Christopher Brandt, Freie Universität Berlin.  
Msc. Thesis: *The Restricted Satisfiability Problem  $(k, s)$ -SAT and Maker-Breaker games on hyper-graphs*.
- 09/2014 Jonas Groschwitz, Freie Universität Berlin.  
Msc. Thesis: *Thresholds in Half-Random Graph Games*.
- 10/2015 Teetje Stark, Freie Universität Berlin.  
Bchl. Thesis: *On ordered Ramsey numbers of Matchings and Paths*.
- 11/2015 Simon Trev, Freie Universität Berlin.  
Bchl. Thesis: *The Tightness of the Lovász Local Lemma*.
- 07/2016 Alberto Espuny, UPC Barcelona.  
Msc. Thesis: *Density and entropy tools for Plünnecke inequalities*.
- 09/2016 Ilka Spasova Shosheva, UPC Barcelona.  
Bchl. Thesis: *Simetries. Quantitats conservades i el Teorema de Noether* (In Catalan).

### Others

- 09/2012–12/2012 Glenier Lázaro. Internship in the context of the JAE-Intro Program, under the project entitled *Combinatoria Analítica: enumeración, estudio asintótico y leyes límite en grafos planos y mapas*.
- 09/2009–03/2011 Ferran Alet (Supervised jointly with Laura Morera). Supervision of his secondary school research project *Generating Functions and Searching Automatas*. This work has been awarded with the *8th Poincaré price* from the FME and the *V Premi UPF de Treball de Recerca en Enginyeria i Matemàtica Aplicada*.

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### ORGANIZATION OF SCIENTIFIC MEETINGS

- Program Committee Member of JMDA2018-Discrete Mathematics Days 2018 (Sevilla, Spain).
- Member of the Organizing Committee (joint with Antonio Córdoba, Pablo Candela, Oriol Serra, Ana Zumalacárreui and Gonzalo Fiz) of the conference 'The music of numbers' (ICMAT Madrid, September 2017).
- Chair of the Organizing Committee (joint with Josep Díaz, Gabor Lugosi and Oriol Serra) of the BGSMath Monthly program 'Random Discrete Structures and Beyond' (expected for May-June 2017).
- Chair of the Organizing Committee, *Discrete Mathematics Days*, Universitat Politècnica de Catalunya (6th-8th July 2016).
- Organizing Committee (joint with Tibor Szabó) of the *Symposium Diskrete Mathematik 2016*, Freie Universität Berlin (15th-16th July 2016).
- Member of the Scientific Committee, First 'Julio Palacios' International Symposium, A Coruña, Spain (20-22 July 2016).
- Program Committee Member of FPSAC 2015 (Daejeon, South Korea).
- Organizer (joint with Tibor Szabó) of the 20th Anniversary of the *Berlin-Poznań-Hamburg Seminar*, Freie Universität Berlin (29th-30th May 2015). Financially supported by Freie Universität Berlin and *Methods for Discrete Structures* DFG training network.
- Organizer (joint with Tibor Szabó) of the Block Course *Towards the Polynomial Freiman-Ruzsa Conjecture*, Freie Universität Berlin. (6th-23rd October 2014). Financially supported by Freie Universität Berlin and *Methods for Discrete Structures* DFG training network.
- Organizer of the Clay Summer Mathematical School 2014 *Periods and Motives: Feynman amplitudes in the 21st century*. Financially supported by Clay Foundation.
- Organizer (joint with Kurusch Ebrahimi-Fard and Vincent Pilaud) of the workshop *Recent trends in Algebraic and Geometric Combinatorics*, ICMAT, Madrid (27th-29th November 2013). Financially supported by Severo Ochoa Excellence Grant.
- Organizer of the Workshop *Exploratory Workshop New Approaches To Multiple Zeta Values*, ICMAT, Madrid (30th September- 2nd October 2013). Financially supported by ESF.

- Organizer of the course *Multiple Zeta Values, Multiple Polylogarithms, and Quantum Field Theory*, ICMAT, Madrid (7th-11th October 2013). Financially supported by Severo Ochoa Excellence Grant.
- Organizer (joint with Ana Bravo, Andrei Jaikin and Kurusch Ebrahimi-Fard) of the Algebra and Combinatorics Seminar (UAM-ICMAT). Academic year 2012 – 2013.
- Organizer of *ESF Perspectives in discrete mathematics*, CRM, Bellaterra (June 2012). Financially supported by the ESF.
- Organizer of *Jornadas sobre conjuntos de Sidon*. ICMAT, Madrid (20th March 2012). Financially supported by Universia-Banco Santander.
- Organizer of the *Young Workshop in Arithmetics and Combinatorics*. ICMAT, Madrid (20th-24th June 2011). Financially supported by I-math.

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## ADVANCED COURSES AND THEMATIC MEETINGS (AS STUDENT)

10/2009-12/2009	Thematic term <b>Statistical physics, combinatorics and probability: from discrete to continuous models</b> . Course organized at IHP, Paris, France.
01/2009-03/2009	<b>DocCourse in Combinatorics and Geometry</b> . Course organized by CRM (Centre de Recerca Matemàtica) at Bellaterra, Barcelona, Spain.
01/2008-03/2008	<b>DocCourse in Additive Combinatorics and Additive Number Theory</b> . Course organized by CRM (Centre de Recerca Matemàtica) at Bellaterra, Barcelona, Spain.
01/2007	<b>Advanced Course on Probabilistic and Analytic Methods in Combinatorics</b> . Course organized by CRM (Centre de Recerca Matemàtica) at Bellaterra, Barcelona, Spain.
06/2006	<b>Summer School and Workshop on Probabilistic Methods in Combinatorics</b> , Graz, Austria. Organized by the University of Graz.
02/2006	<b>DocCourse on Harmonic Analysis in Computer Science and Combinatorics</b> . Organized by Charles University, Prague, Czech Republic.
09/2005	<b>Advanced Course: Recent Trends on Combinatorics in the Mathematical Context</b> . Course organized by CRM (Centre de Recerca Matemàtica) at Bellaterra, Barcelona, Spain.

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## ADDITIONAL INFORMATION

### Languages

**Human:** Catalan and Spanish (native), fluent in English and French, beginner in German (A2) and Italian.

**Non-human:** Programming skills (C, Java, assembler, Fortran), mathematical software (Maple, MatLab, LaTeX), design (Labview, PSpice).

### Service: Mathematical and synergic activities

**Editor:** Responsible of the problem section of SCM–Notícies (from February 2017).

**Grant evaluator:** Evaluator for grant applications to Research Foundation – Flanders (FWO).

**Administration:** President of *Comite des Residents du College d’Espagne a Paris*. Academic year 2009–2010.

**MathSciNet:** 20 reviews done so far at MathSciNet.

**Olympiads:** Trainer of Catalan and Spanish team in the Mathematical Olympiad during several years (2000–). Judge in the Catalan Mathematical Olympiad (Barcelona 2016), Spanish Mathematical Olympiad (Torrelodones 2007, San Feliu de Guixols 2009, Pamplona 2011, Barcelona 2016), and in the International Mathematical Olympiad. (Madrid 2008, Amsterdam 2011).

**Secondary school:** ESTALMAT Madrid Project Member, Madrid (2011-2012, 2012-2013), Catalunya (2016–). Organizer of Olitele contest 2016.

**Referee:** Referee of the journals *Electronic Journal of Combinatorics*, *European Journal of Combinatorics*, *Discrete and Computational Geometry*, *Combinatorics*, *Probability and Computing*, *Journal of Combinatorial Theory. Series A*, *Journal of Combinatorial Theory. Series B*, *Graphs and Combinatorics*, *Revista Matemàtica Iberoamericana*, *Journal of Number Theory*, *International Journal of Number Theory*, *Proceedings of the London Mathematical Society*, *Discrete Mathematics*, *Electronic Journal of Combinatorics*, *SIAM Journal of Discrete Mathematics*, *Ars Combinatorica*, *Algorithmica*, *ACM Journal of Experimental Algorithmics*, *Combinatorica*, and several conferences.

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CONTRIBUTIONS IN CONFERENCES (♡ = BY INVITATION, ♣ = EXPECTED)

Date	Place	Event
May 2018	Oberwolfach, Germany	Workshop on Enumerative Combinatorics ♡
July 2017	Barcelona, Spain	FOCM ♡
March 2017	Marseille, France	Journées ALEA 2017 ♡
July 2016	Bucaramanga, Colombia	ALTENCOA7 (Plenary talk) ♡
September 2015	Marseille, France	Combinatoire additive à Marseille ♡
July 2015	Valladolid, Spain	Sextas Jornadas de Teoría de Números (Plenary talk) ♡
May 2015	Berlin, Germany	20th Anniversary of the Berlin-Poznań seminar (Plenary talk) ♡
November 2014	Barcelona, Spain	Barcelona Mathematical Days ♡
September 2014	Bristol, England	Additive Combinatorics in Bristol ♡
August 2014	Oberau, Germany	Open problems in combinatorics workshop ♡
July 2014	Bogotá, Colombia	UN Encuentro de Matemáticas ♡
June 2014	Paris, France	Analysis of Algorithms 2014
May 2014	Nice, France	Random Graphs Workshop ♡
March 2014	Oberwolfach, Germany	Workshop on Enumerative Combinatorics ♡
September 2013	Sevilla, Spain	Congreso Jóvenes Investigadores RSME ♡
September 2013	Rathewalde, Germany	Open problems in combinatorics workshop ♡
July 2013	Prague, Czech Rep.	XIX Midsummer Combinatorial Workshop ♡
July 2013	Sevilla, Spain	Quintas Jornadas de Teoría de Números
June 2013	Koper, Slovenia	CSASC 2013 ♡
March 2013	Luminy, France	Journées ALEA 2013
August 2012	Sidney, Australia	COCOON'12
July 2012	Bogotá, Colombia	5 EIMUSA ♡
July 2012	Paris, France	Combinatoire Additive à Paris 2012 ♡
October 2011	Barcelona, Spain	Jornada de Joves Investigadors SCM ♡
June 2011	Madrid, Spain	Young Workshop in Arithmetics and Combinatorics ♡
February 2011	Ávila, Spain	Congreso del Centenario de la RSME ♡
July 2010	Castro Urdiales, Spain	VII Jornadas de Matemática Discreta y Algorísmica
July 2010	Bordeaux, France	ICALP'10
November 2009	Paris, France	Embedded random graphs workshop at IHP ♡
September 2009	Bordeaux, France	European Congress on Combinatorics EuroComb
July 2009	Salamanca, Spain	Terceras Jornadas de Teoría de Números
November 2008	Yokohama, Japan	Workshop on Topological Graph Theory
October 2008	Vancouver, Canada	AMS Fall Western Section Meeting 1041 ♡
July 2008	Lleida, Spain	VI Jornadas de Matemática Discreta y Algorísmica
September 2007	Sevilla, Spain	European Congress on Combinatorics EuroComb
September 2006	Barcelona, Spain	II Congrès Txec-Català ♡
September 2006	Dijon, France	GasCom'06
August 2006	Madrid, Spain	International Congress of Mathematics
June 2006	Soria, Spain	V Jornadas de Matemática Discreta y Algorísmica

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## SEMINARS (♠ = EXPECTED TALK)

Date	Place	Event
June 2018	Paris, France	Combinatoire énumérative et analytique – IRIF
October 2017	Barcelona, Spain	Reading group on combinatorics
March 2017	Barcelona, Spain	Reading group on combinatorics
November 2016	Barcelona, Spain	Reading group on combinatorics (2 sessions)
October 2016	Barcelona, Spain	Reading group on combinatorics
May 2016	Barcelona, Spain	Reading group on combinatorics (2 sessions)
March 2016	Barcelona, Spain	Reading group on combinatorics (3 sessions)
August 2015	Lima, Peru	IMCA Seminar
May 2015	Poznań, Poland	Seminarum Discrete Mathematics UAM
May 2015	Paris, France	Séminaire <i>Combinatoire énumérative et analytique</i> , LIAFA
May 2015	Graz, Austria	Graz Discrete Mathematics and Optimization seminar
March 2015	Wien, Austria	TU Wien Discrete Mathematics Seminar
March 2015	Barcelona, Spain	Combinatorics, Graph Theory and applications Seminar
January 2015	Berlin, Germany	Combinatorics Seminar FU Berlin
May 2014	Hamburg, Germany	Seminar Discrete Mathematics TUHH
April 2014	Berlin, Germany	Combinatorics Seminar FU Berlin
March 2014	Barcelona, Spain	Combinatorics, Graph Theory and applications Seminar
January 2014	Berlin, Germany	Combinatorics Seminar FU Berlin
January 2014	Berlin, Germany	MDS Monday Seminar
October 2013	Berlin, Germany	Combinatorics Seminar FU Berlin
March 2013	Luminy, France	Seminaire <i>Ernest</i>
March 2013	Paris, France	Journée-séminaire de combinatoire, LIPN Paris-Nord
February 2013	Paris, France	Groupe de Travail en Combinatoire Arithmétique 12/13
February 2013	Paris, France	Seminarie Estructures combinatoires, École Polytechnique
February 2013	Paris, France	Séminaire <i>Combinatoire énumérative et analytique</i> , LIAFA
February 2013	Barcelona, Spain	Combinatorics, Graph Theory and applications Seminar
October 2012	Paris, France	Journée-séminaire de combinatoire, LIPN Paris-Nord
October 2012	Paris, France	Seminarie Estructures combinatoires, École Polytechnique
October 2012	Madrid, Spain	Grupo de trabajo teoría aditiva/combinatoria de números
September 2012	Madrid, Spain	Algebra and Combinatorics UAM-ICMAT seminar
August 2012	Sidney, Australia	Centre for Advanced Computing Seminar-Macquaire University
March 2012	Madrid, Spain	Jornadas sobre conjuntos de Sidon
December 2011	Saint-Étienne, France	Seminaire d'Arithmétique, LAMUSE
November 2011	Paris, France	Groupe de Travail en Combinatoire Arithmétique 11/12
November 2011	Paris, France	Séminaire CAESAR de combinatoire additive
November 2011	Paris, France	Séminaire <i>Combinatoire énumérative et analytique</i> , LIAFA
March 2011	Madrid, Spain	Seminario social, ICMAT
November 2010	Athens, Greece	Analysis seminar, Kapodistrian University of Athens
October 2010	Paris, France	Séminaire <i>Combinatoire énumérative et analytique</i> , LIAFA
October 2010	Paris, France	Seminarie Estructures combinatoires École Polytechnique
June 2010	Paris, France	Seminarie Estructures combinatoires École Polytechnique
May 2010	Barcelona, Spain	Seminari Junior UPC
May 2010	Barcelona, Spain	Combinatorics, Graph Theory and applications Seminar
February 2010	Paris, France	Seminarie Estructures combinatoires École Polytechnique
March 2009	Madrid, Spain	Number Theory joint seminar UAM-ICMAT
January 2009	Barcelona, Spain	DocCourse Student Seminar
October 2008	Vancouver, Canada	Discrete Maths Seminar, British Columbia Univ.
September 2008	Vancouver, Canada	Discrete Maths Seminar, Simon Fraser Univ.
June 2008	Nice, France	Mascotte INRIA Sophia-Antipolis Seminar
March 2008	Bellaterra, Spain	DocCourse CRM in Additive Combinatorics
January 2008	Barcelona, Spain	Seminario Matemática Discreta UPC
April 2007	Vysoka Lypa, Czech Rep.	Spring School of Combinatorics 2007
April 2006	Barcelona, Spain	Combinatorics, Graph Theory and applications Seminar