

Constanza Rojas-Molina

Born on April 7th, 1983 in La Serena, Chile (Chilean citizenship).

Married to Athanasios (Thanos) Manos, no children.

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Education

- Sept **Ph.D. in Mathematics**, *Laboratoire AGM, Université de Cergy-Pontoise, France.*
2008–Aug Thesis: The mathematical study of electronic transport in random Schrödinger operators with
2012 quasicrystalline structures.
Advisor: Prof. François Germinet.
- 2007–2008 **Master in Fundamental Mathematics (Master 2 Recherche)**, *mention “très bien”,*
Université Pierre et Marie Curie-Paris 6, France.
- 2005–2007 **Studies in the M.Sc. in Mathematics Program**, *Universidad de La Serena, Chile.*
All courses approved, Master thesis incomplete due to starting Master in France.
- 2001–2005 **B. Sc. in Mathematics**, *obtained with honours, Universidad de La Serena, Chile.*

Experience

- 2019– **Enseignante-Chercheuse**, *(fixed-term lecturer, equivalent MCF), Université de Cergy-Pontoise.*
- 2018–2019 **Junior-Professor (W1)**, *(fixed-term Assistant Professor) Group of Mathematical Statistics and Probability Theory, University of Düsseldorf.*
- 2015–2018 **Postdoctoral researcher**, *Group of Probability, Mathematics Center University of Bonn,*
Supervisors: Prof. Anton Bovier and Prof. Margherita Disertori.
- 2013–2015 **Postdoctoral Researcher- Marie Curie Fellow**, *Group of Analysis, Mathematisches Institut, LMU University of Munich,* Supervisor: Prof. Peter Müller.
Project: A Mathematical Study of Electronic Transport in Aperiodic Media (ETAM)
- Jan-Sep 2013 **Visiting Researcher**, *Center for Applied Mathematics and Theoretical Physics (CAMTP),*
University of Maribor, Slovenia.
- Sep-Dec 2012 **Postdoctoral Researcher**, *Mittag-Leffler Institute, Sweden.*
- 2008–2012 **PhD Student-Teaching Assistant (Moniteur)**, *Mathematics Department-Laboratoire AGM, Université de Cergy-Pontoise, France.*

Awards and Grants

- 2019-2022 **DFG Research Grant**, Project: "Random Schrödinger Operators arising in the study of reinforced random processes", Current Manager: Prof. Margherita Disertori, Bonn.
196.000 Euros, includes one PhD student position and funding for trips
- 2016 **Romberg Grant to participate in the 4th Heidelberg Laureate Forum**, 18-23 September, Heidelberg.
- 2015 **Visiting Fellowship**, Isaac Newton Institute for Mathematical Sciences, Program Periodic and Ergodic Spectral Problems.
Housing covered by INI
- 2013-2015 **Marie Curie Intra-European Fellowship (IEF) for Career Development**, Seventh Framework Programme (FP7) of the European Commission.
168.794 Euros for postdoctoral stay at LMU Munich
- 2013 **Humboldt Research Fellowship for Postdoctoral Researchers**.
63.600 Euros in Total Netto Income for 24 months (declined in favor of Marie Curie IEF)
- 2012 **Postdoctoral grant - Mittag Leffler Institute**, Participation in the program "Hamiltonians in magnetic fields".
ca. 7197 Euros : 60.000 SEK plus housing and trips (at Sep 2012 conversion rate)
- 2011 **Erasmus mobility fellowship for PhD students**, Université de Cergy-Pontoise.
900 Euros Support
- 2011 **Oberwolfach Leibniz Graduate Student Grant**, M. F. Oberwolfach, Germany.
- 2008- 2012 **PhD Student Member of ANR BLAN 0261 (French National Research Agency)**,
Coordinators: F. Klopp and F. Germinet.
- 2008-2012 **Grant CONICYT for Doctoral Studies**, Beca de Gestion Propia para Doctorado en el Extranjero, Comisión Nacional de Investigación Científica y Tecnológica, Chile.
ca. 67.200 Euros Total Netto income for 4 years
- 2006 **Awards "Universidad de La Serena" and "Facultad de Ciencias"**, Universidad de La Serena, Chile, For graduating with honours.

Publications

- M. Gebert, C. Rojas-Molina, Lifshitz tails for the fractional Anderson model arXiv:1910.02077 (2019).
- C. Rojas-Molina, Random Schrödinger Operators on discrete structures. Collection Séminaires et Congrès SMF 32, 147-187 (2018).
- A. Klein, S. Nguyen, C. Rojas-Molina, Characterization of the Anderson metal-insulator transport transition for the two-particle Anderson model. Ann. Henri Poincaré 18, 2327-2365 (2017).
- F. Germinet, P. Müller, C. Rojas-Molina, Ergodicity and dynamical localization for Delone-Anderson operators. Reviews in Mathematical Physics 27 (9) (2015).
- C. Rojas-Molina, The Anderson model with missing sites, Operators and Matrices 8 (1) 287-299 (2014).
- C. Rojas-Molina, I. Veselić, Scale-free unique continuation estimates and applications to random Schrödinger operators, Commun. Math. Physics 320 (1) 245-274 (2013).
- C. Rojas-Molina, Characterization of the Anderson metal-insulator transport transition for non ergodic operators and application, Ann. Henri Poincaré 13 (7) 1575-1611 (2012).

- F. Germinet, C. Rojas-Molina, *Dynamical mobility edge for various random Landau Hamiltonians*, RIMS Kokyuroku Bessatsu, Proceedings of the Conference "Spectra of Random Operators and Related Topics", B27, 25-34 (2011).
- M. Corgini, C. Rojas-Molina, D.P. Sankovich, *Coexistence of Non-Conventional Condensates in Two-Level Bose Atom System*, International Journal of Modern Physics B, Vol 22, (27): 4799-4815 (2008).

In preparation/Work in progress 2019/2020

- P. Müller, C. Rojas-Molina, Topological aspects of localization for aperiodic Schrödinger operators. (*In preparation*). Expected submission in 2019
- O. Bourget, C. Rojas-Molina, Characterization of the Anderson metal-insulator transport transition for the Unitary Anderson Model. (*Work in progress*). Expected submission in 2020

Teaching 2005–

- 2019 **(WiSe19) Linear Algebra II**, *International Programme Bachelor Ygrec*, Université de Cergy-Pontoise.
- 2019 **(WiSe19) Théorie de Distributions et EDP**, *4th year Engineering Students in Mathematics and Finance*, EISTI Engineering School, Cergy..
- 2019 **(SoSe19) Stochastic Processes and Stochastic Analysis I**, *Master Programme, Mathematics Institute, University of Düsseldorf*.
- 2018/19 **(WiSe19, co-responsible) Seminar for Bachelor and Master students**, with Dr. Ercan sönmez, *Mathematics Institute, University of Düsseldorf*.
Topic: Random Graphs and Complex Networks.
- 2018/19 **(WiSe18/19) Stochastic Processes and Stochastic Analysis II**, *Master Programme, Mathematics Institute, University of Düsseldorf*.
- 2018 **(SoSe18) Stochastic Processes and Stochastic Analysis I**, *Master Programme, Mathematics Institute, University of Düsseldorf*.
- 2018 **Mini-course (5h)**, *Summer School on Operator Algebras, Spectral Theory and Applications to Topological Insulators, 17-21 September, Tbilisi, Georgia*.
Topic: Random Schrödinger Operators
- 2017 **(WiSe 2017/2018) Assistant for Master and Bachelor Seminar**, *Institute of Applied Mathematics, University of Bonn*.
Assistant to Prof. Anton Bovier, Topic: Extreme Value Theory
- 2017 **(WiSe 2017/18) Assistant for Master Seminar**, *Institute of Applied Mathematics, University of Bonn*.
Assistant to Prof. Patrik Ferrari, Topic: Random Matrices
- 2018 **(WiSe 2017/18) Assistant for Master Seminar**, *Institute of Applied Mathematics, University of Bonn*.
Assistant to Prof. Margherita Disertori, Topic: Operator kernels and their applications
- 2017 **(SoSe 2017) Assistant for Master Seminar**, *Institute of Applied Mathematics, University of Bonn*.
Assistant to Prof. Margherita Disertori, Topic: The ubiquity of Gaussian measure
- 2016 **(WiSe 2016/17) Assistant for Master Seminar**, *Institute of Applied Mathematics, University of Bonn*.
Assistant to Prof. Margherita Disertori, Topic: Random Schrödinger Operators and localization

- 2016 **Mini-course (7.5h)**, *CIMPA School 'Spectral Theory on Graphs and Manifolds'*, 7-19 November, Kairouan, Tunisia.
- 2008–2011 **Teaching Assistant for undergraduates (Monitrice)**, *Mathematics Department, Université de Cergy-Pontoise (Calculus, Variational Methods, C2I (Certification Informatique et Internet))*.
- 2005–2007 **Lecturer for undergraduates**, *Mathematics Department, Universidad de La Serena*.
Courses: Calculus, Algebra, Functional Analysis, Analysis of Complex Variable

Supervision of Theses

- April 2019– **co-direction PhD Thesis**, *Mr. Roberto Maturana*, funded by DFG Research Grant.
Topic: Study of Random Schrödinger operators in connection with reinforced random processes.
Co-mentor: Prof. Margherita Disertori (Bonn)
 - March 2019 **Bachelor Thesis at University of Düsseldorf**, *Mr. Lennart Sperling*.
Topic: Scale-free percolation. Co-mentor: Prof. P. Kern (Düsseldorf) and Dr. Ercan Snönmez
 - Oct 2018-August 2019 **PhD Thesis at University of Düsseldorf**, *Mr. Leonard Pleschberger*, funded by the Mathematics Institute of the University of Düsseldorf.
Topic: The Integrated Density of States of the fractional Anderson Model.
Co-mentor: Prof. P. Kern (Düsseldorf)
- Currently, Mr Pleschberger is continuing his PhD with Prof. Kern at the University of Düsseldorf.

Visits

- Dec 2019 **to come) Research visit**, *Mathematics Faculty, University of Warsaw (Prof. K. Pietruska-Paluba)*.
- Dec 2018 **Research visit**, *Mathematics Faculty, P. Universidad Católica de Chile (Prof. O. Bourget)*.
- Feb 2016 **Research visit**, *Mathematics Faculty, P. Universidad Católica de Chile (Prof. O. Bourget)*.
- Jan-Jun 2015 **Visiting Fellowship**, *Newton Institute for Mathematical Sciences*, Program Periodic and Ergodic Spectral Problems.
- Oct 2014 **Research visit**, *Physics Faculty, P. Universidad Católica de Chile (Prof. E. Stockmeyer)*.
- Apr/Jun 2013 **Research visit**, *Institut Henri Poincaré, France*, Trimestre thématique "Variational and spectral methods in quantum mechanics".
- Sep-Dec 2012 **Research visit**, *Mittag-Leffler Institute, Sweden*.
- Jul/Nov 2011 **Research visit**, *TU Chemnitz, Germany (Prof. I. Veselić)*.
- May 2011 **Research visit**, *Friedrich-Schiller Universität Jena, Germany (Prof. D. Lenz)*.
- Apr-Jun 2011 **Erasmus Ph.D. student**, *Ludwig-Maximilians-Universität, Munich, Germany*.
Under the direction of Prof. Peter Müller.
- May/Jun 2010 **Ph.D. Student visitor**, *Centre Interfacultaire Bernoulli, EPFL-Lausanne, Switzerland*.

Talks 2012–

- August 2019 **QMath 14, Session on Random Systems**, *University of Aarhus, Denmark*.
- May 2019 **Mini-Conference Spectral Theory and Probability in Mathematical Physics**, *University of Strasbourg, France*.
- Dec 2018 **Results in Contemporary Mathematical Physics**, *P. Univ. Católica de Chile, Santiago, Chile*.

- Dec 2018 **Conference Random Physical Systems, Patagonia 2018**, *Puerto Natales, Chile.*
- Dec 2018 **Conference Spectral Theory and Mathematical Physics**, *P. Univ. Católica de Chile, Santiago, Chile.*
- Nov 2018 **Workshop Spectral Theory of Quasi-Periodic and Random Operators**, *Centre de Recherches Mathématiques, Montréal, Canada.*
- Sep 2018 **Young Women in Mathematical Physics**, *University of Bonn, Germany.*
- Jul 2018 **Seminar series Konstanz: Women in Maths**, *University of Konstanz, Germany.*
- May 2018 **Kolloquium of the Mathematics Institute**, *University of Düsseldorf, Germany.*
- Feb 2018 **Annual meeting of the DMV, Session on PDEs and Dynamical Systems**, *Paderborn, Germany.*
- Jul 2017 **Workshop "Women in Probability"**, *TU Munich, Germany.*
- Apr 2017 **Analysis Seminar**, *TU Delft, Netherlands.*
- Apr 2017 **Aachen-Augsburg Applied Analysis Workshop**, *RWTH Aachen, Germany.*
- Jan 2017 **Mathematical-Physics Seminar**, *Université de Grenoble, France.*
- Jan 2017 **Seminar Probability and Applications**, *Queen Mary University of London, UK.*
- Oct 2016 **Seminar 'Spectral Problems in Mathematical Physics'**, *Institut Henri Poincaré, France.*
- Nov 2015 **Probability Seminar**, *University of Bonn, Germany.*
- Apr 2015 **Department Seminar**, *Department of Mathematics and Statistics, Open University, Milton Keynes, UK.*
- Apr 2015 **Workshop "Almost-Periodic and Other Ergodic Problems"**, *Isaac Newton Institute for Mathematical Sciences, Cambridge, UK.*
- Dec 2014 **Lamé Conference "The Mathematics of Quantum Disordered System"**, *Euler International Mathematical Institute, St. Petersburg, Russia.*
- Sep 2014 **Spectral Analysis Seminar**, *P. Univ. Católica de Chile, Santiago, Chile.*
- Jun 2014 **London Analysis and Probability Seminar**, *King's College, London, UK.*
- Jul 2014 **Mathematical Physics Seminar**, *U. of Erlangen, Germany.*
- Dec 2013 **Analysis Seminar**, *Université de Nantes, France.*
- Nov 2013 **Analysis Seminar**, *Université de Bordeaux, France.*
- Apr 2013 **Young Researchers Seminar**, *Program VSMQM, Institut Henri Poincaré, France.*
- Jan 2013 **Thematic School GDR CHANT**, *Grenoble, France.*
- Oct 2012 **Institute Mittag-Leffler Seminar**, *Stockholm, Sweden.*
- Aug 2012 **Conference on Spectral Theory**, *TU Graz, Austria.*
- Jun 2012 **PhD Students Seminar**, *Université de Cergy-Pontoise, France.*
- Jan 2012 **Mathematical-Physics Seminar**, *University of Ljubljana, Slovenia.*
- Jan 2012 **Department Seminar**, *CAMTP and Department of Mathematics, University of Maribor, Slovenia.*
- March 2017 **Poster**, *Workshop in Mathematical Physics and Dynamical Systems 2017, TU Dortmund, Germany.*
- April 2015 **Poster**, *It All Adds Up (Women in Maths Day) organized by the London Mathematical Society, Oxford, UK.*

Other academic activities

Organization of scientific events

Co-organizer of event "Women in Maths Get-Together", May 8, 2019, *Mathematics Institute, University of Düsseldorf*, Together with Prof. Christiane Helzel (Düsseldorf) and Prof. Jennifer Ryan (East-Anglia/Düsseldorf).

Working Session on Topological Insulators, Feb 27, 2019, my guest Prof. Max Lein (Sendai, Japan) gave a mini-course and seminar talk on topological insulators addressed to Master students, as part of an on-going collaboration.

Co-organizer of event "The Mathematics of Disorder", 4 - 8 October 2016, *Mathematikzentrum, University of Bonn, Germany*, Together with M. Disertori.

Co-organizer of the meeting "Electrons in quantum disordered media", 12 March 2014, *Laboratoire AGM, Université de Cergy-Pontoise*, Together with F. Germinet and P. Müller.

Responsibilities

Co-responsible for Group Oberseminar since April 2018, *Group of Mathematical Statistics and Probability Theory, University of Düsseldorf*.

Co-responsible for Group Oberseminar Winter term 2016/2017-March 2018, *Group of Probability Theory, University of Bonn*.

Researcher in the Programme MATH.en.JEANS, *Lycée Français de Düsseldorf*.

Referee for Journals

Journal of Spectral Theory.

Journal Journal of Functional Analysis.

Annales Henri Poincaré.

Operators and Matrices.

Reviewer for Mathscinet and zbMATH.

Memberships

Member of IAMP (International Association of Mathematical Physics).

Member of the European Women in Mathematics Association.

Member of the Lise-Meitner-Gesellschaft e.V.

Languages

Spanish	Native
English	Fluent
French	Fluent
German	Intermediate (B2)
Greek	Beginner (A2)

Illustration/Outreach activities

Pseudonym **E. A. Casanova.**

Website **www.crojasmolina.com.**

Social Media **Twitter: @coni777 ; Instagram: @e.a.casanova.**

2014– **Blog**, *Author of the blog The RAGE of the Blackboard*, <http://ragebb.wordpress.com/>. Interviews with female mathematicians and other articles around academia and the scientific life. *Selected articles*: Portraits of Prof. Anna Dall'Acqua (U. of Ulm), Prof. Sylvie Paycha (U. of Potsdam). Graphic recording of a BBC radio interview of Dr. Eugenia Cheng. Interview with neuroscientist and artist Dr. Matteo Farinella (co-author of the book Neurocomic); Review of the science festival "Pint of Science" that took place in Cambridge, UK; and a graphic summary of the conference "It All Adds Up" that took place in Oxford in 2015, UK (organized by the London Mathematical Society).
Articles in preparation: Portraits of Prof. Susana Terracini (Torino), Prof. Rinat Kedem (Illinois), and Prof. María-Isabel Cortés (Santiago de Chile).

Sep 2019 **Blogger/Illustrator**, Invited to be a member of the Blog Team of the 7th Heidelberg Laureate Forum, Germany.

Apr 2019 **Participation and abstract**, *NaWik Symposium*, NaWik- Institut für Naturwissenschaftskommunikation, Karlsruhe.
Scientists who do science communication throughout Germany gathered to discuss their work

March 2019 **Interviewee**, The Newsletter of the European Women in Mathematics Association (EWM).

2019 **Social media/Illustration**, Co-host of Twitter drawing challenge #mathyear.
Weekly drawings about maths and interactions

Nov 2018 **Social media/Illustration**, Creator of the Twitter drawing challenge #Noethemember, daily drawings on the life and work of Emmy Noether, Collaboration with Blog The Aperiodical (UK). The results can be seen here: <https://aperiodical.com/2019/01/noethemember-a-retrospective/>.

Sep 2018 **Blogger/Illustrator**, Member of the Blog Team of the 6th Heidelberg Laureate Forum, Germany.

May 2018 **Twitter Rocur**, Curator for one week at the account @IamSciArt, for details see <https://iamsciart.com/past-curators/>.

Jan 2018 **Illustration**, French version of Sylvie Paycha's interview. Collaboration with Images de Mathématiques, CNRS France.

2017 **Interviewer/Illustrator**, Interviewed two female participants of the thematic trimester "Combinatorics and interaction" at the Institut Henri Poincaré (France): Marie Albenque, co-organizer (published) and Rinat Kedem (articles are work in progress).

2017 **Illustration**, An original illustration with title "Women in Science" was published in the magazine "Resist!" (USA) (<http://www.resistsubmission.com/>), Edited by Françoise Mouly (New Yorker) and Nadja Spiegelman..

Sep 2017 **Blogger/Illustrator**, Member of the Blog Team of the 5th Heidelberg Laureate Forum, Germany.

2017 **Interviewee**, Conversation with G. Thäter in the Modellansatz Podcast, Episode 121, Karlsruhe Institute of Technology (KIT) <<http://www.math.kit.edu/ianm4/page/math-blackboard/en>>.

Nov 2017 **Presentation**, *10.Forum für Wissenschaftskommunikation*, Presentation and poster on the Project the RAGE of the Blackboard.

- April 2017 **Graphic Recording**, Participation in the meeting EuViz in Brussels, gathering visual practitioners from Europe. Did a live graphic recording in collaboration with another participant.
- May 2017 **Graphic Recording**, 3h live graphic recording for Startup Bonn.
- Oct 2016 **Cover Art**, An illustration from the blog The RAGE of the Blackboard was the cover of the December issue No. 102 of the Magazine "Quadrature" (France): magazine with focus in mathematics education at high-school and university level.
- Jul 2016 **Workshop moderator**, *Imaginary Conference 2016, Berlin*, Moderator for the Workshop "Curriculum for a maths communication course", assisting the workshop leaders and keeping updated the Collaborative Hackpad.
- Jul 2016 **Exhibition**, *Imaginary Conference 2016, Berlin*, Exhibited works from the blog The RAGE of the Blackboard in Theater TAK Berlin, during the Imaginary Conference 2016, Berlin.
- 2014 **Illustration**, Poster for the theater play "Vita e sogni di Mr. Pauli", by mathematician Annalisa Panati, Italy/France.