

Personal information

Name	Cristina Ana-Maria Palmer-Anghel
Current position	Postdoctoral Research Assistant at University of Oxford
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Qualifications and employment history

- 2018–2020 University of Oxford– Post Doc supervised by Professor András Juhász,
[ERC grant OXTOP](#)
- 2015–2018 Université Paris Diderot— PhD supervised by Professor Christian Blanchet
Thesis title: *On quantum invariants: homological model for the coloured Jones polynomials and applications of quantum $sl(2|1)$*
Defended: 29th June 2018
- 2014–2015 Second year master student at Université Paris Diderot
Mention “Très bien” (grade 18/20)
- 2013-2015 Researcher in training at the Institute of Mathematics of Bucharest:
“Investigation of quantum and finite type invariants, applications in geometry and topology”, directed by Prof. Dorin Cheptea.
- 2013–2014 First year master student at Universitatea din București
Completed with average 10/10
- 2013-2014 First year of Master student at SNSB (Ecole Normale Supérieure Bucarest)
- 2010–2013 Undergraduate student at Universitatea din București
Bachelor Thesis: : *Alexander Polynomials of Three Manifolds*
directed by Prof. Daniel Matei and Prof. Victor Vuletescu
Completed Bachelor degree with average 10/10.
- 2012-2013 Preliminary Cycle at SNSB (Ecole Normale Supérieure Bucarest)

Publications and preprints

- [1] *A topological model for the coloured Alexander invariants*
<https://arxiv.org/abs/1906.04056> (43 pages) -(Submitted)
- [2] *A Homological model for the coloured Jones polynomials*
<https://arxiv.org/abs/1712.04873> (34 pages)
- [3] *A combinatorial description of the centralizer algebras connected to the Links-Gould Invariant*
<https://arxiv.org/abs/1712.04878> (27 pages) -(Submitted)
- [4] *Modified Turaev-Viro Invariants from quantum $sl(2|1)$* (with N. Geer)
<https://arxiv.org/abs/1705.03859> (37 pages)
(To appear in Journal of Knot Theory and Its Ramifications)

Awards and Honors:

- 2015–2018 [DIM RDM-IdF PhD fellowship](#)
“Réseau de Recherche Doctoral en Mathématiques de l’Ile de France”
- 2014–2015 [PGSM “Fondation Sciences Mathématiques de Paris”](#)
Fellowship for international students for Master 2 at Paris Diderot University
- 2012–2013 Research Fellowship from University of Bucharest for the project
“Alexander Polynomials and metabelian representations of knot groups”
directed by Prof. Daniel Matei and Prof. Victor Vuletescu
- 2010–2014 Merit scholarship from the University of Bucharest

Selected talks

2019- Talks in Conferences

- Coloured Jones polynomials via the topology of configuration spaces, Chekanov-Eliashberg algebra and knot invariants, 8-10 March 2019, Renyi Institute Budapest, Hungary
- (Invited) Coloured Jones and Alexander polynomials via topological intersection pairings, The Ninth Congress of Romanian Mathematicians, June 28 - July 3, 2019, Galati, Romania
- $U_q(sl(2))$ -quantum invariants as topological intersection pairings", Loops in Leeds 1-4 July 2019, School of Mathematics, University of Leeds, United Kingdom
- A topological model for the family of coloured Alexander invariants, PCMI research program, Park City, Utah, 11 July 2019.

2019- Talks in Seminars

- "Heegaard Floer Homology and Solv manifolds", ERC OXTOP Group Meeting, 5 March 2019, Oxford Mathematical Institute.
- (Invited) Topological models for $U_q(sl(2))$ -quantum invariants, Séminaires de topologie algébrique, 20 March 2019, UC Louvain, Belgium
- $U_q(sl(2))$ -quantum invariants through topological intersection pairings, Poincaré Seminar, 20 May 2019, Oxford Mathematical Institute
- Quantum invariants- the Jones polynomial as a bridge between algebra and topology, Junior Geometry and Topology Seminar, 23 May 2019, Oxford Mathematical Institute
- (Invited) Coloured Jones and Alexander polynomials through the homology of configuration spaces, Topology Seminar at the Institute of Mathematics IMAR , 31 May 2019, Bucharest
- Ribbon distance and Khovanov homology, Workgroup Oxford , 18 June 2019, University of Oxford

2018- Talks in Conferences

- A homological model for the coloured Jones polynomials, [Winter Braids VIII](#) 5-9 February 2018, CIRM - Luminy, France
- A homological model for the colored Jones polynomials, [TQFT et catégorification](#), 15-20 April 2018, Cargese, France
- A topological formula of the loop expansion of the colored Jones polynomial by using the Lawrence-Krammer-Bigelow representations and a short proof of the Melvin-Morton- Rozansky conjecture, 22-27 April 2018, [Thematic School](#), Matemale, France
- A topological model for the coloured Jones polynomials, [Workshop for Young Researchers in Mathematics](#), 17-18 May 2018, Bucharest, Romania
- A homological model for the coloured Jones polynomials, [ICM2018 Satellite Conference: Braid groups, configuration spaces and homotopy theory](#), 23-27 July 2018, Salvador - Bahia, Brazil
- Quantum invariants via topological intersection pairings, [North meets South Colloquium](#), University of Oxford, 9 November 2018
- Quantum Invariants through the Topology of Configuration Spaces, The Complexity Cluster Workshop, Keble College, University of Oxford, 21 November 2018
- Coloured Jones polynomials and topological intersection pairings, [Twisted and Quantum knot invariants](#), 13-15 December 2018, Durham, United Kingdom

2018- Talks in Seminars

- Homological and geometrical representations of the braid group, [GeMAT Seminar, IMAR](#), 4 January 2018, Bucharest, Romania
- L'homologie de Khovanov et Khovanov symplectique, Groupe de Travail "Invariants géométriques / symplectiques d'entrelacs", Paris Diderot University, 22 January 2018, France
- L'homologie de Khovanov symplectique- definition et invariance, Groupe de Travail "Invariants géométriques / symplectiques d'entrelacs", Paris Diderot University, 20 February 2018, France
- Singularités et l'invariance de l'Homologie de Khovanov symplectique par rapport aux mouvements de Markov, Groupe de Travail "Invariants géométriques / symplectiques d'entrelacs", Paris Diderot University, 6 March 2018, France
- Categorifications for link invariants coming from symplectic geometry I, [GeMAT Seminar, IMAR](#), 8 Mars 2018, Bucharest, Romania
- Categorifications for link invariants coming from symplectic geometry II, [GeMAT Seminar, IMAR](#) ,

- 9 Mars 2018, Bucharest, Romania
- Modified quantum invariants for 3-manifolds from super quantum groups, [GeMAT Seminar, IMAR](#), 6 April 2018, Bucharest, Romania
 - L'algèbre d'arcs symplectiques, Groupe de Travail "Invariants géométriques / symplectiques d'entrelacs", Paris Diderot University, 15 May 2018, France
 - Quantum invariants for 3-manifolds from $U_q(sl(2|1))$, [GeMAT Seminar, IMAR](#), 16 May 2018, Bucharest, Romania
 - Construction des champs de vecteurs non-commutatifs sur des fibres de Milnor, Groupe de Travail "Invariants géométriques / symplectiques d'entrelacs", Paris Diderot University, 22 May 2018, France
 - Pureté et formalité pour des algèbres A infini, Groupe de Travail "Invariants géométriques / symplectiques d'entrelacs", Paris Diderot University, 29 May 2018, France
 - Construction des champs de vecteurs non-commutatifs sur des fibres de Milnor II, Groupe de Travail "Invariants géométriques / symplectiques d'entrelacs", Paris Diderot University, 19 June 2018, France
 - Non-commutative vector fields and the Fukaya category of the Milnor fibers, [GeMAT Seminar, IMAR](#), 12 July 2018, Bucharest, Romania
 - A homological model for the coloured Jones polynomials, [GeMAT Seminar, IMAR](#), 23 August 2018, Bucharest, Romania
 - $U_q(sl(2))$ -Quantum invariants via topological intersection pairings, [Séminaire de Topologie et Géométrie](#), 29 November 2018, Geneva, Switzerland
- 2017: Talks in conferences/ seminars
- "Towards a homological model for the Colored Jones polynomial", Seminar at Isaac Newton Institute, 23 February 2017 in the Programme "Homology theories in low dimensional topology", Cambridge
 - "A homological description for the colored Jones polynomial", Topology Seminar at the Institute of Mathematics IMAR, 21 April 2017, Bucharest
 - "When quantum invariants meet geometry", Les Séminaires des étudiants à l'IMB, 29 May 2017 Dijon
 - "Towards a geometrical model for $U_q(sl(2))$ -quantum invariants", Les Séminaires géométrie des systèmes dynamiques à l'IMB, 1 Juin 2017, Dijon
 - "Geometric interpretations for $U_q(sl(2))$ quantum invariants and categorification", Journées des doctorants en topologie, 16-17 November 2017, Grenoble
 - "WinterSchool- Categorification, representation theory and symplectic geometry" participant at the Poster Session Hausdorff Research Institute for Mathematics (HIM) 20-24 November 2017, Bonn
 - "A homological model for the coloured Jones polynomials", Journées ANR à Nantes, 14-15 December
- 2016: Talks in conferences/ seminars
- "Pontrjagin classes, Chern numbers and Pontrjagin numbers" and
 - "Multiplicative sequences and the Signature theorem", two talks at the Thematic School "Differentiable structures on 7 dimensional spheres", 7-11 March 2016, La Lagonne, France
 - "Volume Conjecture for knots and links", Topology Seminar, 24 June, Institute of Bucharest
 - "The ADO polynomial and homological interpretations for quantum invariants", Workshop Leysin, 4-7 September 2016, Switzerland
 - "Geometric interpretations for quantum invariants" Poster-Heidelberg Laureate Forum, 18-23 September
 - "Modified 3-manifold invariants from the Lie super-algebra $sl(2|1)$ ", Groupe de travail "TQFTs Non-Semisimples", 06 December 2016, Paris Diderot University
- 2015: Talks in conferences/ seminars
- "Heegaard-Floer homology: definitions, examples, basic results" IMAR Workgroup 06 may, Bucharest
 - "Multivariable link invariants and renormalized quantum dimension" ECSTATIC, 11-12 June, London - "Renormalized quantum dimension and multivariable invariants for links" Young Topologists Meeting, 6-10 July 2015, EPFL Lausanne
 - "Renormalized quantum dimension and multivariable link invariants" Engelberg Summer School,
 - "The modified link invariants for representations of unrolled quantum $sl(2)$ ", 6 October, Groupe de travail: TQFTs Non-Semisimples, Paris Diderot University
- 2014: Talks in conferences/ seminars
- "Singular cohomology is isomorphic with Cech cohomology", IMAR Workgroup, 16 January, Bucharest
 - "The topology of a blow-up", Student seminar on complex geometry, 01 April, Bucharest

- “The Kodaira embedding theorem”, Student seminar on complex geometry, 15 April, Bucharest
- 2013: Talks in conferences/ seminars
- “The Jordan-Brouwer and the Invariance of the domain theorems with modern applications” short listed GCHQ Prize Tomorrow’s Mathematicians Today, 16 February 2013, University of Greenwich, London
 - “Topological degree and Invariance of domain theorems”, Student session, Workshop “Geometry and PDE’s”, 23-24 May, Timisoara, Romania
 - “Twisted polynomials for knots and 3-manifolds with applications to concordance, slicing and fiber- ing” Young Topologists Meeting, 8-12 July 2013, EPFL, Lausanne, Switzerland

Selected conferences attended

2019

- Categorical Symplectic Topology Conference 25-29 March 2019, Centre for Mathematical Sciences, Cambridge, United Kingdom
- Topologie de basse dimension- Colloque en l’honneur de Christian Blanchet, 11-12 June 2019, Paris Diderot University, France

2018

- Algebraic Structures in Topology and Geometry , 14-19 January 2018 , Riederalp, Switzerland
- Knotted Embeddings in Dimensions 3 and 4, 12 - 16 February 2018, CIRM - Luminy, France
- 101e rencontre entre mathématiciens et physiciens théoriciens, 7-9 Juin 2018, Strasbourg, France
- 102e rencontre entre mathématiciens et physiciens théoriciens, 13-15 September 2018, Strasbourg, France
- Manifolds Workshop, 3-7 December 2018, Isaac Newton Institute, Cambridge, United Kingdom

2017

- Winter school workshop 16-20 January 2017, Isaac Newton Institute, Cambridge
- 3-manifold workshop 30 January 2017 - 3 February 2017, Isaac Newton Institute, Cambridge
- Workshop on Quantum Topology 2017 - March 9th-10th, University of Lille
- Physics and knot homologies 10th April 2017 to 13th April 2017, Isaac Newton Institute, Cambridge
- Thematic School on Quantum Topology and Geometry 9-13 May 2017, IMT, Toulouse
- Quantum Topology and Geometry in Toulouse 15-19 May 2017, IMT, Toulouse
- Groups, Manifolds and K-Theory June 5 - June 9, 2017 , Munster University, Germany
- Quantum topology and categorified representation theory 26-30 June 2017, Isaac Newton Institute, Cambridge
- Mapping class groups and their representations 3-7 July 2017, Summer school 2017, Paris
- Workshop: Categorification, representation theory and symplectic geometry, 27-01 December, Bonn

2016

- “Third SwissMAP Geometry and Topology conference”, 25-29 January 2016, Engelberg, Switzerland
- “Winter Braids VI”, 22-25 February 2016, University of Lille I, France
- “Journées TQFT, groupes quantiques et invariants non commutatifs” 3-4 May, Université Paris Diderot
- “Workshop: Categorification” 16-20 May 2016, Mathematical Institute of the University of Bonn
- “ECSTATIC” 13-14 June 2016, Imperial College London, United Kingdom
- “Symplectic topology, sheaves and mirror symmetry”, 27 June -8 July 2016, Paris, France
- “International Conference on Knots, Low-Dimensional Topology and Applications” 17-23 July Olympic Academy, Ancient Olympia, Greece
- “Workshop on Symplectic Field Theory VIII”, 8 - 12 August 2016, Humboldt University, Berlin
- “Around 2-categories and 3-manifolds”, 8-9 September, Montpellier, France
- “Configuration Spaces and Moduli Spaces in Homotopy Theory”, 20-21 October, Bonn, Germany

2015

- “Winter school La Llagonne”, 12-16 January 2015, France
- “Winter Braids V - Pau”, 16-19 February, Université de Pau, France
- “Mapping class groups, 3- and 4- manifolds”, 27 July-1 August, Cluj, Romania

2014

- Workshop for Young Researchers in Mathematics, 22 - 23 May, 2014 Constanta, Romania
- Geometric and Quantum Topology in Dimension 3, 23-27 June, 2014 CIRM Luminy, France
- Young Topologists Meeting 2014 ,30 June-04 July, 2014 University of Copenhagen, Denmark

- Algebres et Noeuds, 14 November 2014, Universite de Versailles-St Quentin, France
- 2013
- “Topology in Low Dimensions”, 26-30 August 2013, University of Durham, UK
 - “National School on Algebra - 21st Edition” 2-6 September 2013, Institute of Mathematics, Bucharest
 - “Second Erlangen Fall School on Quantum Geometry”, 7-11 October 2013, Erlangen, Germany
- 2012
- “Scuola Matematica Interuniversitaria SMI Perugia” 29 July- 31 August 2012, Perugia, Italy
 - “National School on Algebra, Discrete Invariants in Commutative algebra and Algebraic Geometry”, 2-7 September 2012, Mangalia, Romania

Results at mathematics competitions for university students:

- 2012–2013: Third Prize at IMC “International Mathematics Competition for University Students”
- 2011–2012: Third Prize at IMC “International Mathematics Competition for University Students”
Silver medal at SEEMOUS Olympiad for University Students
Second Prize at the National Mathematical Contest “Traian Lalescu” - final round
- 2010–2011: First Prize at the National Mathematical Contest “Traian Lalescu” - local round
Third Prize at the National Mathematical Contest “Traian Lalescu” - final round

Teaching activity

- **Oxford**
- 2019-2020: College Lecturer at Keble College
- 2018–2019:
 - Trinity Term:**
Revision Classes for the course "Metric Spaces and Complex Analysis"
 - Michaelmas Term:**
Tutorials for the course "Introduction to University Mathematics"
Tutorials for the course "Introduction to Complex Numbers"
- **Paris 2015–2016:**
Tutorials for the course “Algèbre et analyse élémentaire-L1 Physique” (in French)

Organisation of scientific meetings

- I am an organiser of the North meets South Colloquium at the Oxford Mathematical Institute for the Trinity Term 2019
- I am an organiser for the Workshop for Young Researchers in Mathematics (9th edition) June 3-4 2019, Bucharest, Romania

Committees

- Early Career Researchers Committee member, Oxford University, 2018-2020

References

- Prof. Christian Blanchet- Paris Diderot University, e-mail: firstname.name@imj-prg.fr (firstname=christian, name=blanchet)
- Prof. András Juhász- Oxford University University, e-mail: Andras.Juhasz@maths.ox.ac.uk
- Prof. Jacob Rasmussen- Cambridge University, e-mail: jar60@dpmms.cam.ac.uk
- Prof. Nathan Geer- Utah State University, e-mail: nathan.geer@gmail.com

Languages

- Romanian (native)
- English
- French