

# CURRICULUM VITAE

## Cristina Palmer-Anghel

### Studies:

**2015-2018 PhD student at Paris Diderot University** directed by Professor Christian Blanchet

**2014-2015 Second year master student at University Paris Diderot**

Master thesis: “Renormalized quantum dimension and multivariable link invariants” directed by Professor Christian Blanchet

**Completed second year Master at Paris Diderot University with mention “Très bien” (grade 18/20)**

**2013-2015: Researcher in training** in the project:

[“Investigation of quantum and finite type invariants, applications in geometry and topology”](#) at the Institute of Mathematics-Bucharest, directed by Prof. Dorin Cheptea.

**2013-2014 First year master student at Bucharest University and SNSB**

**Completed first year Master at Bucharest University with average 10/10**

**2010-2013 Undergraduate student** at University of Bucharest

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: Student at Preliminary Cycle at SNSB** (Ecole Normale Supérieure Bucarest)

**2006-2010** Classes IX-XII: “Tudor Vianu” National High School of Computer Science, Bucharest

### Papers:

1) “A Homological model for the coloured Jones polynomials”

<https://arxiv.org/abs/1712.04873>

2) “A combinatorial description of centralizer algebras connected to the Links-Gould invariant”

<https://arxiv.org/abs/1712.04878>

3) “Modified Turaev-Viro Invariants from quantum  $sl(2|1)$ ” (with Nathan Geer)

<https://arxiv.org/abs/1705.03859> and submitted for publication.

### Awards and Honors:

2015-2018 [DIM RDM-IdF PhD fellowship](#)

“Réseau de Recherche Doctoral en Mathématiques de l'Île 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

## **Research Visits:**

- Participant at the semester “[Homology Theories in Low Dimensional Topology](#)” between 12 February - 28 March 2017, Isaac Newton Institute, Cambridge
- Visit at [Institut de Mathematiques de Bourgogne](#) 29 May- 2 June 2017, Dijon, France
- Visit at [Institut de Mathematiques de Bourgogne](#) 13-15 November 2017, Dijon, France

## **Summer Schools/ Conferences/ Talks:**

### **2018: Talks in conferences/ seminars**

- “A homological model for the coloured Jones polynomials”, at [Winter Braids VIII](#) 5-9 February 2018, CIRM - Luminy, France
- “A homological model for the colored Jones polynomials”, at [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
- “Homological and geometrical representations of the braid group”, [Geometric methods in algebra and topology Seminar at 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”, [Geometric methods in algebra and topology Seminar at IMAR](#) , 8 Mars 2018, Bucharest, Romania
- “Categorifications for link invariants coming from symplectic geometry II, [Geometric methods in algebra and topology Seminar at IMAR](#) , 9 Mars 2018, Bucharest, Romania
- “Modified quantum invariants for 3-manifolds from super quantum groups, [Geometric methods in algebra and topology Seminar at IMAR](#) , 6 April 2018, Bucharest, Romania
- “Quantum invariants for 3-manifolds from  $U_q(\mathfrak{sl}(2|1))$ , [Geometric methods in algebra and topology Seminar at IMAR](#) , 16 May 2018, Bucharest, Romania
- “ L’algèbre d'arcs symplectiques”, Groupe de Travail "Invariants géométriques / symplectiques d'entrelacs", Paris Diderot University, 15 May 2018, France
- “Construction des champs de vecteurs non-commutatifs sur des fibres de Milnor”, Groupe de Travail "Invariants géométriques / symplectiques d'entrelacs", Paris Diderot University, 22May 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

### **Summer Schools and Conferences**

- [Knotted Embeddings in Dimensions 3 and 4](#), 12 - 16 February 2018, CIRM - Luminy, France
- [Algebraic Structures in Topology and Geometry](#), 14-19 January 2018, Riederalp, Switzerland
- [101e rencontre entre mathématiciens et physiciens théoriciens](#), 7-9 Juin 2018, Strasbourg, France

### **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 Seminaires des étudiants a l'IMB](#), 29 May 2017 Dijon
- “Towards a geometrical model for  $U_q(\mathfrak{sl}(2))$ -quantum invariants”, [Les Seminaires geometrie des systemes dynamiques a l'IMB](#), 1 Juin 2017, Dijon
- “Geometric interpretations for  $U_q(\mathfrak{sl}(2))$  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

### **Summer Schools and Conferences**

- [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, Toulous
- [Groups, Manifolds and K-Theory](#) June 5 - June 9, 2017, Münster 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: 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 Llagonne, 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  $\mathfrak{sl}(2|1)$ ”, Groupe de travail [“TQFTs Non-Semisimples”](#), 06 December 2016, Paris Diderot University

### **Summer Schools and Conferences**

- “Third SwissMAP Geometry & 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: 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

### **Summer Schools and Conferences**

- “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: 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

### **Summer Schools and Conferences:**

- [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, Université de Versailles-St Quentin, France

### **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 fibering”  
[Young Topologists Meeting](#), 8-12 July 2013, EPFL, Lausanne, Switzerland

### **Summer Schools and Conferences:**

- “[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: Summer Schools and Conferences:**

- “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:**

2015-2016: Tutorials for the course “Algèbre et analyse élémentaire-L1 Physique” (in French)

### **References**

- Prof. Christian Blanchet from Paris Diderot University    e-mail: [firstname.name@imj-prg.fr](mailto:firstname.name@imj-prg.fr)  
where firstname=christian,name=blanchet
- Prof. Jacob Rasmussen from Cambridge University    e-mail: [jar60@dpmmms.cam.ac.uk](mailto:jar60@dpmmms.cam.ac.uk)
- Prof. Nathan Geer from Utah State University    e-mail: [nathan.geer@gmail.com](mailto:nathan.geer@gmail.com)

**Contact:** e-mail: [cristina.anghel@imj-prg.fr](mailto:cristina.anghel@imj-prg.fr)    [simple\\_words91@yahoo.com](mailto:simple_words91@yahoo.com)  
url : [www.cristinaanghel.ro](http://www.cristinaanghel.ro)