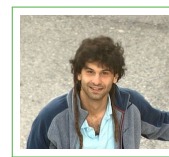


# Daniele Celoria

*Postdoctoral Research  
Assistant in mathematics*

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## University

- 2016- **Postdoctoral Research Assistant**, *University of Oxford*.  
Supervisor Prof. András Juhász.
- 2012-2016 **Dottorato in Matematica (Ph.D.)**, *University of Firenze*.  
Advisor Prof. Paolo Lisca.  
Title Grid Homology in Lens Spaces
- 2010–2012 **Laurea Magistrale (M.S.)**, *University of Pisa*, 110 *cum Laude*.  
Advisor Prof. Paolo Lisca, <http://www.dm.unipi.it/~lisca/>  
Title Relations among Topological and Contact Knot invariants
- 2005–2009 **Laurea Triennale (B.S.)**, *University of Pisa*, 100/110.  
Advisor Prof. Bruno Martelli, <http://www.dm.unipi.it/~martelli/>  
Title Pontryagin Construction and Homotopy Groups of Spheres

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## Papers and preprints

- 2014 **Cuspidal Curves and Heegaard Floer homology**, joint work with József Bodnár and Marco Golla, (Proc. London Math. Soc. (2016) 112 (3): 512-548).
- 2015 **A note on cobordisms of algebraic knots**, joint work with József Bodnár and Marco Golla, (AGT).
- 2015 **A note on Grid Homology in lens spaces:  $\mathbb{Z}$  coefficients and computations**, arXiv:1510.07141.
- 2016 **Grid homology in lens spaces**, Ph.d. thesis.
- 2016 **On concordances in 3-manifolds**, (submitted).

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## Seminars and conferences attended

- May 2011 Intensive Research Period “Knots and Applications”, De Giorgi Center, University of Pisa.
- July 2012 CAST Summer School and Conference, Alfréd Rényi Institute of Mathematics in Budapest.
- May 2013 Masterclass:“(u,v,w knots)x(topology, combinatorics, low and high algebra)”, Centre for QGM, Aarhus University.
- June 2013 “Physics and Mathematics of Link Homology”, CRM, Montreal.
- July 2014 “Young Topologist Meeting”, University of Copenhagen.
- Aug. 2014 “10-th William Rowan Hamilton Geometry and Topology Workshop”, Trinity College, Dublin.

- May 2015 "XXII Gökova geometry/topology conference", Gökova.
- June 2015 "ECSTATIC", Imperial College in London.
- Sept. 2015 "Stein Manifolds, Contact Structures and Knots", CIRM Marseille (invited speaker).
- Jan. 2016 "Workshop su varietà reali e complesse: geometria, topologia e analisi armonica", Scuola Normale Superiore, Pisa (invited speaker).
- Feb 2016 "Winterbraids", University of Lille (invited speaker).
- June 2016 "Perspectives in topology and geometry of 4-manifolds", IUC Dubrovnik.
- June 2016 "ECSTATIC 2", Imperial College in London (invited speaker).
- Oct. 2016 "4-manifolds and knot concordance", Max Plank Institute, Bonn.
- Jan. 2017 "Winter school workshop", Newton Institute, Cambridge.
- Feb. 2017 "3-manifold workshop", Newton Institute, Cambridge.
- June. 2017 "Swissknots", Bern.

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## Held and organized seminars

- Introduction to Khovanov Homology, (Pisa).
- A generalization of Roklin's Theorem on signature, (Pisa).
- Capping of Symplectic Fillings of Contact 3-Manifolds, (Pisa).
- Siteswap: music sheets for jugglers, (Pisa).
- Rational blowdown of elliptic surfaces, (Pisa).
- A concordance invariant from Dehn surgery on knots, (Pisa).
- Grid homology in lens spaces, (Pisa).
- Polynomial and homological invariants for links in lens spaces, (Bologna).
- Informal course: "Introduction to combinatorial knot Floer homology", (Pisa).
- Grid Homology in lens spaces:  $\mathbb{Z}$  coefficients and computations, (CIRM).
- Concordances in 3-manifolds, (SNS, Pisa, Lille).
- Concordances and HFK, (Pisa).
- Lecture seminars "Khovanov homology detects the unknot" 2016 (Oxford).
- Functoriality of Khovanov-Floer theories 2016 (Oxford).
- Lee's homology and the slice genus 2016 (Oxford).
- Concordance invariants from knot Floer homology 2016 (Oxford).
- Categorification of knot polynomials, North meets South Colloquium 2017 (Oxford).
- Almost-concordances in 3-manifolds 2017 (Genève).

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## Research:

I am interested in low dimensional topology and geometry, with a focus on knot theory and knot homologies; I am currently working on various aspects of Khovanov Homology and Knot Floer Homology. In particular I am interested in the interactions between knot Floer homology and 4-dimensional knot invariants.

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## Teaching

- Minicourse on Grid homology, (Pisa).
- Rings and Modules tutoring (Keble College).

- Topology tutoring (Keble College).

## Computer skills

Languages C, Python, ~~SDGE~~, L<sup>A</sup>T<sub>E</sub>X, Html.

Platforms Linux, OSX, windows.

Programs available online at <http://poisson.dm.unipi.it/~celoria/#programs>