

Alberto Canonaco's CV

January 31, 2023

Current position

Associate Professor of Algebra at the Department of Mathematics, University of Pavia (Italy) since November 2017.

Education

November 1992 – October 1996: undergraduate student in Mathematics, University of Pisa and Scuola Normale Superiore of Pisa (Italy); graduated (cum laude) on November 21, 1996.

January 1997 – October 2000: Ph.D. student in Mathematics, Scuola Normale Superiore of Pisa; thesis *The Beilinson complex and canonical rings of irregular surfaces* defended on February 15, 2002; advisor Prof. Fabrizio Catanese.

Academic Career

January – March 2001: Marie Curie studentship, Mathematics Institute, University of Warwick (UK).

April 2001 – April 2002: research contract, Department of Mathematics, University of Roma "La Sapienza" (Italy).

May 2002 – April 2004: post-doc position, Department of Mathematics, University of Roma "La Sapienza" (Italy).

May 2004 – December 2004: research assistant, Department of Mathematics, University of Pavia (Italy).

January 2005 – October 2017: assistant professor, Department of Mathematics, University of Pavia (Italy).

Research Interests

Homological algebra and algebraic geometry, in particular derived and differential graded categories of schemes and algebraic stacks.

Publications

- (1) A. Canonaco, *L_∞ -Algebras and Quasi-Isomorphisms*, in "Seminari di Geometria Algebrica 1998–1999", Scuola Normale Superiore of Pisa (1999), 67–86.
- (2) A. Canonaco, *Triangulated Categories*, in "Seminari di Geometria Algebrica 1998–1999", Scuola Normale Superiore of Pisa (1999), 251–267.
- (3) A. Canonaco, *A Beilinson-type theorem for coherent sheaves on weighted projective spaces*, *J. Algebra* **225** (2000), 28–46.
- (4) A. Canonaco, *Beilinson resolutions on weighted projective spaces*, *C. R. Acad. Sci. Paris, Ser. I* **336** (2003), 35–40.
- (5) A. Canonaco, *The Beilinson complex and canonical rings of irregular surfaces*, *Mem. Amer. Math. Soc.* **183** (2006), no. 862.

- (6) A. Canonaco, P. Stellari, *Twisted Fourier-Mukai functors*, Adv. Math. **212** (2007), 484–503.
- (7) A. Canonaco, *Exceptional sequences and derived autoequivalences*, arXiv:0801.0173.
- (8) A. Canonaco, R. L. Karp, *Derived autoequivalences and a weighted Beilinson resolution*, J. Geom. Phys. **58** (2008), 743–760.
- (9) A. Canonaco, M. Künzer, *A sufficient criterion for homotopy cartesianess*, Appl. Categ. Structures **19** (2011), 651–658.
- (10) A. Canonaco, P. Stellari, *Non-uniqueness of Fourier-Mukai kernels*, Math. Z. **272** (2012), 577–588.
- (11) A. Canonaco, P. Stellari, *Fourier-Mukai functors: a survey*, in “Derived Categories in Algebraic Geometry - Tokyo 2011”, EMS Ser. Congr. Rep., Eur. Math. Soc. (2013), 27–60.
- (12) A. Canonaco, D. Orlov, P. Stellari, *Does full imply faithful?*, J. Noncommut. Geom. **7** (2013), 357–371.
- (13) A. Canonaco, P. Stellari, *Fourier-Mukai functors in the supported case*, Compositio Math. **150** (2014), 1349–1383.
- (14) A. Canonaco, P. Stellari, *Internal Homs via extensions of dg functors*, Adv. Math. **277** (2015), 100–123.
- (15) A. Canonaco, P. Stellari, *A tour about existence and uniqueness of dg enhancements and lifts*, J. Geom. Phys. **122** (2017), 28–52.
- (16) A. Canonaco, *Lectures on algebraic stacks*, Rend. Mat. Appl. **38** (2017), 1–169.
- (17) A. Canonaco, P. Stellari, *Uniqueness of dg enhancements for the derived category of a Grothendieck category*, J. Eur. Math. Soc. **20** (2018), 2607–2641.
- (18) A. Canonaco, M. Ornaghi, P. Stellari, *Localizations of the Category of A_∞ Categories and Internal Homs*, Doc. Math. **24** (2019), 2463–2492.
- (19) A. Canonaco, A. Neeman, P. Stellari, *Uniqueness of enhancements for derived and geometric categories*, Forum Math. Sigma **10**, 1–65.

Invited conferences and talks

May 23–27, 2000: *Proiezioni canoniche pesate di superfici di tipo generale* in the conference “Giornate di Geometria Algebrica e argomenti correlati, V”, Gargnano del Garda (BS, Italy).

June 13, 2000: *Almost generic weighted canonical projections of surfaces of general type*, Department of Mathematics, University of Warwick (UK).

September 1–8, 2002: *Proiezioni canoniche pesate di superfici irregolari di tipo generale* in the conference “Proprietà geometriche delle varietà reali e complesse”, Mondello (PA, Italy).

March 25, 2004: *Categorie derivate di spazi proiettivi pesati*, Department of Mathematics, University of Roma Tre (Italy).

May 17, 2006: *Rappresentabilità di funtori tra categorie derivate di fasci twistati*, Department of Mathematics, University of Roma “La Sapienza” (Italy).

November 14, 2006: *Autoequivalenze derivate di varietà di Calabi-Yau*, Department of Mathematics, University of Milano (Italy).

April 18, 2007: *Autoequivalenze derivate di varietà di Calabi-Yau*, Department of Mathematics, University of Pisa (Italy).

September 5–9, 2011: *Non-uniqueness of Fourier-Mukai kernels* in the conference “Derived Categories in Algebraic Geometry”, Moscow (Russia).

September 12–17, 2011: *Funtori di Fourier-Mukai: non unicità* in the XIX UMI Conference, Bologna (Italy).

October 6–7, 2011: *Non-uniqueness of Fourier-Mukai kernels* in the workshop “Algebraic Surfaces and Related Topics”, Poitiers (France).

November 17–18, 2011: *Non unicità dei nuclei di Fourier-Mukai* in the “Genova-Torino-Milano Seminar: some topics in Commutative Algebra and Algebraic Geometry”, Milano (Italy).

June 24–28, 2013: *Fourier-Mukai dg functors and Morita theory for dg categories* in the workshop “Higher Categories and Topological Quantum Field Theories”, Vienna (Austria).

March 11, 2016: *Uniqueness of dg enhancements* in the workshop “Derived Categories in Algebraic Geometry”, Milano (Italy).

July 4–6, 2018: *Localization of the category of A_∞ categories and internal Homs* in the workshop “The Arithmetic of Derived Categories”, Trento (Italy).

September 20–24, 2021: mini-course *Fourier-Mukai functors and dg categories* in the “Summer School and Conference on The Six-Functor Formalism and Motivic Homotopy Theory”, Milano (Italy).

February 3, 2022: *Dg enhancements of triangulated categories and their uniqueness* in the “Longitudinal Algebra and Geometry Open ONLINE Seminar”.

Other scientific activities

Organizer with Paolo Stellari of the *Summer School on Derived Algebraic Geometry* in Pavia (Italy), September 14-18, 2015.

Referee for the following journals:

- Advances in Mathematics
- Annali di Matematica Pura ed Applicata
- European Journal of Mathematics
- International Mathematics Research Notices
- Journal für die reine und angewandte Mathematik
- Journal of Algebra, Number Theory and Applications
- Journal of Pure and Applied Algebra

- Journal of the American Mathematical Society
- Journal of the London Mathematical Society
- Mathematische Nachrichten
- Mathematische Zeitschrift

Ph.D. students:

- Riccardo Moschetti, thesis *Fourier-Mukai functors and applications to quadric fibrations* defended in December 2014 (co-advisor Paolo Stellari);
- Francesco Genovese, thesis *Quasi-functors as lifts of Fourier-Mukai functors: the uniqueness problem* defended in December 2015;
- Lorenzo Dasti, thesis *A comparison between geometric quasi-functors and Fourier-Mukai functors* defended in January 2023 (co-advisor Paolo Stellari);
- Antonio Lorenzin, thesis *Some developments on existence and uniqueness of DG-enhancements* defended in February 2023.