

# Martin Olsson

## Address:

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## Education:

- Harvard University, Mathematics, A.B., 1997.
- University of California, Berkeley, Mathematics, Ph.D., 2001 (Advisor: Arthur Ogus).

## Appointments:

- Department Chair - Mathematics, University of California, Berkeley, Fall 2016-present.
- Professor, University of California, Berkeley, Fall 2010–present.
- Associate Professor, University of California, Berkeley, Fall 2008–spring 2010.
- Assistant Professor, University of California, Berkeley, Fall 2006–2008.
- Assistant Professor, University of Texas at Austin, , Fall 2004–Spring 2006.
- Mathematical Sciences Research Institute, Research Professor, Spring 2009.
- Institute for Advanced Study, Member, Fall 2004–Spring 2005.
- Massachusetts Institute of Technology, Moore Instructor of Mathematics and NSF post–doctoral research fellow, Fall 2001–Spring 2004.
- Mathematical Sciences Research Institute postdoctoral fellow, Spring 2001.

## Short-term visists

- Institut des Hautes Études Scientifique, June–July 2015.
- Institut Mittag-Leffler, May–June 2007.
- École Polytechnique, France, June 2005.
- Université de Rennes, France, June 2003.
- Université Paris-Sud, Orsay, France, May 2002.

## Awards/Honors:

- NSF Research Training Grant 1646385, Number Theory and Arithmetic Geometry at Berkeley, PI Martin Olsson, co-PIs Sug Woo Shin and Xinyi Yuan, 2017–2022.
- NSF grant DMS-1601940, 2016–2019.
- Simons Fellow, 2015–2016.
- NSF grant DMS-1303173, 2013–2016.
- NSF CAREER grant DMS-0748718, 2008–2013.
- Alfred P. Sloan Research Fellowship, 2006–2010.
- NSF grant DMS-0714086, 2006–2010.
- National Science Foundation post-doctoral research fellowship, 2001–2004.

- Clay Mathematics Institute Liftoff Fellowship, Summer 2001.

**Selected talks:**

- *Remarks on reconstruction theorems*, The Arithmetic of Derived Categories, Trento, Italy 07/2018.
- *Hochschild and cyclic homology for log schemes*, Arithmetic and Algebraic Geometry, a conference in honor of Ofer Gabber, IHES, France 06/2018.
- *Specialization for fundamental groups of log schemes*, A tale of Algebra and Geometry, a conference to celebrate Angelo Vistoli’s 60th birthday, Pisa, Italy 06/2018.
- *Derived equivalences for K3 surfaces and motives*, Oberwolfach workshop “Arithmetic Geometry”, 08/2016.
- *A stronger derived Torelli theorem for K3 surfaces*, AGNES conference at Yale, 04/2016.
- *Moduli of spherical varieties and log geometry*, Equivariant Geometry and Algebraic stacks, Kioloa, Australia 03/2016.
- *A stronger derived Torelli theorem for K3 surfaces*, Conference “Complex Algebraic Geometry”, San Diego 01/2016.
- *Derived Torelli theorem for K3 surfaces*, Conference “Algebraic Geometry” in honor of Arthur Ogus, IHES, 09/2015.
- *The derived Torelli theorem for K3 surfaces and applications*, Simons Symposium “Geometry over nonclosed fields”, March 2015.
- *Actions of correspondences and local terms*, Texas Algebraic Geometry Symposium, April 2014.
- *Actions of correspondences and local terms*, Western Algebraic Geometry Symposium, April 2014.
- *On the calculation of local terms*, Conference on Arithmetic Algebraic Geometry, Paderborn, Germany, 10/2013.
- *Fourier-Mukai partners of K3 surfaces in positive characteristic*, Oberwolfach workshop “Moduli spaces in algebraic geometry”, 02/2013.
- *Localized chern classes and local terms*, Oberwolfach workshop “Arithmetic Geometry”, 08/2012.
- *Localized chern classes and local terms*, Pinceaux, formules, et champs, Une conférence de géométrie arithmétique en l’honneur de Laurent Moret-Bailly, Rennes, France 06/2012.
- *Localized cycle classes and local terms*, Conference on Moduli spaces and moduli stacks, Columbia, NY 05/2011.
- *Some results on independence of  $l$  for actions of correspondences*, Conference on Arithmetic geometry and moduli spaces in algebraic geometry, Hangzhou, China 08/2009.
- *Logarithmic geometry*, AIM workshop on components of Hilbert schemes, Palo Alto, CA 07/2010.
- *Main components of moduli spaces and log geometry*, Classical algebraic geometry today, MSRI, Berkeley, 01/2009.
- *Algebraic stacks and  $l$ -adic cohomology*, Aspects de la géométrie algébrique: la postérité mathématique de Grothendieck, IHES, France, 01/2009.
- *Constructing integral models for moduli spaces of  $G$ -torsors*, Western Algebraic Geometry Seminar, Salt Lake City, Utah, 11/2008.
- *Fujiwara’s theorem for equivariant correspondences*, Oberwolfach, Germany, 08/2008.
- *A higher dimensional version of generalized elliptic curves*, Conference on curves, abelian varieties and their interactions at University of Georgia, 03/2007.
- *Grothendieck’s six operations for sheaves on Artin stacks*, Conference on Hodge theory, San Servolo, Italy, 06/2006.

- *A modular compactification of  $A_g$  over the integers*, Moduli, compactifications, and related topics (in honor of Y. Namikawa’s sixtieth birthday), Nagoya, Japan, 10/2005.
- *Non-abelian  $P$ -adic Hodge theory*, AMS summer institute on algebraic geometry, Seattle, 08/2005.
- *Non-abelian  $P$ -adic Hodge theory*, Entre Bures et Orsay: une conférence de géométrie algébrique en l’honneur de Luc Illusie, Orsay, France, 07/2005.
- *Non-abelian  $p$ -adic Hodge Theory in the good reduction case*, Conference on arithmetic geometry, Gainesville, 02/2005.
- *Moduli of  $K3$  surfaces*, Compact moduli spaces and birational geometry, American Institute of Mathematics, 12/2004.
- *$F$ -isocrystals and homotopy types*, Conference on Arithmetic geometry including algebraic cycles, modular forms,  $p$ -adic cohomology, loggeometry. In Tokyo, Japan, 02/2004.
- *$F$ -isocrystals and homotopy types*, AMS annual meeting in Phoenix, AZ. Special session on arithmetical algebraic geometry, 01/2004.
- *Crystalline cohomology of schemes with tame reduction*, A Cohomological Week in Rennes in celebration of P. Berthelot’s 60–th birthday, Rennes, France 06/2003.
- *Schematic homotopy types associated to isocrystals*, Categories 2 conference, Nice, France, 05/2003.
- *Logarithmic geometry and algebraic stacks*, Workshop on Intersection theory on stacks at MSRI, Berkeley, CA, 03/2002.

#### *Seminar talks*

I have given one or more seminar talks at the following institutions: Princeton, Columbia, U. of Arizona, SUNY Stony Brook, Texas Algebraic Geometry Seminar, U. of Michigan, Brown University, University of Ohio, Notre Dame University, University of Texas at Austin, Rice University, University of Illinois at Urbana-Champaign, Indiana University, University of Utah, University of Minnesota, University of Connecticut, University of Massachusetts, Stanford University, Harvard/MIT joint algebraic geometry seminar, Harvard Number Theory Seminar, University of California at Berkeley, Columbia University, Purdue University, University of Southern California, Université Paris-Sud (France), Université Paris 13 (France), IHES (France).

#### *Lecture Series and lectures for graduate student workshops*

- *Log geometry and log Hodge structures*, Simons Center for Geometry and Physics program on Complex,  $p$ -adic, and logarithmic Hodge theory and their applications, Stony Brook, 04/2016.
- *Algebraic stacks and log geometry*, Summer School: Algebraic stacks and related topics, Mainz, Germany 09/2015.
- *Abelian varieties*, Workshop on recent topics in algebraic geometry, Hangzhou, China, 08/2009.
- *Logarithmic structures with a view towards moduli*, Workshop on Aspects of Moduli, Pisa, Italy 06/2008.
- *Tangent and obstruction spaces*, MSRI graduate student workshop on deformation theory and moduli in algebraic geometry 07-08/2007.

#### **Seminars and Conferences Organized:**

- Co-organizer of MSRI semester program ‘Birational geometry and moduli spaces’, Spring 2019.
- Co-organizer of Simons Symposium ‘ $p$ -adic Hodge theory’, May 7-13, 2017.

- Co-organizer of the 2015 AMS Algebraic Geometry Summer Research Institute, University of Utah, July 12-Aug 1, 2015.
- Co-organizer of the conference ‘Algebraic Geometry - New Connections for recent PhDs’, Seattle, Aug 3-9, 2014.
- Co-organizer of the conference ‘Representation theory, geometry, and combinatorics: Equivariant algebraic geometry and related topics.’ Berkeley, May 26-29, 2009.
- Co-organizer of the conference ‘Western Algebraic Geometry Seminar’ in Berkeley, April 25-26, 2009.
- Co-organizer of joint Berkeley-Stanford algebraic geometry colloquium, Fall 2006 –Fall 2008, Fall 2009-2010.
- Co-organizer of MSRI summer graduate workshop on Deformation Theory and Moduli in Algebraic Geometry, July 23–August 3, 2007. Also gave a series of 8 lectures at this workshop.
- Co-organizer of Texas Algebraic Geometry Seminar, Texas A&M, May 2006.

#### **Graduate Students:**

Past Ph.D. Students: Ishai Dan-Cohen (joint with Ogus, Ph.D. 2010), Matthew Satriano (Ph.D. 2010), Shenghao Sun (Ph.D. 2010), Lasse Peter Mannisto (Ph.D. 2014), Andrew Niles (Ph.D. 2014), Katrina Honigs (2015), Doosung Park (2016), Chang-Yeon Chough (2016)

Current Ph.D. Students (indicating here only students past the qualifying exam): Minseon Shin, Luhang Lai, Kat Christianson, Ravi Fernando, Anningzhe Gao.

**Postdocs:** D. Rydh (09-10), A. Chowdhury (12-15), R. Bellovin (14-15).

#### **Editorial:**

- Editor for *Algebra and Number Theory*, 10/2016 - present.
- Co-editor for conference proceedings of Algebraic Geometry: Salt Lake City 2015, Proceedings of Symposia in Pure Mathematics, American Mathematical Society (2018).
- Co-editor for conference proceedings of Simons Symposium on  $p$ -adic Hodge Theory, in preparation.

#### **Other Professional Activities:**

- Grant reviewer for NSF, NSA, and various European funding agencies.
- Referee for numerous journals including Duke Math Journal, Publ. Math. de l’IHES, Inventiones Mathematicae, Annals of Math, Journal of Algebraic Geometry, Adv. in Math., Trans. of the AMS, and Manuscripta Mathematica among others.
- Reviewer for MathSciNet.

#### **Service to University of California:**

- (1) Nominations Committee, 2016-17, 2017-18.
- (2) Newsletter and Development Committee, 2016-17, 2017-18.
- (3) Faculty Advancement Committee, 2016-17, 2017-18.
- (4) Campus Peer Review Committee, 2017-18.
- (5) Berkeley representative to Coordinating Committee on Graduate Affairs (UC systemwide), 2012-2013.
- (6) Mathematics Department Vice Chair for Graduate Affairs, 2012-2013, 2013-2014, 2014-2015.
- (7) Mathematics Department Committee Omega (Ex Officio) 2014-2015.

- (8) Mathematics Department Task Force on Graduate Student Mentoring (chair), spring 2012.
- (9) Mathematics Department Mathematics Opportunity Committee, 2011-2012, 2012-2013, 2013-2014, 2014-15.
- (10) Mathematics Department Teaching Committee (chair), 2011-2012.
- (11) Member of Graduate Council (campus wide committee), 2009-2010, 2010-2011, 2011-2012, 2012-2013, 2013-2014.
- (12) Mathematics Department Schedule Committee, 2010-2011.
- (13) Mathematics Department Alexander Prize Committee (chair), 2009-2010.
- (14) Mathematics Department Ribet/Goldberg Prize Committee, 2008-2009, 2011-12.
- (15) Mathematics Department Graduate Admissions Committee, 2008-2009, 2009-2010, 2010-2011.
- (16) Mathematics Department Graduate Program Policy Committee, 2008-2009.
- (17) Member of Scholar Mentorship Subcommittee of Committee on Undergraduate Scholarship and Honors, 2007-2008.
- (18) Mathematics Department Prelim Exam Committee, 2007-2008.
- (19) Mathematics Department Graduate Appointments Committee, 2007-2008.

## Teaching

*University of California Berkeley .*

As Faculty Member:

- (1) Undergraduate Abstract Algebra (Math 113), Fall 2014.
- (2) Graduate Algebra (Math 250B), Spring 2014.
- (3) Teaching Workshop for First-Time Graduate Student Instructors (Math 300), Fall 2011 and Fall 2012.
- (4) Homological Algebra (Math 253), Spring 2011.
- (5) Undergraduate Number Theory (Math 115), Fall 2010.
- (6) Graduate Algebra (Math 250A), Fall 2009.
- (7) Calculus (Math 1A), Fall 2008.
- (8) Graduate Algebraic Number Theory (Math 254A), Fall 2008.
- (9) Algebraic Geometry (Math 256), Fall 2007, Spring 2008, Fall 2009, Fall 2011, Spring 2012.
- (10) Topics in Algebra: Stacks (Math 274), Spring 2007.
- (11) Calculus (Math 1B), Fall 2006 and Fall 2010.
- (12) Numerous reading courses for graduate students and undergraduate students.
- (13) Weekly Ph.D. student seminar each semester.

As graduate student:

- (1) Instructor for undergraduate complex analysis (summer 2000).
- (2) Instructor for calculus course (summer 1999).
- (3) Recitation instructor for numerous calculus courses.

*University of Texas at Austin.*

- (1) Differential and Integral Calculus (408C), Spring 2006.
- (2) Algebraic structures I, Fall 2005.

*Massachusetts Institute of Technology.*

- (1) Undergraduate seminar in algebra and number theory (18.704), Spring 2004.
- (2) Graduate algebraic geometry (18.725), Fall 2003.
- (3) Undergraduate number theory (18.781), Spring 2003.
- (4) Calculus recitations (18.02), Fall 2002.

Last updated: August 2, 2018