

CURRICULUM VITAE

Cristian Martinez

Personal information

Date and place of birth: January 4, 1985. Cali, Colombia.

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Education

University of Utah	United States	2009-2015	PhD. Mathematics.
The Abdus Salam ICTP	Italy	2008-2009	Diploma Mathematics.
Universidad de los Andes	Colombia	2006-2007	M.Sc. Mathematics.
Universidad del Valle	Colombia	2001-2005	B.Sc. Mathematics.

Positions

- 07/01/2015 - Present. Visiting Assistant Professor. Department of Mathematics, University of California, Santa Barbara. Santa Barbara, CA, United States.
- 08/25/2009 - 05/30/2015. Teaching Assistant. Department of Mathematics, University of Utah. Salt Lake City, United States.
- 09/01/2008 - 07/31/2009. Diploma Student, Mathematics Section. The Abdus Salam ICTP. Trieste, Italy.
- 01/15/2006 - 07/31/2008. Graduate Assistant. Department of Mathematics, Universidad de los Andes. Bogotá, Colombia.
- 01/15/2006 - 07/31/2008. Research Assistant, Geometric Analysis and Applications. Department of Mathematics. Universidad de los Andes. Bogotá, Colombia.
- 08/15/2003- 12/10/2005. Academic Assistant. Department of Mathematics, Universidad del Valle. Cali, Colombia.

Theses

- “Some Birational Geometric Aspects of Moduli Spaces of Sheaves on Surfaces via Bridgeland Wall-Crossing”. Ph.D. Thesis. Advisor: Aaron Bertram.
- “Quantum Cohomology”. Diploma Thesis. Advisor: Lothar Göttsche.
- “Chen-Ruan cohomology of symmetric products and cohomology of Hilbert schemes of points on surfaces”. Master Thesis. Advisor: Bernardo Uribe.
- “Alexander Duality and the General Separation Theorem”. Undergraduate Monograph. Advisor: Gonzalo Garcia.

Papers and Preprints

- With T. Stark. *Projectivity of Bridgeland moduli on Hirzebruch surfaces*. Work in progress.
- With B. Schmidt. *Geometry of 1-dimensional space sheaves*. Work in progress.
- With B. Schmidt. *Bridgeland stability on blow ups and counterexamples (with an appendix by Omprokash Das)*. Preprint 2017. arXiv:1708.08567. Submitted.
- *Failure of the generalized Bogomolov-Gieseker inequality on blow-ups*. 2016.
- With A. Bertram. *Change of polarization for moduli spaces of sheaves on surfaces as Bridgeland wall-crossing*. Preprint 2015. arXiv:1505.07091. Submitted.
- *Duality, Bridgeland wall-crossing and flips of secant varieties*. Internat. J. Math. 28 (2017), no. 2, 1750011, 40 pp. 14D20 (14E30 18E30).
- With A. Bertram and J. Wang. *The birational geometry of moduli space of sheaves on the projective plane*. Geometriae Dedicata: Volume 173, Issue 1 (2014), Page 37-64.
- *On Hilbert schemes and Chen-Ruan cohomology*. Mat. Ense. Univ. (N.S.) 17 (2009), no. 2, 11-30.

Recent Attended Conferences

- FRG Workshop on Moduli of Sheaves and Strange Duality. Pennsylvania State University. Fall 2017.
- Geometry of Moduli Spaces. University of California, San Diego. Spring 2017.
- UGA-SWAG: Georgia Summer Workshop in Algebraic Geometry. University of Georgia, Athens. Fall 2016.
- AMS Spring Southeastern Sectional Meeting. Special Session on Moduli Spaces and Vector Bundles. University of Georgia, Athens. Spring 2016.
- FRG Mini-Workshop on Unramified Cohomology, Derived Categories, and Rationality. University of Utah. Spring 2016.
- Complex Algebraic Geometry Conference at UCSD. Winter 2016.
- Southern California Algebraic Geometry Seminar at UCLA. Fall 2015.
- AMS Summer Institute in Algebraic Geometry. University of Utah. Summer 2015.
- AMS Sectional meeting at San Francisco State University. Fall 2014.
- Algebraic Geometry: New connections for recent PhDs. Seattle, WA. 2014.
- Midwest Algebraic Geometry Graduate Conference -MAGGC at UIC. Spring 2014.
- Graduate Workshop on Geometry of Hilbert Schemes at Simons Center for Geometry and Physics. Fall 2013.
- Recent Advances in Algebraic Geometry: a conference in honor of Rob Lazarsfeld's 60th birthday at UMICH, May 16-19 2013.
- Hodge Theory and Classical Algebraic Geometry at OSU, May 13-15 2013.
- Graduate Workshop on Moduli Spaces and Bridgeland Stability at UIC, March 23-25 2013.
- Western Algebraic Geometry Seminar - WAGS. Spring 2011-Fall 2017.
- School on Birational Geometry and Moduli Spaces - VIGRE Mini-course. June 2010.
- Advanced School and Conference on Knot Theory and its Applications to Physics and Biology. The Abdus Salam-ICTP. May 2009.

Seminar and Conference Talks

- *Stability conditions on blow-ups*. Algebraic Geometry Seminar. University of California, Santa Barbara. Fall 2017.
- *Birational geometry of moduli spaces of sheaves via Bridgeland wall-crossing*. Coloquio extraordinario de matematicas. Universidad de los Andes, Bogotá. Summer 2017.
- *Stable bundle/sheaf/complex and Bogomolov inequalities*. CSUN Algebra, Number Theory, and Discrete Mathematics Seminar. California State University, Northridge. Spring 2017.
- *Databases of geometric objects as geometric objects*. Dynamical Neurosciences Seminar. University of California, Santa Barbara. Spring 2017.
- *Stability conditions and Bogomolov-Gieseker inequalities*. Algebraic Geometry Seminar. University of California, Riverside. Winter 2017.
- *Stability conditions and Bogomolov-Gieseker inequalities*. Algebraic Geometry Seminar. University of Georgia, Athens. Fall 2016.
- *Gieseker Moduli as Bridgeland Moduli*. AMS Spring Southeastern Sectional Meeting, Special Session on Moduli Spaces and Vector Bundles. University of Georgia, Athens. Spring 2016.
- *Linear Coordinates for Stability Conditions on Surfaces*. Algebraic Geometry Seminar. University of Illinois at Urbana-Champaign. Fall 2015.
- *Stable Bundle-Sheaf-Complex*. Algebraic Geometry Seminar. University of California, Santa Barbara. Fall 2015.
- *Change of polarization for moduli of sheaves on surfaces as Bridgeland wall-crossing*. AMS Summer Institute in Algebraic Geometry. University of Utah. Salt Lake City, UT. Summer 2015.
- *Change of polarization for moduli of sheaves on surfaces as Bridgeland wall-crossing*. AMS sectional meetings. Special session on Algebraic Geometry I. San Francisco State University. San Francisco, CA. Fall 2014.
- *Change of polarization for moduli of sheaves as Bridgeland wall-crossing*. Poster session at WAGS. University of Idaho. Moscow, ID. Fall 2014.
- *Change of polarization for moduli of sheaves on surfaces as Bridgeland wall-crossing*. Algebraic Geometry Seminar. Rice University. Houston, TX. Fall 2014.
- *Duality, Bridgeland wall-crossing and flips of secant varieties*. Midwest Algebraic Geometry Graduate Conference. University of Illinois at Chicago. Chicago, IL. Spring 2014.
- *Duality, Bridgeland wall-crossing and flips of secant varieties*. Poster session at WAGS. University of California San Diego. San Diego, CA. Fall 2013.
- *Birational geometry of the Gieseker moduli of one-dimensional stable plane sheaves*. Algebraic Geometry Seminar. University of Utah. Salt Lake City, UT. Fall 2013.
- *Hilbert schemes*. Topology and geometry seminar. Universidad de los Andes. Bogotá, Colombia. 2008.
- *Orbifold cohomology of the symmetric product*. Geometric and Topological Methods for Quantum Field Theory - Summer school. Villa de Leyva, Colombia. July 2007.
- *Virtual intersection product of the symmetric product*. EMALCA Colombia- First Colombian School of Mathematics. El Socorro, Colombia. October 2006.
- *Quantum cohomology*. Topology and geometry seminar. Universidad de los Andes. Bogotá, Colombia. 2006.

Organizational Activities

- UCSB Learning Seminar on Kähler Geometry. Fall 2017.
- UCSB Reading Seminar: Derived Categories. Spring 2017.
- UCSB Reading Seminar: Random topics on Mirror Symmetry and Algebraic Geometry. Winter 2017.
- UCSB Seminar on Stability Conditions and Applications. Spring 2016.
- Organizer of the UCSB Algebraic Geometry Seminar Fall 2015–Present.
- Gromov-Witten Theory and Derived Categories Reading Seminar, University of Utah. *Bridgeland Stability Conditions on Threefolds*. Spring 2015.
- Organizer of the Student Algebraic Geometry Seminar at the University of Utah. *Mori Dream Spaces*. Fall 2014.
- Gromov-Witten Theory and Derived Categories Reading Seminar, University of Utah. *Bridgeland's proof of the DT/PT correspondence via Hall algebras*. Spring 2014.
- Organizer of the Student Algebraic Geometry Seminar at the University of Utah. *Complex Projective Surfaces*. Spring 2014.

Mentoring

- Talon Stark. UCSB College of Creative Studies. Current student.

Service

- Refereed papers for *Advances in Geometry* and *Nagoya Mathematical Journal*.
- AMS reviewer since Summer 2017.

Teaching Experience

- At the University of California, Santa Barbara. Instructor for MATH 122A (Complex Analysis), MATH 117 (Methods of Analysis), MATH 4B (Differential Equations), MATH 8 (Introduction to Higher Mathematics), MATH 6B (Vector Calculus and Applications II), and MATH 34B (Calculus for Social and Life Sciences).
- At the University of Utah. Teaching Assistant for MATH 2110 and MATH 1010. Instructor for MATH 1100, MATH 1050, MATH 1060, and MATH 1220.
- At the Universidad de los Andes. Teaching Assistant for Vector Calculus, Differential Equations, and Linear Algebra. Instructor for Precalculus and Differential Calculus.
- At the Universidad del Valle. Teaching Assistant for Vector Calculus, Differential Calculus, Integral Calculus, Differential Equations, and Linear Algebra.

References

- David R. Morrison, University of California, Santa Barbara; drm@math.ucsb.edu
- Aaron Bertram, University of Utah; bertram@math.utah.edu
- Emanuele Macrì, Northeastern University; e.macri@northeastern.edu
- Jason Lo, California State University at Northridge; jason.lo@csun.edu
- Hector Ceniceros, University of California, Santa Barbara; hdc@math.ucsb.edu (teaching)