

## Samouil Molcho

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### EMPLOYMENT

**Postdoctoral Researcher**

ETH Zurich  
Zurich, Switzerland

September 2020-

**Postdoctoral Researcher**

Einstein Institute of Mathematics  
Hebrew University of Jerusalem  
Jerusalem, Israel

October 2018-September 2020

**Postdoctoral Researcher**

Scuola Normale Superiore  
Pisa, Italy

October 2016-October 2018

**Burnett Meyer Instructor**

University of Colorado  
Boulder, CO, USA

September 2014-July 2016

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### EDUCATION

**Brown University**

May 2014  
Advisor: Dan Abramovich

Ph.D. Mathematics

**Brandeis University**

May 2009  
Wien International Scholar

B.A. Mathematics (summa cum laude)

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### RESEARCH INTERESTS

Algebraic Geometry; Logarithmic Geometry; Toric and Tropical Geometry; Moduli Spaces; Abelian Varieties; Gromov-Witten Theory; Curve Counting Invariants;

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### PAPERS AND PREPRINTS

- **Pullbacks of Brill-Noether Classes under Abel-Jacobi Sections** (Submitted)
- **Smooth Compactifications of the Abel-Jacobi Section** -- *Forum of Mathematics, Sigma*, 11, E88. doi:10.1017/fms.2023.83
- **Logarithmic Double Ramification Cycles** With D. Holmes, R. Pandharipande, A. Pixton, J. Schmitt -- (Submitted)

- **Tropicalization of the Universal Jacobian** With M. Melo, M. Ulirsch, F. Viviani -- *Épjournal Géom. Algébrique* 6 (2022), Art. 15, 51 pp.
- **A Case Study of Intersections on Blowups of The Moduli of Curves** With D.Ranganathan -- (Submitted)
- **The Hodge bundle, the universal 0-section, and the log Chow ring of the moduli space of curves** With R. Pandharipande, J. Schmitt -- *Compositio Mathematica*, 159(2), 306-354
- **Models of Jacobians of Curves** With D. Holmes, G. Orecchia, T.Poiet -- *Journal für die reine und angewandte Mathematik (Crelle's Journal)*, vol. 2023, no. 801, 2023, pp. 115-159
- **Logarithmically Regular Morphisms** With M. Temkin -- *Math Ann.* 379 (2021), no. 1-2, 325-346
- **The Logarithmic Picard Group and its Tropicalization** With J. Wise -- *Compositio Mathematica* 158 (2022), no. 7, 1477-1562.
- **Tropicalizing the Moduli Space of Broken Toric Varieties** With J. Wise
- **Universal Stacky Semistable Reduction** -- *Israel Journal of Math*, 242 (2021), no.1, 55-82
- **Appendix to: Moduli of Morphisms of Logarithmic Schemes:** Appendix C in the paper of J. Wise – *Algebra Number Theory* 10 (2016), no.4, 695-735
- **A Theory of Stacky Fans** With W.D Gillam
- **Logarithmic Stable Toric Varieties and their Moduli** With K. Ascher – *Algebraic Geometry* 3(2016), no. 3, 296-319
- **Log Stable Maps as Moduli Spaces of Flow Lines** With W.D Gillam
- **Localization for Logarithmic Stable Maps** With E. Routis – *Transactions of the American Mathematical Society, Series B*, 6 (2019)
- **Log Differentiable Spaces and Manifolds with Corners** With W.D. Gillam

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## TEACHING EXPERIENCE

Supervised Undergraduate Students:

- Lukas Bertsch (Reading Project on Riemann Surfaces) (2021)
- Lukas Oestmann (Bachelor's Thesis on the ELSV formula) (2021)
- Mashiro Hauenstein (Bachelor's Thesis on the Grothendieck-Riemann Roch Theorem) (2022)
- Philip Sandt (Bachelor's Thesis On Resolution of Toric Singularities)(2023)

Supervised Master's Students:

- Jeremy Feusi (Masters' Thesis on log line bundles on the moduli space of curves) (2023)

**Toric Geometry**  
ETH Zurich

Fall 2023

**Course on Logarithmic Geometry**  
Scuola Normale

Spring 2018

Superiore

Fall 2017

**Seminar on Derived Geometry**

Scuola Normale Superiore

Organized the seminar and gave half of the lectures

Spring 2017

**Seminar on Bridgeland Stability****Conditions**

Scuola Normale Superiore

Organized the seminar and gave half of the lectures

Fall 2016

**Seminar on Fourier-Mukai Transforms**

Scuola Normale Superiore

Organized the seminar and gave half of the lectures

Spring 2016

**Math 8174: Topics in Algebraic Geometry -  
Moduli Spaces**

CU Boulder

Fall 2015

Spring 2016

**Math 2400: Multivariable Calculus**

CU Boulder

Spring 2015

**Math 3130: Linear Algebra**

CU Boulder

Fall 2014

**Math 3001: Real Analysis**

CU Boulder

Fall 2013

**Math 2001: Discrete Mathematics**

CU Boulder

Fall 2012

**Math 0190: AP Calculus**

Brown University

Fall 2011

Fall 2010

**Math 0200: Multivariable Calculus**

Brown University

**Math 0200: Multivariable Calculus**

Brown University

## **Math 0090: Introductory Calculus I**

Brown University

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### **INVITED TALKS**

<b>Curves: Algebraic, Tropical and Logarithmic Conference, BIRS, Banff</b>	Summer 2023
<b>Arithmetic, Birational Geometry, and Moduli Spaces</b>	Summer 2023
<b>Conference at Brown University</b>	
<b>Institut Mittag-Leffler, Moduli and Logarithmic Geometry Conference</b>	Summer 2023
<b>ETH Zurich</b>	Spring 2023
<b>Humbolt University</b>	Spring 2023
<b>EPFL</b>	Spring 2023
<b>University of Liverpool</b>	Spring 2023
<b>Moduli spaces: Theory and Coding</b>	Spring 2023
<b>Log Geometry and Moduli Conference, Frankfurt</b>	Spring 2023
<b>Helvetic Algebraic Geometry Conference</b>	Summer 2022
<b>ETH Zurich</b>	Spring 2022
<b>University of Utah</b>	Spring 2022
<b>Institut Mittag-Leffler, Moduli and Logarithmic Geometry Conference</b>	Fall 2021
<b>Harvard/MIT</b>	Fall 2021
<b>ETH Zurich</b>	2 lectures, Fall 2021
<b>Roma Tre</b>	Fall 2021
<b>Stanford</b>	Spring 2021
<b>Moduli Across the Pandemic Conference</b>	Spring 2021
<b>ETH Zurich</b>	Spring 2021
<b>ICERM</b>	Spring 2021
<b>ETH Zurich</b>	5 lectures, Fall 2020
<b>ETH Zurich</b>	November 2019
<b>Universitat Regensburg: NATROP 19</b>	July 2019
<b>Oberwolfach: Logarithmic Enumerative Geometry and Mirror Symmetry</b>	June 2019
<b>Goethe-Universitat Frankfurt</b>	June 2019
<b>University of Leiden</b>	June 2019
<b>University of British Columbia</b>	Spring 2016
<b>AMS Sectional Meeting, San Francisco</b>	Fall 2014
<b>University of Colorado at Boulder</b>	Spring 2014
<b>ETH Zurich</b>	Spring 2013
<b>University of Utah</b>	Spring 2013

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