

Tasos Moulinos

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Language skills: English (native), Greek (fluent), French (working proficiency), Swedish (beginner)

Education

B.A. in Mathematics and Philosophy, Columbia University (May 2011)

M.A. in Mathematics, City University of New York (May 2012)

Ph.D. in Mathematics, University of Illinois at Chicago (April 2018)

- Day of PhD Defense: 19.04.2018
- PhD Supervisors: Benjamin Antieau & Brooke Shipley

Dissertation

Topological K -theory and Invertibility

Academic Positions

CNRS Chargé de recherche

Laboratoire de Mathématiques d'Orsay
Université Paris-Saclay
October 2024-

Member at the Institute for Advanced Study

Institute for Advanced study,
Princeton, New Jersey
(September 2023-July 2024)

CNRS Postdoctoral Researcher

Université Sorbonne Paris Nord
(Oct 2022 - August 2023)

- Supervised by Yonatan Harpaz

CNRS Postdoctoral Researcher

Institut de Mathématiques de Toulouse
(Sep 2018 - Aug 2022)

- Supervised by Bertrand Toën

MSRI Postdoctoral Fellow
Mathematical Sciences Research Institute, Berkeley
(Jan 2019 - May 2019)

Areas of Specialization

Derived Algebraic Geometry • Algebraic K-theory • Stable Homotopy Theory

Publications & Preprints

JOURNAL ARTICLES

- C. Ausoni, H.Ö. Bayındır, T. Moulinos, *Adjunction of roots, algebraic K-theory and chromatic redshift*, *Compositio Mathematica* **162** (2026), no. 4, 999–1045.
- A. Hedenlund, T. Moulinos, *The synthetic Hilbert additive group scheme*, *Selecta Mathematica (N.S.)* **31** (2025), no. 5, Paper No. 89.
- A. Hedenlund, T. Moulinos, *Twisted spectra revisited*, *Algebraic & Geometric Topology* **25** (2025), no. 9, 5693–5754.
- T. Moulinos *Cogroupoid structures on the circle and the Hodge degeneration*, *Forum of Mathematics, Sigma*. **12** (2024) no. e10.
- T. Moulinos *Filtered formal groups, Cartier duality and derived algebraic geometry*, to appear in *Épjournal de Géométrie Algébrique (EPIGA)*.
- M. Brown, T. Moulinos, *Topological K-theory of twisted equivariant complexes*, *Homology, Homotopy & Applications*. **25** (2023) no.1 173–187.
- H.O. Bayındır, T. Moulinos, *Algebraic K-theory of $THH(\mathbb{F}_p)$* , to appear in *Transactions of the American Mathematical Society*. **375** (2022) 4177–4207.
- T. Moulinos *The geometry of filtrations*, *Bulletin of the London Mathematical Society*, published online 15 June 2021.
- T. Moulinos, M. Robalo, B. Toën, *A universal Hochschild-Kostant-Rosenberg theorem*, *Geometry & Topology*, **26.2** (2022): 777–874.
- T. Moulinos, *Derived Azumaya Algebras and Twisted K-theory*, *Advances in Mathematics* **351** (2019) 761–803.
- S. Hayes, A. Hundemer, E. Milliken, T. Moulinos, *The Real Dynamics of Bieberbach’s Example*, *Journal of Geometric Analysis* (2015) 25: 2386.

PREPRINTS

- S. Mondal, T. Moulinos, L. Yang, *Artin–Mazur formal groups and Milne duality via unipotent spectra*, [arXiv:2510.06152] (submitted).

Conferences & Seminars

SELECTED TALKS

- *Height one phenomena in p-adic Hodge theory*, Talk at CATS 8: A conference in honour of Gabriele Vezzosi’s 60th birthday, Oléron, France, 1 October 2026
- *The homotopical geometry of p-adic cohomology theories*, Talk at the Third Congress of Greek Mathematicians, Athens, Greece, June 29–July 4, 2026

- *Geometric approach to chromatic homotopy theory*, Talk at the KAsH grant kick-off meeting, Université Sorbonne Paris Nord, Villetaneuse, France, 3 December 2025
- *Unipotent spectra and duality for syntomic cohomology*, Talk at the Géométrie et singularités seminar, IRMAR, Rennes, 27 November 2025
- *Unipotent spectra and Artin-Mazur formal groups*, Talk at the DAG in Taipei conference, March 2025
- *Lifting the Hilbert additive group to the sphere*, Talk at the Haïfa topology seminar (on zoom), December 2024
- *The synthetic Hilbert additive group*, Talk at the Trondheim topology seminar, November 2024
- *Lifting the Hilbert additive group to the sphere*, Talk at the Paris-Saclay arithmetic geometry seminar, October 2024
- *Towards an analogue of the filtered circle over the sphere*, Talk at the MIT topology seminar, April 2024
- *Towards an analogue of the filtered circle over the sphere*, Talk at the Johns Hopkins University topology seminar, April 2024
- *Twisted stable homotopy theory*, Talk at the Northwestern University topology seminar, February 2024
- *Twisted spectra revisited*, Talk at the Columbia University topology seminar, February 2024
- *Twisted stable homotopy theory*, Talk at the Categories and stacks in algebraic geometry and algebraic topology conference (CATS7), Luminy, October 2023
- *Betti realizations of noncommutative motives*, Talk at the Motivic and noncommutative aspects of enumerative geometry conference, Nijmegen, July 2023
- *Schematic homotopy types and the filtered circle*, Talk at the University of Amsterdam Algebraic geometry seminar, November 2022
- *Schematic homotopy types and the filtered circle*, Talk at the SISSA, Algebraic Geometry seminar, Trieste, Italy, November 2022
- *Adjoining roots to ring spectra and algebraic K-theory*, Talk at Second Congress of Greek mathematicians, Athens, Greece, July 2022
- *Cogroupoid structures on the circle and the Hodge degeneration*, Talk at the Barcelona conference on Higher structures, Barcelona, Spain June 2022
- *Cogroupoid structures on the circle and the Hodge degeneration*, Talk at the Northwestern topology seminar, April 2022
- *Derived algebraic geometry and the filtered circle*, Talk at the Greek Algebra and Number theory (G.A.N.T) seminar, December 2021
- *Perspectives on Nonabelian Hodge theory*, Viva Talbot! A virtual Talbot Workshop retrospective, June 2021
- *A tour through the topological K-theory of dg categories*, Talk at the K-theory and related topics workshop, Zoom, May 2021

- *Filtered formal groups, Cartier duality and derived algebraic geometry* Séminaire de topologie algébrique du LAGA, Zoom, March 2021
- *Towards a prismatic analogue of the filtered circle*, Talk at the ALPE Toulouse-Montpellier joint seminar in Montpellier, February 2020
- *Hochschild homology and the filtered circle*, Talk at the Einstein Chair Seminar, CUNY, February 2020
- *A universal HKR theorem*, Talk at the Columbia University Symplectic Topology seminar, November 2019
- *Towards a universal HKR theorem*, Talk at the MSRI, Berkeley, April 2019
- *Suslin–Wodzicki excision after Tamme*, Talk at the Vitamin K_1 workshop, June 2018
- *Derived Azumaya Algebras and Topological K -theory*, University of Madison Wisconsin Algebraic Geometry Seminar, January 2018
- *Derived Azumaya Algebras and Topological K -theory*, Talk at the Homotopy Theory: Tools and Applications Conference, July 2017
- *Derived Azumaya Algebras and Topological K -theory*, Talk at the Hausdorff School: Derived Non-commutative Geometry Workshop, June 2017
- *On the Topological K -theory of Derived Azumaya Algebras*, Talk at the Invertibility and Duality in Derived Algebraic Geometry and Homotopy Theory Conference, April 2017

SELECTED CONFERENCES ATTENDED

CATS 8: A conference in honour of Gabriele Vezzosi's 60th birthday
Oléron, France (Fall 2026)

Third Congress of Greek Mathematicians
National and Kapodistrian University of Athens and National Technical University of Athens, Athens, Greece (Summer 2026)

KAsH grant kick-off meeting
Université Sorbonne Paris Nord, Villetaneuse, France (December 3–5, 2025)

Masterclass: Proof of the geometric Langlands conjecture
Copenhagen, Denmark (Summer 2025)

Homotopy theory and Floer homology
Institute Mittag-Leffler (Summer 2025)

DAG in Taipei
Taipei, Taiwan (Spring 2025)

Oberwolfach Arbeitsgemeinschaft: Algebraic K-theory and the telescope conjecture
Oberwolfach, Germany (Fall 2024)

Workshop on p-adic Arithmetic Geometry
Institute for Advanced Study (Spring 2024)

Categories and stacks in algebraic geometry and algebraic topology CATS 7
CIRM, Luminy (Fall 2023)

Arbeitstagung 2023 on Condensed Mathematics
MPIM Bonn (Summer 2023)

Motivic and non-commutative aspects of enumerative geometry

Radboud University Nijmegen (Summer 2023)
 Topological Hochschild Homology and Zeta Values
University of Copenhagen, Denmark (Winter 2023)
 CATS-60: in honor of Simpson's 60th birthday
Université Paul Sabatier, Toulouse (Summer 2022)
 Barcelona Conference on Higher Structures *University of Barcelona* (Summer 2022)
 Oberwolfach Seminar: Topological Cyclic Homology and Arithmetic
Oberwolfach, Germany (Fall 2019)
 Program on Derived algebraic geometry IMT-SCU
Chengdu, China (Fall 2019)
 Derived algebraic geometry and its applications
MSRI, Berkeley (Spring 2019)
 CATS₅
Museu Nacional de Historia Natural e da Ciência, Lisbon (Fall 2018)
 Midwest Topology Summer School on Trace Methods in Algebraic K -theory
Indiana University Bloomington (Summer 2017)
 Homotopy Theory: Tools and Applications
University of Illinois at Urbana-Champaign (Summer 2017)
 Hausdorff School: Derived Noncommutative Geometry
Hausdorff Center for Mathematics, Universität Bonn (Summer 2017)
 Invertibility and Duality in Derived Algebraic Geometry and Homotopy Theory
Universität Regensburg (Spring 2017)
 Masterclass: Stratifications and Duality in Modular Representation Theory,
University of Copenhagen (Spring 2017)
 Motives in Derived Algebraic Geometry
Universität Duisburg-Essen (Spring 2016)
 Midwest Topology Seminar
Wayne State University (Fall 2015)
 Interactions between Representation Theory, Algebraic Topology and Commutative Algebra
Universitat Autònoma de Barcelona (Spring 2015)
 Midwest Topology Seminar
University of Illinois at Chicago (Winter 2015)
 Summer Graduate School in Algebraic Topology
MSRI, Guanajuato, Mexico (Summer 2014)
 Homological Methods in Algebraic Geometry
University of Wisconsin, Madison (Spring 2014)

SEMINARS ORGANIZED

'Groupe de Travail' on the Chromatic Nullstellensatz, LAGA (Spring 2022)
 'Groupe de Travail' on Hermitian K -theory, IMT (Spring 2022)
 'Groupe de Travail' on Prismatic cohomology, IMT (Fall 2020)
 'Groupe de Travail' on Elliptic Cohomology, IMT (Fall 2018)
 Graduate Algebraic K -theory Seminar, UIC (Spring 2017)
 Graduate Seminar in Chromatic Homotopy Theory, UIC (Spring 2016)
 Graduate Seminar in Derived Algebraic Geometry, UIC (Spring 2016)

Awards

Giorgio and Elena Petronio Fellowship, for the program “ p -adic arithmetic geometry” at the Institute for Advanced Study, Princeton, NJ (Award period: Sept 2023- July 2024)

MSRI Postdoctoral Fellowship, for the program “Derived Algebraic Geometry” at the Mathematical Sciences Research Institute, Berkeley, California (Award period: Jan - May 2019)

UIC Provost’s Award for Graduate Research, funds used to visit the Hausdorff Center for Mathematics in Bonn in Spring 2018. (Award received in 2017)

Advising

PHD STUDENTS

Andreas Momme Studsgaard, PhD student (second year)

MASTER’S STUDENTS

Hongxiao Bu, M2 masters degree, expected Fall 2025 Université Paris-Saclay

Individual scientific reviewing activities

Referee (5 papers) for publications in *Advances in Mathematics*, *Selecta Mathematica*, *Journal for Pure and Applied Algebra*

Expert opinion (1 paper) for *Advances in Mathematics*

Expert opinion (1 paper) for *Compositio Mathematica*

Teaching Experience

Teaching Assistant (September 2012-May 2018)

UIC Department of Mathematics, Statistics, and Computer Science

College Algebra, *Summer Enrichment Workshop on College Algebra*, *Pre-Calculus*, *Calculus I*, *Calculus II*, *Calculus for Business*

Description:

- Led problem sessions (two times a week) with the students, graded exams and homework, created problem solutions for exams.
- As an instructor for the Summer Enrichment Workshop on College Algebra, I developed the full curriculum plan for the summer accelerated course on algebra. Graded all homework and exams.
- Provided tutoring services twice a week at the Mathematical Sciences Learning Center. Guided students through problems in (abstract and linear) algebra, analysis, discrete mathematics, calculus, probability, introduction to proofs, and other courses.