Curriculum Vitae
Changjian Su

CONTACT
INFORMATION

Yau mathematical Science Center
Tsinghua University
Haidian District
Beijing, China

Email:changjiansu@mail.tsinghua.edu.cn
Webpage:
https://changjiansu.github.io/

RESEARCH
INTERESTS

Representation theory, Algebraic geometry

EDUCATION

Columbia University

Ph.D., Mathematics, May 2017

Advisor: Andrei Okounkov

University of Science and Technology of China

B.S. in Mathematics, May 2012

EMPLOYMENT

2022-now, tenure track, Yau Mathematical Sciences Center, Tsinghua University

2018-2021, University of Toronto, postdoc fellow

2017-2018, IHES, postdoc fellow

PUBLICATIONS

From motivic Chern classes of Schubert cells to their Hirzebruch and CSM classes
(with Paolo Aluffi, Leonardo Mihalcea, and Jörg Schürmann), Contemp. Math. 804, 1-52, American Mathematical Society, 2024

Hook formula for Coxeter groups via the twisted group ring, (with Leonardo C. Mihalcea, Hiroshi Naruse), Proc. Japan Acad. Ser. A Math. Sci. 100 (6), 31-36, (June 2024) DOI: 10.3792/pjaa.100.007

Motivic Chern classes of Schubert cells, Hecke algebras, and applications to Casselman's problem
(with Paolo Aluffi, Leonardo Mihalcea, and Jörg Schürmann), Ann. Sci. Éc. Norm. Supér, 57(1), 87-141, 2024

Automorphisms of the Quantum Cohomology of the Springer Resolution and Applications
(with Changzheng Li, Rui Xiong), Advances in Mathematics, Volume 442, 2024

Shadows of characteristic cycles, Verma modules, and positivity of Chern-Schwartz-MacPherson classes of Schubert cells
(with Paolo Aluffi, Leonardo Mihalcea, and Jörg Schürmann), Duke Mathematical Journal, 172(17): 3257-3320, 2023

Geometric properties of the Kazhdan-Lusztig Schubert basis
(with Cristian Lenart, Kirill Zainoulline, and Changlong Zhong), Algebra & Number Theory, 17 (2), 435-464, 2023

Whittaker functions from motivic Chern classes
(with Leonardo Mihalcea, joint appendix with D. Anderson), Transformation Groups,

volume 27, pages 1045-1067 (2022)

Left Demazure-Lusztig operators on equivariant (quantum) cohomology and K theory
(with Leonardo C. Mihalcea, and Hiroshi Naruse), International Mathematics Research Notices, Volume 2022, Issue 16, August 2022, Pages 12096-12147,

Wall crossings and a categorification of K-theory stable bases of the Springer resolution (with Gufang Zhao, and Changlong Zhong), Compositio Mathematica, Volume 157, Issue 11, November 2021, pp. 2341 - 2376

Structure constants for Chern classes of Schubert cells
Math. Z. 298, 193-213 (2021).

Motivic Chern classes and Iwahori invariants of principal series
To appear in proceedings of the 8th International Congress of Chinese Mathematicians, 2019

Stable bases of the Springer resolution and representation theory
(with Changlong Zhong), In International Conference on the Trends in Schubert Calculus, Springer Proceedings in Mathematics & Statistics, Vol 332, 195-221, 2020

Positivity of Segre-MacPherson classes
(with Paolo Aluffi, Leonardo Mihalcea, and Jörg Schürmann) arXiv:1902.00762, to appear in "Facets of Algebraic Geometry: A Volume in Honour of William Fulton's 80th Birthday"

On the K-theory stable basis of the Springer resolution
(with Gufang Zhao, and Changlong Zhong), Ann. Sci. Éc. Norm. Supér (4) 53 (2020), no. 3, 663-711

Restriction formula for stable basis of the Springer resolution
Selecta Mathematica, Volume 23 (2017), Issue 1, pp 497-518.

Equivariant quantum cohomology of cotangent bundle of G/P
Advances in Mathematics, 289 (2016), 362-383.

Stable Basis and Quantum Cohomology of Cotangent Bundles of Flag Varieties
Columbia University, Ph.D. Thesis (2017)

PREPRINTS   *Affine ıquantum groups and Steinberg varieties of type C*, (with Weiqiang Wang), arXiv:2407.06865

A Pieri type formula for motivic Chern classes of Schubert cells in Grassmannians, (with Neil J.Y. Fan, Peter L. Guo, Rui Xiong), arXiv:2402.04500

Chevalley formulae for the motivic Chern classes of Schubert cells and for the stable envelopes, (with Leonardo C. Mihalcea, Hiroshi Naruse), arXiv:2312.17200

Hook formulae from Segre-MacPherson classes
(with Leonardo C. Mihalcea, and Hiroshi Naruse), arXiv:2203.16461

INVITED TALKS   *Characteristic classes of Singular spaces, celebrating the 60th anniversary of Prof. Jörg Schürmann*, IASM, Zhejiang University, Hangzhou, August, 2024

International Congress of Basic Science, Beijing, July, 2024

Conference on Representation Theory, Geometry and Categorification, BIT, Beijing, June, 2024

Conference on Algebraic Representation Theory (CART) 2023, NCTS, Dec, 2023

Beijing Mathematical Society Annual Meeting 2023, Beijing, Nov, 2023

Beijing Representation Theory Days, BICMR, Sep, 2023

Representation theory seminar, Academy of Mathematics and Systems Science, March, 2023

Miniworkshop on Geometry, Academy of Mathematics and Systems Science, March, 2023

Online mathematical physics seminar, IASM, Zhejiang University, Hangzhou, China, Nov. 2022

Workshop on combinatorics, Nankai University, China, Oct. 2022

Mini workshop on geometric representation theory, YMSC, Tsinghua University, Sep. 2022

Geometric representation theory–with a focus on flag varieties and affine Grassmanians, AMSS, Beijing, China, July 2022

Geometry and Combinatorics from Root Systems, ICERM, Brown University, March 2021

AMS special section on Recent advances in Schubert calculus and related topics, Brown University, March 2021

Geometry, Number Theory, and Representation Theory Seminar, University of Alberta, March, 2021

Geometric Representation Theory seminar, University of Toronto, Feb. 2021

Colloquium, Rutgers University - Newark, Jan. 2021

Colloquium, Academy of Mathematics and Systems Science, Dec. 2020

Representation and Number Theory Seminar, CUHK, Hong Kong, Dec. 2020

Informal Mathematical Physics Seminar, Columbia University, Nov. 2020

Symplectic and Mathematical Physics Seminar, BICMR, Beijing, China, Oct 2020

Mathematical Physics seminar, Perimeter Institute, Canada, Mar. 2020

IHP Winter School: Categorifications, Moduli Spaces and Representation Theory, CIRM, Marseille, France, Jan 2020

New interactions between Geometry and Combinatorics, Osaka City University, Japan, Oct. 2019

Algebraic geometry seminar, University of Illinois at Urbana-Champaign, Sep. 2019

Thematic activity on quiver varieties and representation theory, CRM, Montreal, August, 2019.

Invited speaker, International Congress of Chinese Mathematicians, Beijing, June, 2019

Geometric Representation theory seminar, Yau Mathematical Sciences Center, Tsinghua University, China, June, 2019

Representation theory seminar, Harbin Engineering University, China, May, 2019

Representation theory seminar, Shanghai Center for Mathematical Sciences, May, 2019

Algebra seminar, University of Science and Technology of China, Hefei, May, 2019

GAGP seminar, Sun Yat-sen University, China, April, 2019

Geometry, Physics, and Representation Theory Seminar, Northeastern University, April, 2019

Algebraic geometry seminar, The Ohio State University, April, 2019

Lie group seminar, Cornell University, March, 2019

Algebra seminar, Virginia Tech, Feb, 2019

Algebra seminar, University of Virginia, Feb, 2019

Mathematics - String Theory seminar, Kavli IPMU, Japan, Feb. 2019

Representation theory, gauge theory, and integrable systems, Kavli IPMU, Japan, Feb. 2019

Algebra seminar, York University, Jan 2019

Geometric Representation Theory seminar, University of Toronto, Jan. 2019

Geometric representation theory seminar, MIT, Dec. 2018

Geometric representation theory seminar, UNC Chapel Hill, Nov. 2018

Informal Mathematical Physics Seminar, Columbia University, Nov. 2018

Number theory/ Representation theory seminar, University of Toronto, Oct. 2018

Geometry, Symmetry and Physics seminar, Yale University, Sep. 2018

GAGP seminar, Sun Yat-sen University, China, Aug. 2018

Algebra seminar, East China Normal University, China, Aug. 2018

Algebra seminar, Zhejiang University, China, Aug. 2018

Representation theory seminar, Academy of Mathematics and Systems Science, Aug. 2018

Geometric Representation Theory seminar, University of Toronto, May. 2018

Representation and Geometry seminar, Paris Diderot University, May. 2018

Algebra seminar, University of Münster, Nov, 2017

International Festival in Schubert Calculus, Sun Yat-sen University, Nov. 2017

Representation and Geometry seminar, Paris Diderot University, Oct. 2017

Algebra seminar, University of Connecticut, Apr. 2017

Algebra seminar, Virginia Tech, Mar. 2017

Informal Mathematical Physics Seminar, Columbia University, Feb. 2017

Geometric representation seminar, MIT, Nov. 2016

Algebra seminar, University of Albany, Oct. 2016

Global singularity theory and curves workshop, Centre Interfacultaire Bernoulli, May. 2016

Workshop on Equivariant generalized Schubert calculus and its applications, University of Ottawa, Apr. 2016

Algebra seminar, Virginia Tech, Feb. 2016

AMS Special Session on Modern Schubert Calculus, Rutgers University, Nov. 2015

Moduli spaces in algebraic geometry and mathematical physics, Tianjin, Sep. 2015 (half hour contributed talk)

Informal Mathematical Physics Seminar, Columbia University, Nov. 2014

CONFERENCES ATTENDED

Arbeitsgemeinschaft: Higher Gross Zagier Formulas, Oberwolfach, Germany, Apr, 2017

Global Langlands correspondence, AIM, Dec. 2016

Geometric representation theory program, Simons Center for Geometry and Physics, Jan. 2016

Park City Math Institute Graduate Summer School and Research Program: Geometry of moduli spaces and representation theory, Jul. 2015

Quiver varieties, Simons Center, Oct. 2013

TEACHING EXPERIENCE

Tsinghua University

Fall	2024	Geometric representation theory II
Spring	2024	Introduction to quiver representations and quiver varieties
Fall	2023	Linear algebra
Spring	2023	Calculus A(2)
Fall	2022	Introduction to geometric representation theory

University of Toronto

Fall	2020	Instructor, Introduction to Ordinary Differential Equations
Fall	2020	Instructor, Calculus I
Spring	2020	Instructor, Calculus II (196 students)
Fall	2019	Instructor, Calculus II (196 students)
Spring	2019	Instructor, Calculus I (about 150 students)
Fall	2018	Instructor, Calculus I (about 150 students)

Columbia University

Spring	2017	Instructor, Calculus I
Fall	2016	Teaching Assistant, Lie group I
Summer	2016	Instructor, Calculus III
Spring	2016	Teaching Assistant, Lie group II
Fall	2015	Teaching Assistant, Calculus II
Spring	2015	Teaching Assistant, Representation of finite groups
Fall	2014	Teaching Assistant, Linear algebra

SYNERGISTIC
ACTIVITIES

Referee for CNTP, IMRN, Math Z, PRIMS, SIGMA, Compositio Mathematica, Journal of Topology, Science China Mathematics, Advances in Mathematics
Co-organizer of geometric representation theory seminar at University of Toronto
Co-organizer of geometric representation theory seminar at YMSC, Tsinghua University
Co-organizer of geometric representation theory workshop at YMSC, Tsinghua University, 2023 summer