Chi Cheuk Tsang

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Employment

2026	Simons Laufer Mathematical Sciences Institute McDuff Endowed Postdoctoral Fellow
2025	Université du Québec à Montréal CRM-Simons Postdoctoral Fellow
2023 - 2025	Université du Québec à Montréal CRM-ISM Postdoctoral Fellow

Education

2018 - 2023	University of California, Berkeley PhD in Mathematics, Advisor: Ian Agol
2014 - 2018	Chinese University of Hong Kong BSc in Mathematics, First Class Honours
2017	University of Waterloo Semester exchange program

Awards

2023	Herb Alexander Prize in Pure Mathematics
2018 - 2021	Croucher Scholarship for Doctoral Study

Publications and Preprints

15. Antonio Alfieri and Chi Cheuk Tsang; "Heegaard Floer theory and pseudo-Anosov flows II: Differential and Fried pants", *Preprint* (2025). arXiv:2506.07163

14. Antonio Alfieri and Chi Cheuk Tsang; "Heegaard Floer theory and pseudo-Anosov flows I: Generators and categorification of the zeta function", *Preprint* (2025). arXiv:2504.15420

13. Catherine Eva Pfaff and Chi Cheuk Tsang; "A 'cubist' decomposition of the Handel-Mosher axis bundle", *Preprint* (2025). arXiv:2503.16360

12. Chi Cheuk Tsang and Xiangzhuo Zeng; "Minimum dilatations of pseudo-Anosov braids", *Preprint* (2024). arXiv:2412.01648

11. Erwan Lanneau, Livio Liechti, and Chi Cheuk Tsang; "Minimal stretch factors of fully-punctured orientation-reversing pseudo-Anosov maps"; *Transactions of the American Mathematical Society*, **378** (2025), no. 4, 2943–2968. doi:10.1090/tran/9350

10. Chi Cheuk Tsang; "Examples of Anosov flows with genus one Birkhoff sections"; *Preprint* (2024). arXiv:2402.00229

9. Chi Cheuk Tsang; "Horizontal Goodman surgery and almost equivalence of pseudo-Anosov flows"; *Preprint* (2024). arXiv:2401.01847

8. Chi Cheuk Tsang; "On the set of normalized dilatations of fully punctured pseudo-Anosov maps"; *Annales de l'Institut Fourier*, to appear. arXiv:2306.10245

7. Michael Landry and Chi Cheuk Tsang; "Endperiodic maps, splitting sequences, and branched surfaces"; *Geometry and Topology*, to appear. arXiv:2304.14481

6. Eriko Hironaka and Chi Cheuk Tsang; "Standardly embedded train tracks and pseudo-Anosov maps with minimum expansion factor"; *Groups, Geometry, and Dynamics*, **19** (2025), no. 4, 1263–1317. doi:10.4171/ggd/805

5. Chi Cheuk Tsang; "Constructing Birkhoff sections for pseudo-Anosov flows with controlled complexity"; *Ergodic Theory and Dynamical Systems*, **44** (2024), no. 8, 2308–2360. doi:10.1017/etds.2023.105

4. Chi Cheuk Tsang; "Veering branched surfaces, surgeries, and geodesic flows"; *New York Journal of Mathematics* **29** (2023), 1425–1495.

3. Ian Agol and Chi Cheuk Tsang; "Dynamics of veering triangulations: infinitesimal components of their flow graphs and applications"; *Algebraic and Geometric Topology*, **24** (2024), no. 6, 3401–3453. doi:10.2140/agt.2024.24.3401

2. Ki Fung Chan, Spiro Karigiannis, and Chi Cheuk Tsang; "The $\mathcal{L}_B$-cohomology on compact torsion-free G_2 manifolds and an application to 'almost' formality"; *Annals of Global Analysis and Geometry* **55** (2019), no. 2, 325–369. doi:10.1007/s10455-018-9629-x

1. Ki Fung Chan, Spiro Karigiannis, and Chi Cheuk Tsang; "Cohomologies on almost complex manifolds and the $\partial\bar{\partial}$-lemma"; *Asian Journal of Mathematics* **23** (2019), no. 4, 561–584. doi:10.4310/AJM.2019.v23.n4.a2

Selected talks

25 Nov 2025	Tongji University, "Heegaard Floer theory and pseudo-Anosov flows"
24 Nov 2025	Nanjing University, "Flows and foliations on 3-manifolds"
13 Nov 2025	2K-GATE Workshop II, KAIST, "Pseudo-Anosov flows and veering triangulations"
19 Aug 2025	Workshop on "Low dimensional topology and Floer theory", Centre de Recherches Mathématiques, "Heegaard Floer theory and periodic points of pseudo-Anosov maps"
31 Mar 2025	MIT Geometry and Topology Seminar, "Canonical axes for outer automorphisms of free groups"
18 Feb 2025	Institute for Advanced Studies Dynamics and Group Seminar, "Minimum entropies of braids"
29 Oct 2024	Yale University Geometry and Topology Seminar, "Birkhoff sections for Anosov flows"
19 Sep 2024	Princeton Topology Seminar, "A connection between pseudo-Anosov flows and sutured Floer homology"
18 May 2024	St. Louis Topology Conference, "Pseudo-Anosov flows, finite depth foliations, and veering branched surfaces"

Selected conferences and workshops

13-14 Nov 2025	*Speaker*, 2K-GATE Workshop II, Korea Advanced Institute of Science and Technology
18-29 Aug 2025	*Speaker*, Low dimensional topology and Floer theory, Centre de Recherches Mathématiques
2-6 Jun 2025	*Participant*, LG&TBQ2: geometry, topology, and dynamics, Centre de Recherches Mathématiques
19-30 May 2025	*Speaker*, 2025 Georgia International Topology Conference
12-18 Jan 2025	*Organizer*, Log cabin workshop 2025, St. George, Utah
17-19 May 2024	*Speaker*, St. Louis Topology Conference, Washington University in St. Louis

Service

- Refereed for journals such as *Geometry and Topology*, *Groups, Geometry, and Dynamics*, *Journal of Differential Geometry*, *L'Enseignement Mathématique*, *Mathematische Annalen*, and *Memoirs of the AMS*.

- Organized the Log Cabin Workshop 2025 with Siddhi Krishna and Jonathan Zung.

- Organized the student 3-manifold seminar at UC Berkeley between 2021 and 2023.

Supervising

Feb-Jul 2025	Clément Perault Predoctoral esearch Internship, UQAM
May-Aug 2024	Xiangzhuo Zeng Undergraduate Research Internship, UQAM

Teaching

Fall 2024	*Instructor*, MAT993F: Représentations $SL(2,\mathbb{C})$ et la géométrie hyperbolique en dimension 3, UQAM
Winter 2024	*Instructor*, MAT993V: Homéomorphismes pseudo-Anosov des surfaces, UQAM
Spring 2023	*Graduate student instructor*, Math 113 Introduction to Abstract Algebra, UC Berkeley
Spring 2022	*Graduate student instructor*, Math 55 Discrete Mathematics, UC Berkeley
Fall 2021	*Graduate student instructor*, Math 16A Analytic Geometry and Calculus, UC Berkeley
Spring 2021	*Graduate student instructor*, Math 54 Linear Algebra and Differential Equations, UC Berkeley