

# Chi Cheuk Tsang

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## Employment

- 2026 - Tongji University  
Distinguished Researcher
- 2026 Simons Laufer Mathematical Sciences Institute  
McDuff Endowed Postdoctoral Fellow
- 2023 - 2025 Université du Québec à Montréal  
CRM 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

18. Thomas Barthelmé, Chi Cheuk Tsang, and Jonathan Zung. “Finiteness of pseudo-Anosov flows without perfect fits”. *Preprint available upon request*.
17. Chi Cheuk Tsang. “Legendrian position of veering triangulations”. *Preprint* (2026). arXiv:2604.06690.
16. Chi Cheuk Tsang. “From pseudo-Anosov flows on graph manifolds to totally periodic flows”. *Preprint* (2026). arXiv:2603.27362.
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*, **29** (2025), no. 9, 4531–4663. doi:10.2140/gt.2025.29.4531.
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

- 6 Apr 2026 SLMath Pseudo-Anosov flow seminar, “From sutured hierarchies to pseudo-Anosov flows: Gluing step”
- 11 Feb 2026 SLMath Topological and Geometric Structures in Low Dimensions program seminar, “Finiteness of pseudo-Anosov flows with no perfect fits”
- 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

- 23-27 Mar 2026 *Participant*, Recent Progress in Topological and Geometric Structures in Low Dimensions, Simons Laufer Mathematical Sciences Institute
- 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.

## Supervising

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

## Teaching

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