Caleb Suan Kai Wen (孙凯文) **Curriculum Vitae**

CONTACT INFORMATION

- Email: *kwsuan@math.cuhk.edu.hk*, *calebkaiwensuan@cuhk.edu.hk*
- Personal Website: *https://calebsuan.github.io*

RESEARCH INTERESTS

Geometric analysis; Geometric flows (G_2 Laplacian Flow/ Coflow, Anomaly Flow, (Generalized) Ricci Flow); Manifolds with special/ exceptional holonomy ($\mathrm{SU}(3)$, G_2, $\mathrm{Spin}(7)$); Conifold Transitions; Hull–Strominger system.

EMPLOYMENT

The Chinese University of Hong Kong, Shatin, NT, Hong Kong SAR

Postdoctoral Fellow Aug 2025 - Present

- Supervisor: Lee Man-Chun

EDUCATION

The University of British Columbia, Vancouver, BC, Canada

PhD, Mathematics Sep 2021 - Apr 2025

- Thesis: *Deformations of Special Structures in Dimensions* 6 *and* 7
- Supervisor: Sébastien Picard

University of Waterloo, Waterloo, ON, Canada

MMath, Pure Mathematics, Jan 2020 - Dec 2020

- Thesis: *Differential Operators on Manifolds with G_2-Structure*
- Supervisor: Spiro Karigiannis

BMath, Pure Mathematics/ Combinatorics and Optimization, Sep 2013 - Dec 2019

- Honors, Co-operative Program, with Distinction, Dean's Honours List

PREPRINTS AND PUBLICATIONS

[1] Spiro Karigiannis, Sébastien Picard, and Caleb Suan
"Flows of Conformally Coclosed G_2-Structures with Dilaton",
preprint, arXiv:2511.21055

[2] Caleb Suan
"Anomaly Flow: Shi-Type Estimates and Long-time Existence",
Journal für die reine und angewandte Mathematik 2025 (2025), No, 826, 303-377,
arXiv:2408.15514

[3] Henrique N. Sá Earp, Julieth Saavedra, and Caleb Suan
"Laplacian Coflows of G_2-Structures on Contact Calabi–Yau 7-Manifolds",
Mathematische Zeitschrift 311 (2025), No. 2, Paper No. 27,
arXiv:2406.15254

[4] Benjamin Friedman, Sébastien Picard, and Caleb Suan
"Gromov–Hausdorff Continuity of Non-Kähler Calabi–Yau Conifold Transitions",
to appear in Compositio Mathematica,
arXiv:2404.11840

[5] Sébastien Picard and Caleb Suan
"Flows of G_2-Structures associated to Calabi–Yau Manifolds",
Mathematical Resesarch Letters 31 (2024) No. 6, 1837-1877,
arXiv:2209.03411

Invited Talks

- Hong Kong Univeristy of Science and Technology Pure Mathematics Seminar (Oct 2025)
  "Conifold Transitions and the Anomaly Flow"
- Mathematics Inspired by String Theory Conference and Lecture Series (Oct 2025)
  "Conifold Transitions and the Anomaly Flow"
- Mathematical Congress of the Americas Special Session: Special Geometries and Gauge Theory (Jul 2025)
  "Conifold Transitions and the Anomaly Flow"
- University of British Columbia Mathematics Colloquium (Mar 2025)
  "Deformations of Special Structures in Dimensions 6 and 7"
- Universität Hamburg Differential Geometry Research Seminar (Jan 2025)
  "Conifold Transitions and the Anomaly Flow"
- Rutgers – Newark Mathematics Colloquium (Nov 2024)
  "Long-time Existence of the Anomaly Flow"
- CRM Workshop: Special Riemannian Geometries in Dimensions 6, 7, 8 (Apr 2024)
  "Gromov–Hausdorff Continuity of Non-Kähler Calabi–Yau 3-Folds"
- UC Irvine Generalized Ricci Flow Learning Seminar (Dec 2023)
  "Flows of G_2 Structures associated to Calabi–Yau Manifolds"
- BIRS Workshop: Spinorial and Octonionic Aspects of G_2 and Spin(7) Geometry (May 2023)
  "Flows of G_2 Structures associated to Calabi–Yau Manifolds"

Teaching

The Chinese University of Hong Kong, Shatin, NT, Hong Kong SAR

Instructor — Aug 2025 - Present

- MATH2020A: Advanced Calculus II (2025/26 Term 1)

The University of British Columbia, Vancouver, BC, Canada

Small Class/ Workshop Instructor — Sep 2021 - Apr 2025

- MATH 100: Differential Calculus with Applications to Physical Sciences and Engineering (2024 Winter Term II)
- MATH 180: Differential Calculus with Physical Applications (2024 Winter Term I)
- MATH 180: Differential Calculus with Physical Applications (2023 Winter Term I)
- MATH 190: Calculus Survey (2022 Winter Term I)

Teaching Assistant — Sep 2021 - Apr 2025

- MATH 264: Vector Calculus for Electrical Engineering (2023 Winter Term II)
- MATH 220: Mathematical Proof (2022 Winter Term II)
- MATH 421: Real Analysis II (2021 Winter Term II)
- MATH 223: Linear Algebra (2021 Winter Term I)

University of Waterloo, Waterloo, ON, Canada

Teaching Assistant — Jan 2020 - Dec 2020

- PMATH 465: Geometry of Manifolds (Fall 2020)
- MATH 147: Calculus 1 (Advanced Level) (Fall 2020)
- PMATH 352: Complex Analysis (Spring 2020)
- PMATH 365: Differential Geometry (Winter 2020)
- MATH 136: Linear Algebra 1 for Honours Mathematics (Winter 2020)

Undergraduate Tutor — Sep 2016 - Dec 2016

- MATH 137: Calculus 1 for Honours Mathematics (Fall 2016)

Other Research

University of Waterloo, Waterloo, ON, Canada

NSERC Undergraduate Research Assistant May 2019 - Aug 2019

- Project: *The Almost Invariant Subspace Problem*
- Supervisor: Laurent Marcoux

NSERC Undergraduate Research Assistant May 2018 - Aug 2018

- Project: *Vortex Solutions on Riemann Surfaces from Hyperbolic Tessellations*
- Supervisor: Benoit Charbonneau

Awards and Scholarships

Stanley M. Grant Scholarship in Mathematics 2024

University of British Columbia

Four Year Doctoral Fellowship 2021

University of British Columbia

President's Academic Excellence Award 2021

University of British Columbia

NSERC Alexander Graham Bell Canada Graduate Scholarship – Masters 2021

University of Waterloo

President's Graduate Scholarship 2021

University of Waterloo

Outstanding Teaching Assistant Award 2020

University of Waterloo

NSERC Undergraduate Student Research Award 2020

University of Waterloo

NSERC Undergraduate Student Research Award 2019

University of Waterloo

University of Waterloo 50th Anniversary Scholarship 2018

University of Waterloo

Faculty of Mathematics Scholarship 2014

University of Waterloo

University of Waterloo President's Scholarship 2014

University of Waterloo

Service

University of British Columbia Differential Geometry Learning Seminar

Organizer Sep 2024 - Apr 2025

Co-organizer Jan 2024 - Aug 2024

Journal Referee

Mathematische Zeitschrift