

Chung-Ming PAN

Curriculum Vitae

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Citizenship: Taiwan

Employment

- 01/2025–present **Postdoc**, *Centre interuniversitaire de recherches en géométrie et topologie – CIRGET, Université du Québec à Montréal*, Montréal, Québec, Canada
Mentor: Vestislav APOSTOLOV
- 08–12/2024 **Postdoc SLMath**, *Simons Laufer Mathematical Sciences Institute (SLMath, formerly MSRI)*, Program: *Special Geometric Structures and Analysis*, Berkeley, California, USA
Mentor: Song SUN
- 2023–2024 **ATER (one-year postdoc with teaching duties)**, *Institut de Mathématiques de Toulouse, Université Toulouse III - Paul Sabatier (now Université de Toulouse)*, Toulouse, France

Education

- 2020–2023 **Ph.D.**, *Institut de Mathématiques de Toulouse, Université Toulouse III - Paul Sabatier (now Université de Toulouse)*, Toulouse, France
Supervisors: Vincent GUEDJ and Henri GUENANCIA
Thesis: *Familles de métriques hermitiennes canoniques* (defended on June 19, 2023)
- 2019–2020 **Master 2**, *Université Toulouse III - Paul Sabatier (now Université de Toulouse)*, Toulouse, France
Advisor: Vincent GUEDJ, M2 thesis: Regularity of geodesics in the space of Kähler metrics
- 2018–2019 **Research assistant**, *NCTS and Institute of Mathematics, Academia Sinica*, Taipei, Taiwan
Advisors: Chin-Yu HSIAO and Chung-Jun TSAI
- 2015–2018 **M.Sc.**, *National Taiwan University, Department of Mathematics*, Taipei, Taiwan
Advisor: Chung-Jun TSAI, Master thesis: Chern–Ricci flow on complex manifolds
- 2011–2015 **B.Sc.**, *National Taiwan University, Department of Mathematics*, Taipei, Taiwan

Research interests

Complex Geometry, Differential Geometry, and Pluripotential Theory

Specific topics:

- canonical Kähler metrics (e.g. Kähler–Einstein metrics, cscK metrics),
- special hermitian metrics (e.g. Gauduchon metrics, Hermite–Einstein metrics),
- complex Monge–Ampère equations/operators,
- plurisubharmonic functions, positive currents

Publications and preprints

- [8] **A note on orbifold regularity of canonical metrics (with H. Guenancia and M. Păun)**, *Submitted*.
eprint: [arXiv:2509.09259](https://arxiv.org/abs/2509.09259)
- [7] **Gauduchon metrics and Hermite–Einstein metrics on non-Kähler varieties**, *Submitted*.
eprint: [arXiv:2503.02759](https://arxiv.org/abs/2503.02759)
- [6] **Weighted cscK metrics on Kähler varieties (with T. D. Tô)**, *Submitted*.
eprint: [arXiv:2412.07968](https://arxiv.org/abs/2412.07968)
- [5] **Demailly–Lelong numbers on complex spaces**, *Mathematische Zeitschrift*, 309 (2025), no. 1, Paper No. 4, 17 pp.
eprint: [arXiv:2403.08620](https://arxiv.org/abs/2403.08620) / [journal version](#)

- [4] **Singular cscK metrics on smoothable varieties (with T. D. Tô and A. Trusiani)**, *Submitted*.
eprint: [arXiv:2312.13653](https://arxiv.org/abs/2312.13653)
- [3] **Kähler–Einstein metrics on families of Fano varieties (with A. Trusiani)**, *Journal für die reine und angewandte Mathematik (Crelle's Journal)*, 817 (2025), 45–87.
eprint: [arXiv:2304.08155](https://arxiv.org/abs/2304.08155) / [journal version](#)
See also [Oberwolfach Report No. 29/2023](#), Workshop "Differentialgeometrie im Großen"
- [2] **Families of singular Chern–Ricci flat metrics**, *The Journal of Geometric Analysis*, 33 (2023), no. 2, Paper No. 66, 32 pp.
eprint: [arXiv:2112.08993](https://arxiv.org/abs/2112.08993) / [journal version](#)
- [1] **Singular Gauduchon metrics**, *Compositio Mathematica*, 158 (2022), no. 6, 1314–1328.
eprint: [arXiv:2106.06259](https://arxiv.org/abs/2106.06259) / [journal version](#)

Research talks

- October 2025 **Orbifold regularity of singular Calabi–Yau metrics**, *Geometric Analysis Seminar*, McGill University, Montréal
- September 2025 **Pluripotential theory in families and canonical Kähler metrics**, *Workshop on "Singular canonical Kähler metrics on compact and non-compact manifolds"*, Rényi Institute of Mathematics, Budapest.
- June 2025 **Canonical metric problem for singular vector bundles on non-Kähler spaces**, *Differential Geometry Seminar*, NCTS, Taipei.
- May 2025 **Gauduchon metrics and Hermite–Einstein metrics on non-Kähler varieties**, *Conference on "Complex Hermitian Geometry"*, Université d'Angers, LAREMA, Angers.
- May 2025 **Gauduchon metrics and Hermite–Einstein metrics on non-Kähler varieties**, *KASS seminar*, Chalmers University of Technology, Göteborg.
- March 2025 **Pluripotential theory in families, stability of coercivity, and singular cscK metrics**, *Workshop on "Birational geometry and K-stability in moduli spaces"*, CIRGET, UQAM, Montréal.
- January 2025 **Singular Gauduchon metrics and Hermite–Einstein problem on non-Kähler varieties**, *Séminaire de géométrie et topologie*, CIRGET, UQAM, Montréal
- October 2024 **Singular cscK metrics on smoothable varieties**, *Special Geometric Structure and Analysis Seminar*, SLMath (formerly MSRI), Berkeley.
- April 2024 **Singular cscK metrics on smoothable varieties**, *Workshop Parapuli 2024*, LAREMA, Angers.
- March 2024 **Singular cscK metrics on smoothable varieties**, *Séminaire "Analyse complexe et équations différentielles"*, Laboratoire Paul Painlevé, Lille.
- February 2024 **Singular cscK metrics on smoothable varieties**, *Geometry and Geometric Analysis Seminar*, Purdue University (online).
- February 2024 **Demailly–Lelong numbers on complex spaces**, *Groupe de Travail Komplex*, IMT, Toulouse.
- December 2023 **Singular cscK metrics on smoothable varieties**, *Differential Geometry Seminar*, NCTS, Taipei.
- December 2023 **Kähler–Einstein metrics on families of Fano varieties**, *2023 Taipei Conference on Complex Geometry*, AS, Taipei.
- November 2023 **Canonical metrics and pluripotential theory along degenerate families**, *Séminaire d'Analyse et Géométrie*, IMJ-PRG, Paris.
- November 2023 **Canonical metrics and pluripotential theory along degenerate families**, Aarhus University, Denmark.
- August 2023 **Kähler–Einstein metrics on families of Fano varieties**, *Seminar semiklassische Analysis und Darstellungstheorie*, Universität zu Köln.
- July 2023 **Kähler–Einstein metrics on families of Fano varieties (short talk)**, *Oberwolfach workshop "Differentialgeometrie im Grossen"*, MFO, Oberwolfach.
- June 2023 **Kähler–Einstein metrics on families of Fano varieties**, *Summer School and Workshop "Advances in special Kähler metrics"*, Le Domaine de Port aux Rocs, Le Croisic.

- June 2023 **Kähler–Einstein metrics on families of Fano varieties (short talk)**, *Conference "Alpine meeting on nonpositive curvature in Kähler geometry"*, Centre Paul-Langevin, Aussois.
- April 2023 **Kähler–Einstein metrics on families of Fano varieties**, *Algebraic Geometry in String Theory Seminar*, CMSA, Harvard University.
- March 2023 **Kähler–Einstein metrics on families of K-stable Fano varieties**, *Groupe de Travail Komplex*, IMT, Toulouse.
- November 2022 **Singular Gauduchon metrics (short talk)**, *Conference "Algebraic Geometry and Complex Geometry"*, CIRM, Marseille.
- November 2022 **Families of degenerate complex Monge–Ampère equations**, *Informal Geometric Analysis Seminar*, UMD, Maryland (online).
- November 2022 **Families of degenerate complex Monge–Ampère equations**, *Informal working group*, IMT, Toulouse.
- September 2022 **Singular Gauduchon metrics**, *Séminaire de Géométrie Complexe*, IMT, Toulouse.
- August 2022 **Singular Gauduchon metrics**, *Differential Geometry Seminar*, NCTS, Taipei.
- July 2022 **Singular Gauduchon metrics**, *Seminar on Several Complex Variables*, AS, Taipei.
- December 2021 **Singular Gauduchon metrics**, *Séminaire Analyse Harmonique*, LMO, Orsay.
- May 2021 **Gauduchon metrics on compact complex varieties**, *Workshop on "Pluripotential theory on non-Kähler manifolds"*, IMT, Toulouse.

Teaching experience

Instructor at Université du Québec à Montréal

- Fall 2025 Techniques transcendantes et géométrie de Kähler

Summer school TA at Rényi Institute of Mathematics

- August 4-8, 2025 Geodesics in the space of Kähler potentials, Summer school I: Invitation to complex geometry, instructor: Eleonora Di Nezza

Travaux dirigés (exercise sessions) at Université Toulouse III - Paul Sabatier

- Spring 2024 Fonctions et calculs 1, Math1-Calc1 (in French), group: A2, instructor: François Berteloot
- Spring 2024 Fonctions et calculs 1, Math1-Calc1 (in French), group: B4, instructor: Serge Cohen
- Spring 2024 TP d'Algèbre linéaire 1, Math1-alglin1 (in French), group: B32, instructor: Joost Nuiten
- Fall 2023 Fonctions et calculs 1, Math1-Calc1 (in French), group: A4, instructor: Laurent Bakri
- Fall 2023 Fonctions et calculs 1, Math1-Calc1 (in French), group: B3, instructor: Jawher El Goul
- Fall 2022 Complex analytic and differential geometry (in English), instructor: Vincent Guedj
- Fall 2022 Fonctions et calculs 1, Math1-Calc1 (in French), group: C6, instructor: Serge Cohen
- Fall 2021 Complex analytic and differential geometry (in English), instructor: Vincent Guedj

Exercise sessions at National Taiwan University

- Spring 2017 Differential geometry (II), instructor: Ziming Ma
- Fall 2016 Differential geometry (I), instructor: Ziming Ma
- Spring 2016 Calculus (II) (Math major), instructor: Chen-Yu Chi
- Fall 2015 Calculus (I) (Math major), instructor: Chen-Yu Chi

Organization of scientific activities

- May 27-29 2025 **Vaisman & Locally Conformally Kähler Geometry**, *Geometry & TACoS online conference (eleventh session)*
- Winter 2025 **GdT Complexe CIRGET**, *Complex geometry working group at CIRGET, UQAM*

Visiting

- 06/01-07/04 2025 **NCTS (Taipei, Taiwan)**, *visiting Chung-Jun Tsai.*

05/11-05/17 2025 **Chalmers University of Technology (Göteborg, Sweden)**, visiting Lars Sektnan and David Witt Nyström.
12/09-12/21 2023 **Academia Sinica (Taipei, Taiwan)**, visiting Chin-Yu Hsiao.
10/30-11/03 2023 **Aarhus University (Aarhus, Denmark)**, visiting Alexandra Otiman.
03/26-04/08 2023 **MIT (Boston, US)**, visiting Tristan C. Collins.

Languages

Taiwanese (native), Chinese (native), English (fluent), French (intermediate)

Miscellaneous

Journals Referee for *Advances in Mathematics*, *Annales de l'Institut Fourier*, *Compositio Mathematica*, *Journal of Differential Geometry*, *Mathematische Annalen*, *Transactions of the American Mathematical Society*
Responsibility Reporter of Oberwolfach workshop No. 29/2023 "Differentialgeometrie im Großen"