

Tsung-Hsuan TSAI

Birth: 13 April 1996

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RESEARCH INTEREST

• Random groups • Geometric group theory • Small cancellation theory

RESEARCH EXPERIENCE

- 2019 - 2022 **Institut de Recherche Mathématique Avancée, Strasbourg, France**
Ph.D. in Mathematics, supervised by Thomas Delzant
Thesis: *Phase transitions in random group: free subgroups and van Kampen 2-complexes*
- 2019.05 - 06 **Institut de Recherche Mathématique Avancée, Strasbourg, France**
Research internship M2, supervised by Thomas Delzant
Subject: *Random groups: the binomial triangular model*
- 2018.06 - 07 **Université de Padova, Padova, Italie**
Research internship M1, supervised by Remke Kloosterman
Subject: *Fundamental groups of complements of singular algebraic curves*
- 2017.05 - 06 **Laboratoire de Mathématiques Jean-Leray, Nantes, France**
Research internship L3, supervised by François Laudenbach
Subject: *Algebraic topology and applications: Schreier Theorem and Poincaré paving*

EDUCATION

- 2019 - 2022 **Université de Strasbourg, France**
Ph.D. in Mathematics, supervised by Thomas Delzant
- 2016 - 2019 **École normale supérieure de Rennes, France**
Normalien à titre étranger
M.Sc. in Mathematics at Université de Rennes 1, 2019
B.Sc. in Informatics at Université de Rennes 1, 2018
B.Sc. in Mathematics at Université de Rennes 1, 2017
- 2014 - 2016 **Lycée Janson de Sailly, Paris, France**
Classe préparatoire aux grandes écoles, MPSI and MP

TEACHING

- 2019 - 2022 **Université de Strasbourg, France**
Teaching assistant
2019,2020,2021 autumn: TD Algèbre S5 (exercise sessions of the course Introduction to group theory for 3rd year).
2020,2021,2022 spring: CI Math pour les sciences 2 (lecturer of the course Basic linear algebra for 1st year).

PUBLICATIONS AND PREPRINTS

- 2021 T.-H. Tsai, *Density of random subsets and the intersection formula*.
Preprint arxiv: 2104.09192,
to be appeared in the *Journal of Combinatorial Algebra*,
DOI: 10.4171/JCA/63.
- 2021 T.-H. Tsai, *Freiheitssatz and phase transitions for the density model of random groups*.
Preprint arxiv: 2111.08958.

TALKS

- 2021.12.17 **Topology seminar, Institut Fourier, Grenoble, France.**
Freiheitssatz for the density model of random groups.
- 2021.12.14 **ENS Group theory seminar, Paris, France (Online).**
Freiheitssatz for the density model of random groups.
- 2021.12.06 **SErgodic theory seminar, IRMAR, Rennes, France.**
Freiheitssatz for the density model of random groups.
- 2021.09 **Séminaire Doctorant, IRMA, Strasbourg, France.**
Groupes à petite simplification et un théorème de non-torsion.
- 2020.10 **Séminaire Doctorant, IRMA, Strasbourg, France.**
La plupart des groupes sont hyperboliques.
- 2020.02 **Séminaire Doctorant, IRMA, Strasbourg, France.**
Ensembles aléatoires : définitions et applications à théorie des groupes.

LANGUAGES

- English • French • Mandarin • Taiwanese