

# Yuezhao Li

PhD candidate in mathematics, Universiteit Leiden

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## Summary

I am a PhD candidate in mathematics at Leiden university, supervised by [Dr. Bram Mesland](#). My research focuses on noncommutative geometry and its applications in mathematical physics and index theory.

## Education

- ◇ **Universiteit Leiden**, October 2021 — September 2025 (expected), Netherlands.
  - PhD candidate in mathematics.
  - Supervisor: Dr. Bram Mesland.
- ◇ **Georg-August-Universität Göttingen**, October 2018 — August 2021, Germany.
  - Master in mathematics, with minor in physics.
  - Thesis: Invariants for topological insulators coming from decompositions of coarse spaces.
  - Thesis advisor: Prof. Dr. Ralf Meyer.
- ◇ **Peking University**, September 2013 — July 2018, China.
  - Bachelor in physics, with minor in mathematics.

## Research interest

- ◇ Index theory of spectral truncations via bivariant K-theories.
- ◇ Mathematics of topological insulators, via groupoids and coarse geometry.
- ◇ Unbounded KK-theory and its applications to index theory.

## Teachings

- ◇ **2024 fall**: Functional analysis, teaching assistant.
- ◇ **2024 spring**: Operator algebras, teaching assistant.
- ◇ **2023 fall**: Functional analysis, teaching assistant.
- ◇ **2023 spring**: Differentiable manifolds II, teaching assistant.
- ◇ **2022 fall**: Functional analysis, teaching assistant.
- ◇ **2022 spring**: Differentiable manifolds II, teaching assistant.
- ◇ **2021 fall**: Functional analysis, teaching assistant.

## Conferences, workshops and seminars

### Participation

- ◇ **October 2024**: Workshop “Noncommutativity behind the dunes”, Delft, Netherlands.
- ◇ **August 2024**: Workshop “OdenSeaG 2024”, Odense, Denmark.
- ◇ **May 2024**: Leiden-Birmingham meeting, Leiden, Netherlands. Give a talk “A hitchhiker’s guide to topological insulators in noncommutative geometry”.
- ◇ **April 2024**: Conference “Group operator algebras and noncommutative geometry”, Marseille, France.

- ◇ **November 2023:** Leiden-Luxembourg PhD Away Day, Leiden, Netherlands. Give a talk “Noncommutative geometry in index theory and physics”.
- ◇ **October 2023:** Autumn school on large-scale geometry, Göttingen, Germany. Give a lightning talk “[Models of aperiodic topological insulators](#)”.
- ◇ **May 2023:** Hausdorff School “Noncommutative Geometry and Operator Algebras” and Workshop “NSeaG 2023”, Bonn, Germany. Assist with taking notes for the lectures “Unbounded KK-theory and spectral triples” and “Baum–Connes conjecture”.

## Organisation

- ◇ **January 2023:** Co-organiser of conference [5th Conference of Settat on Operator Algebras and Applications](#), with Francesca Arici, Marcel de Jeu, Rachid El Harti and Dimitris Gerontogiannis.
- ◇ I am an organiser of several [Leiden local NCG seminars](#).

## Research visits

- ◇ **January 2025:** Uni Greifswald, Germany. Visit Prof. Matthias Ludewig. Invited talk at Forschungsseminar Algebra/Geometrie/Topologie. Title: “Understanding strong and weak topological phases”.
- ◇ **October 2024:** Peking University, China. Visit Dr. Guo Chuan Thiang.
- ◇ **September 2024:** East China Normal University, China. Visit Prof. Hang Wang. Give a talk “Index theory of spectral truncations and localisation algebras”.
- ◇ **September 2024:** Sichuan University, China. Visit Dr. Xingni Jiang and Dr. Yunfeng Shi. Give a talk “Noncommutative geometry in the integer quantum Hall effect”.

## Other skills

- ◇ Languages: English (fluent), Mandarin Chinese (mother tongue), German (basic), Dutch (beginner).
- ◇ Programming skills: Python, C, C++.