YUEZHAO LI

🔗 liyuezhao.github.io   ✉ y.li@math.leidenuniv.nl

🏠 Einsteinweg 55, 2333 CC Leiden, Netherlands

PERSONALITY

Nationality	Chinese
Date of birth	18.04.1996
Languages	Chinese (Native), English (C1), German (B1), Dutch (A1)

RESEARCH INTEREST

- ◇ Noncommutative geometry of topological insulators via groupoids and coarse geometry.
- ◇ Spectral truncation method in index pairing and bivariant K-theory.
- ◇ Unbounded Kasparov theory and its application to index theory.

EMPLOYMENT

Max-Planck-Institut für Mathematik   Mar 2026 — Aug 2026
Postdoctoral researcher   *Germany*
- ◇ Supervisor: Prof. Dr. Matthias Lesch.

Peking University   Starting Sep 2026
Postdoctoral researcher   *China*
- ◇ Supervisor: Dr. Guo Chuan Thiang.

EDUCATION

Universiteit Leiden   Oct 2021 — Feb 2026
PhD candidate in mathematics   *The Netherlands*
- ◇ Supervisor: Dr. Bram Mesland.
- ◇ Thesis: *Spectral localisers and aperiodic topological phases in noncommutative geometry.*

Georg-August-Universität Göttingen   Oct 2018 — Aug 2021
Master in mathematics, with minor in physics   *Germany*
- ◇ Thesis advisor: Prof. Dr. Ralf Meyer.
- ◇ Thesis: *Invariants for topological insulators coming from decompositions of coarse spaces.*

Peking University   Sep 2013 — Jul 2018
Bachelor in physics, with minor in mathematics   *China*
- ◇ Thesis advisor: Prof. Dr. Limei Xu.
- ◇ Thesis: *Phase transition and critical phenomena.*

PUBLICATIONS

Articles in press

[1] Y. Li and B. Mesland. *The odd spectral localiser via asymptotic morphisms and quasi-projections* (2025). arXiv: 2506.17143. To appear in Ann. K-Theory.

[2] Y. Li. *Robustness of topological phases on aperiodic lattices* (2025). arXiv: 2504.04817. To appear in Math. Phys. Anal. Geom.

In preparation

[3] Y. Li and G. C. Thiang. *Symmetry-breaking topological phases* (2026). In preparation.

Thesis

[4] Y. Li. *Spectral localisers and aperiodic topological phases in noncommutative geometry*. Doctoral thesis. Leiden University, 2025.

[5] Y. Li. *Invariants of topological insulators from decomposition of coarse spaces*. Master thesis. Georg-August-Universität Göttingen, 2021.

TALKS

Research talks

- DECEMBER 2025: *The spectral localiser via* E-*theory*.
  NCG Colloquim II. Nijmegen, Netherlands.
- NOVEMBER 2025: *The spectral localiser via* E-*theory*.
  Oberseminar Global Analysis and Operator Algebras. Max-Planck-Institut für Mathematik, Bonn, Germany.
- AUGUST 2025: *On topological phases of aperiodic matter*.
  NCG Day. Leiden, Netherlands.
- JULY 2025: *The spectral localiser via* E-*theory*.
  Oberseminar Analysis. Leibniz Universität Hannover, Germany.
- JULY 2025: *The comparison maps between groupoid and Roe* C*-*algebras from aperiodic topological insulators*.
  Oberseminar Noncommutative Geometry. Georg-August-Universität Göttingen, Germany.
- JUNE 2025: *The spectral localiser via* E-*theory*.
  C*-algebras, Coarse Geometry and Physics. Greifswald, Germany.
- APRIL 2025: *On robustness of topological phases* (short talk).
  Applications of Noncommutative Geometry to Gauge Theories, Field Theories, and Quantum Space-time. Marseille, France.
- MARCH 2025: *On robustness of topological phases of matter*.
  Seminar in Analysis and Applications. Delft University of Technology, Netherlands.
- JANUARY 2025: *Understanding strong and weak topological phases*.
  Forschungsseminar Algebra/Geometrie/Topologie. Universität Greifswald, Germany.
- SEPTEMBER 2024: *Index theory of spectral truncations and the localisation algebra*.
  East China Normal University, Shanghai, China.
- OCTOBER 2023: *Models of aperiodic topological insulators* (short talk).
  Autumn School on Large-scale Geometry. Göttingen, Germany.

Colloquium talks

- SEPTEMBER 2024: *Noncommutative geometry of integer quantum Hall effect*.
  Sichuan University, Chengdu, China.
- MAY 2024: *A hitchhiker's guide to topological insulators in noncommutative geometry*.
  Leiden-Birmingham meeting, Leiden, Netherlands.
- NOVEMBER 2023: *Noncommutative geometry in index theory and physics*.
  Leiden-Luxembourg PhD Away Day. Leiden, Netherlands.

CONFERENCES, WORKSHOPS AND SEMINARS

Participation

- AUGUST 2025: NCG Day. Leiden, Netherlands.
- JUNE 2025: C*-algebras, Coarse Geometry and Physics. Greifswald, Germany.

- ⋄ APRIL 2025: Applications of Noncommutative Geometry to Gauge Theories, Field Theories, and Quantum Space-time. Marseille, France.
- ⋄ OCTOBER 2024: Noncommutativity behind the Dunes. Delft, Netherlands.
- ⋄ AUGUST 2024: OdenSeaG 2024. Odense, Denmark.
- ⋄ MAY 2024: Leiden-Birmingham meeting. Leiden, Netherlands.
- ⋄ APRIL 2024: Group Operator Algebras and Noncommutative Geometry. Marseille, France.
- ⋄ NOVEMBER 2023: Leiden-Luxembourg PhD Away Day. Leiden, Netherlands.
- ⋄ OCTOBER 2023: Autumn School on Large-scale Geometry. Göttingen, Germany.
- ⋄ AUGUST 2023: YMC*A. Leuven, Belgium.
- ⋄ MAY 2023: Noncommutative Geometry and Operator Algebras (NSeaG 2023). Bonn, Germany.
- ⋄ MARCH 2023: Noncommutative Geometry and Representation Theory. Athens, Greece.
- ⋄ MARCH 2022: Noncommutativity in the North. Gothenburg, Sweden.
- ⋄ FEBRUARY 2022: Winter School on Foliations, Pseudodifferential Operators and Groupoids. Göttingen, Germany.

Organisation

- ⋄ JANUARY 2023: 5th Conference of Settat on Operator Algebras and Applications.
  Co-organiser, with Francesca Arici, Marcel de Jeu, Rachid El Harti and Dimitris Gerontogiannis.
- ⋄ I organised several Leiden local NCG seminars and took notes for them.
  - – SPRING 2022: KK-theory (Notes).
  - – FALL 2022: Groupoid C*-algebras (Notes).
  - – FALL 2023: Noncommutative geometry of foliations (Notes).

RESEARCH VISITS

- ⋄ DECEMBER 2025: Oberwolfach, Germany. Hosted by Dr. Jialong Deng.
- ⋄ NOVEMBER 2025: Max Planck Institute for Mathematics, Germany. Hosted by Dr. Malte Leimbach.
- ⋄ JULY 2025: Leibniz Universität Hannover, Germany. Hosted by Dr. Eske Ewert.
- ⋄ JULY 2025: Georg-August-Universität Göttingen, Germany. Hosted by Prof. Dr. Ralf Meyer.
- ⋄ JANUARY 2025: Universität Greifswald, Germany. Hosted by Prof. Dr. Matthias Ludewig.
- ⋄ OCTOBER 2024: Peking University, China. Hosted by Dr. Guo Chuan Thiang.
- ⋄ SEPTEMBER 2024: East China Normal University, China. Hosted by Prof. Dr. Hang Wang.
- ⋄ SEPTEMBER 2024: Sichuan University, China. Hosted by Dr. Xingni Jiang and Dr. Yunfeng Shi.

TEACHING EXPERIENCE

Universiteit Leiden

- ⋄ FALL 2024: Functional Analysis, Mastermath course. Teaching assistant.
- ⋄ SPRING 2024: Operator Algebras, Mastermath course. Teaching assistant.
- ⋄ FALL 2023: Functional Analysis, Mastermath course. Teaching assistant.
- ⋄ SPRING 2023: Differentiable Manifolds II, undergraduate course. Teaching assistant.
- ⋄ FALL 2022: Functional Analysis, Mastermath course. Teaching assistant.
- ⋄ SPRING 2022: Differentiable Manifolds II, undergraduate course. Teaching assistant.
- ⋄ FALL 2021: Functional Analysis, Mastermath course. Teaching assistant.