

# YUEZHAO LI

✉ [liyuezhaο.github.io](https://liyuezhaο.github.io)    ✉ [y.li@math.leidenuniv.nl](mailto:y.li@math.leidenuniv.nl)

🏡 Einsteinweg 55, 2333 CC Leiden, Netherlands

## PERSONALITY

---

<b>Nationality</b>	Chinese
<b>Date of birth</b>	18.04.1996
<b>Languages</b>	Chinese (Native), English (Fluent), German (Intermediate), Dutch (Beginner)

## EDUCATION

---

<b>Universiteit Leiden</b> <i>PhD candidate in mathematics</i>	Oct 2021 — Sep 2025 Netherlands
◊ Thesis: Spectral localisers and aperiodic topological phases in noncommutative geometry. ◊ Supervisor: Dr. Bram Mesland.	
<b>Georg-August-Universität Göttingen</b> <i>Master in mathematics, with minor in physics</i>	Oct 2018 — Aug 2021 Germany
◊ Thesis: Invariants for topological insulators coming from decompositions of coarse spaces. ◊ Thesis advisor: Prof. Dr. Ralf Meyer.	
<b>Peking University</b> <i>Bachelor in physics, with minor in mathematics</i>	Sep 2013 — Jul 2018 China
◊ Thesis: Phase transition and critical phenomena. ◊ Thesis advisor: Prof. Dr. Limei Xu.	

## RESEARCH

---

### Research interest

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

### Articles

- [1] Y. Li and B. Mesland. *The odd spectral localiser via asymptotic morphisms and quasi-projections* (2025). [arXiv: 2506.17143](https://arxiv.org/abs/2506.17143). To appear in *Ann. K-Theory*.
- [2] Y. Li. *Robustness of topological phases on aperiodic lattices* (2025). [arXiv: 2504.04817](https://arxiv.org/abs/2504.04817). Submitted.

### In preparation

- [3] Y. Li and G. C. Thiang. *Symmetry-breaking topological phases* (2025). In preparation.

### Thesis

- [4] Y. Li. *Spectral localisers and aperiodic topological phases in noncommutative geometry*. Submitted. Doctoral thesis. Leiden University, 2025.
- [5] Y. Li. *Invariants of topological insulators from decomposition of coarse spaces*. Master thesis. Georg-August-Universität Göttingen, 2021.

## TEACHING

---

- ◊ FALL 2024: Functional analysis, teaching assistant.
- ◊ SPRING 2024: Operator algebras, teaching assistant.
- ◊ FALL 2023: Functional analysis, teaching assistant.
- ◊ SPRING 2023: Differentiable manifolds II, teaching assistant.
- ◊ FALL 2022: Functional analysis, teaching assistant.
- ◊ SPRING 2022: Differentiable manifolds II, teaching assistant.
- ◊ FALL 2021: Functional analysis, teaching assistant.

## CONFERENCES, WORKSHOPS AND SEMINARS

---

### Participation

- ◊ AUGUST 2025: NCG Day, Leiden, Netherlands.  
TALK: *On topological phases of aperiodic matter*.
- ◊ JUNE 2025: C\*-algebras, coarse geometry and physics, Greifswald, Germany.  
TALK: *The spectral localiser via E-theory*.
- ◊ APRIL 2025: Applications of noncommutative geometry to gauge theories, field theories, and quantum space-time, Marseille, France.  
SHORT TALK: *On robustness of topological phases*.
- ◊ OCTOBER 2024: Noncommutativity behind the dunes, Delft, Netherlands.
- ◊ AUGUST 2024: OdenSeaG 2024, Odense, Denmark.
- ◊ MAY 2024: Leiden-Birmingham meeting, Leiden, Netherlands.  
TALK: *A hitchhiker's guide to topological insulators in noncommutative geometry*.
- ◊ APRIL 2024: Group operator algebras and noncommutative geometry, Marseille, France.
- ◊ NOVEMBER 2023: Leiden-Luxembourg PhD Away Day, Leiden, Netherlands.  
TALK: *Noncommutative geometry in index theory and physics*.
- ◊ OCTOBER 2023: Autumn school on large-scale geometry, Göttingen, Germany.  
SHORT TALK: *Models of aperiodic topological insulators*.
- ◊ MAY 2023: Noncommutative Geometry and Operator Algebras, NSeG 2023, Bonn, Germany.  
Assisted with note-taking of lectures on *Unbounded KK-theory* and *Baum–Connes conjecture*.

### 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

---

- ◊ NOVEMBER 2025: Max Planck Institute for Mathematics, Germany. Hosted by Dr. Malte Leimbach.  
TALK: *The spectral localiser via E-theory*.
- ◊ JULY 2025: Leibniz Universität Hannover, Germany. Hosted by Dr. Eske Ewert.  
TALK: *The spectral localiser via E-theory*.
- ◊ JANUARY 2025: Universität Greifswald, Germany. Hosted by Prof. Dr. Matthias Ludewig.  
TALK: *Understanding strong and weak topological phases*.
- ◊ OCTOBER 2024: BICMR, China. Hosted by Dr. Guo Chuan Thiang.
- ◊ SEPTEMBER 2024: East China Normal University, China. Hosted by Prof. Dr. Hang Wang.  
TALK: Index theory of spectral truncations and the localisation algebra.
- ◊ SEPTEMBER 2024: Sichuan University, China. Hosted by Dr. Xingni Jiang and Dr. Yunfeng Shi.