

CURRICULUM VITÆ | VALERIO PROIETTI

PERSONAL DETAILS

Born 4th May 1991 in Subiaco, Italy

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EDUCATION

- 2018 PhD in Mathematics at University of Copenhagen (Denmark). Title of the thesis: *K-theory, groups, and topological dynamics*. Adviser: Ryszard Nest.
- 2015 Master's Degree (*Laurea Magistrale*) in Mathematics at *Sapienza – Università di Roma*, Rome (Italy). Title of the thesis: *Quasi-crystals, aperiodic tilings, and gap labeling*. Adviser: Paolo Piazza.
- 2013 Bachelor's Degree (*Laurea*) in Mathematics at *Sapienza – Università di Roma*, Rome (Italy). Title of the thesis: *The invariant subspace problem* (in Italian). Adviser: Claudia Pinzari.

POSITIONS

- since 2023 *Marie Skłodowska-Curie* postdoc fellow at University of Oslo (Norway).
- 2022 Special appointed researcher at The University of Tokyo (Japan).
- 2019 Postdoctoral researcher at Research Center for Operator Algebras, East China Normal University, Shanghai.
- 2018 Postdoctoral researcher at *Max-Planck-Institut für Mathematik*, Bonn (Germany).

GRANTS & FELLOWSHIPS

- 2024 Visiting fellow (2 months) at East China Normal University, Shanghai.
- 2023 *Marie Skłodowska-Curie* Action (MSCA) – Individual Fellowship (European Commission – Horizon Europe Research and innovation funding programme, Host Institution: University of Oslo, Norway).
- 2022 FWO (Flanders – Research Foundation) Senior postdoctoral fellowship (3-year salaried position + 12000 EUR grant). *Declined in favor of MSCA fellowship*.
- 2021 Grant (70000 RMB) funded by the *Foreign Young Talents* program (National Natural Science Foundation of China).
- 2019 Postdoctoral *Leibniz fellowship* (3-month salaried position) at Oberwolfach Research Institute for Mathematics (Germany).
- 2018 Visiting fellow (1 month) at *Ochanomizu University*, Tokyo.
- 2017 Visiting fellow (5 months) at University of Victoria, British Columbia (Canada).
Grant (70000 DKK) for organization of International Masterclass, funded by the Centre for Symmetry and Deformation (Danish National Research Foundation) at University of Copenhagen.
- 2016 Visiting fellow at Simons semester program “Noncommutative Geometry the Next Generation” at Mathematical Institute of the Polish Academy of Sciences, Warsaw (Poland).

- 2015 *Erasmus+* scholarship (8 months) at *Université Paris-Sud* (Paris XI).
- 2014 Selected for the “Excellence program” (*Percorso d’eccellenza*) of the Department of Mathematical Sciences at *Sapienza – Università di Roma*.

SERVICE

- since 2024 Examiner in international expert panel for the Slovak Research and Development Agency (SRDA).
- since 2019 Referee reports and opinions for various journals in mathematics, e.g., *Communications in Mathematical Physics*, *Transactions of the American Mathematical Society*, *Annals of Functional Analysis*.
- since 2018 Reviewer for zbMATH Open.
- 2024 Internal examiner for PhD applications, University of Oslo.
- 2024 Co-organizer of the Operator algebras seminar, University of Oslo.
- 2022 Co-organizer of the Operator algebras seminar, East China Normal University.
- 2021 Co-organizer (and speaker) of the Special Week in Operator algebras (conference), East China Normal University.
- 2017 Co-organizer of the Operator algebras seminar, University of Copenhagen.
Main organizer of “Applications of the UCT for C^* -algebras” masterclass, University of Copenhagen.
Co-organizer of “YMC^{*}A” conference, University of Copenhagen.
- 2016 Co-organizer of the Operator algebras seminar, University of Copenhagen.
- 2015 Co-organizer of the PhD students’ seminar, University of Copenhagen.

TEACHING

- 2024 Preparation of MAT2000 projects (Bachelor’s course), University of Oslo.
- 2023 Lecture series: *K-theory and solid state physics* (Learning seminar), University of Oslo.
- 2022 Lecturer: *Introduction to Index theory* (Master’s and PhD students), East China Normal University, Shanghai.
- 2021 Lecturer: *Introduction to groupoids and KK-theory* (Master’s and PhD students), East China Normal University, Shanghai.
- 2020 Lecturer: *Introduction to K-theory and duality* (Master’s and PhD students), East China Normal University, Shanghai.
- 2018 Teaching assistant: *Introduction to K-theory* (Master’s course), University of Copenhagen.
- 2017 Teaching assistant: *Introduction to K-theory* (Master’s course), University of Copenhagen.
Lecture: *Geometric group theory* (Master’s course), University of Copenhagen.
- 2014 Lecture: *Ricci curvature* (Master’s course), *Sapienza – Università di Roma*.

SUPERVISION & MENTORING

- since 2023 Junior mentor of the Operator Algebra Mentor Network.

- 2023 Co-supervision of a Master's thesis, The University of Tokyo.
- 2020-2022 Co-supervision of a PhD thesis, East China Normal University, Shanghai.
Mentor of several PhD and Master's students under the supervision of Hang Wang, East China Normal University, Shanghai.
- 2017 Supervision of an internship report (Exchange Master's student from *Ecole normale supérieure de Cachan*), University of Copenhagen.

PUBLICATIONS

- V. Proietti and M. Yamashita. "Homology and K -theory of dynamical systems III. Beyond stably disconnected Smale spaces". *Transactions of the American Mathematical Society* 378 (2025), pp. 2129–2155. DOI: 10.1090/tran/9353.
- V. Proietti and M. Yamashita. "Homology and K -theory of dynamical systems IV. Further structural results on groupoid homology". *Ergodic Theory and Dynamical Systems* 45.1 (Jan. 2025), pp. 247–273. DOI: 10.1017/etds.2024.37.
- H. Guo, V. Proietti, and H. Wang. "A geometric Elliott invariant and noncommutative rigidity of mapping tori". *Journal of Functional Analysis* 287.11 (Dec. 2024), p. 110625. DOI: 10.1016/j.jfa.2024.110625.
- C. Bönicke and V. Proietti. "Categorical approach to the Baum–Connes conjecture for étale groupoids". *Journal of the Institute of Mathematics of Jussieu* 23.5 (Sept. 2024), pp. 2319–2364. DOI: 10.1017/S1474748023000531.
- P. Marra, V. Proietti, and X. Sheng. "Hofstadter-Toda spectral duality and quantum groups". *Journal of Mathematical Physics* 65.7 (July 2024), p. 071903. DOI: 10.1063/5.0202635.
- V. Proietti and M. Yamashita. "Homology and K -theory of dynamical systems II. Smale spaces with totally disconnected transversal". *Journal of Noncommutative Geometry* 17.3 (2023), pp. 957–998. DOI: 10.4171/jncg/494.
- V. Proietti and M. Yamashita. "Homology and K -theory of dynamical systems I. Torsion-free ample groupoids". *Ergodic Theory and Dynamical Systems* 42.8 (Aug. 2022), pp. 2630–2660. DOI: 10.1017/etds.2021.50.
- J. Kaad and V. Proietti. "Index theory on the Miščenko bundle". *Kyoto J. Math.* 62.1 (Apr. 2022), pp. 103–131. DOI: 10.1215/21562261-2021-0021.
- V. Proietti. "A note on homology for Smale spaces". *Groups, Geometry, and Dynamics* 14.3 (Aug. 2020), pp. 813–836. DOI: 10.4171/GGD/564.
- S. Nishikawa and V. Proietti. "Groups with Spanier–Whitehead duality". *Annals of K -theory* 5.3 (July 2020), pp. 465–500. DOI: 10.2140/akt.2020.5.465.

INVITED CONFERENCE TALKS

- 2025 International Workshop on Operator Theory and Its Applications (IWOTA), University of Twente (Netherlands). Scheduled.
- 2024 *The rational HK conjecture*. "Noncommutativity behind the dunes" workshop, TU Delft (Netherlands).
The rational HK conjecture. "NSeaG" workshop, University of Southern Denmark, Odense.
The rational K -theory of ample groupoids. "Noncommutative Geometry and Applications" conference, INdAM, Cortona (Italy).

- The rational K-theory of ample groupoids*. Spring Operator algebras Program, East China Normal University, Shanghai.
- Elliott invariant in a geometric context*. “Quantum symmetries” workshop, Mathematical Institute of the Polish Academy of Sciences, Warsaw (Poland).
- 2023 *Nonlocal games and Grothendieck’s inequalities*. “Operator algebras in Topological Physics” workshop, Tohoku University, Sendai (Japan).
- 2022 *Classification via index theory on the mapping torus*. Special Week on Operator algebras, East China Normal University, Shanghai.
- Classification via index theory on the mapping torus*. “Dirac Operators in Topology, Geometry, and Representation Theory” conference, INdAM, Cortona (Italy).
- Homology of groupoids and Smale spaces*. “Smale spaces, their groupoids and C^* -algebras” workshop (online), University of Colorado, Boulder.
- 2021 *Introduction to groupoid C^* -algebras*. “Invitation to Operator algebras in Mathematical Physics” workshop, Beijing International Center for Mathematical Research.
- Noncommutative algebraic topology of some dynamical systems*. Special week on Operator algebras, East China Normal University, Shanghai.
- 2020 *Homology and hyperbolic dynamics*. “Noncommutative Geometry and Quantization” workshop, Sichuan University, Chengdu (China).
- 2019 *Isomorphism conjectures in topological dynamics* (Mini course). Autumn Operator algebras Program, East China Normal University, Shanghai.
- 2018 *K-theory and homology in hyperbolic dynamics*. “Bivariant K-theory in Geometry and Physics” conference, Erwin Schrödinger Institute, Vienna.
- 2017 *Static correspondences for Smale spaces*. “Danske Unge C^* -algebra Studerende” (DUC*S) conference, Aarhus University (Denmark).

SELECTED SEMINAR TALKS

- 2025 *Base change, groupoid homology, and hyperbolic dynamics*. Analysis seminar, KU Leuven (Belgium).
- From aperiodic materials to rigidity of foliation C^* -algebras*. Analysis seminar, Tor Vergata University of Rome.
- Chern character and groupoid-equivariant bivariant K-theory*. Geometry seminar, Sapienza – University of Rome.
- The rational K-theory of ample groupoids*. “Interactions between C^* -algebraic KK-theory and homotopy theory” workshop (online).
- 2024 *The rational K-theory of ample groupoids*. Operator algebras seminar, The University of Tokyo.
- A geometric Elliott invariant and noncommutative rigidity of mapping tori*. Lie groups seminar, Friedrich-Alexander-Universität, Erlangen (Germany).
- Elliott invariant in a geometric context*. NYC Noncommutative geometry seminar (online), St. John’s University, New York.
- A geometric Elliott invariant and noncommutative rigidity of mapping tori*. Operator algebras seminar, Fudan University, Shanghai.
- 2023 *A geometric Elliott invariant and noncommutative rigidity of mapping tori*. NCG mini workshop, Leiden University, (Netherlands).

- Nonlocal games and Grothendieck's inequalities.* Tor Vergata University of Rome.
- Noncommutative algebraic topology and hyperbolic dynamics.* Global NCG Seminar (online).
- 2022 *Noncommutative algebraic topology of dynamical systems.* Tor Vergata University of Rome.
- A geometric mapping of the Elliott invariant.* Operator algebras seminar, University of Wollongong (Australia, online).
- 2021 *Index theory on mapping tori.* Peking University, Beijing.
- Nonlocal games and Grothendieck's inequalities.* Physics seminar, New York University Shanghai.
- 2020 *Index theory on solenoidal tori.* Operator algebras seminar, University of Copenhagen (online).
- Homology and K-theory of torsion-free ample groupoids and Smale spaces.* Operator algebras seminar, University of Wollongong (Australia, online).
- 2019 *The K-theoretic approach to the integrated density of states in quasi-crystals.* Tor Vergata University of Rome.
- 2018 *Flat bundles are cohomologically trivial.* Global Analysis Oberseminar, University of Bonn (Germany).
- Flat bundles are cohomologically trivial.* Operator algebras seminar, East China Normal University, Shanghai.
- Induction-Restriction and the K-theory of groupoids.* Operator algebras seminar, University of Southern Denmark, Odense.
- Index theory on the Miščenko bundle.* Operator algebras seminar, The University of Tokyo.
- 2017 *Index theory on the Miščenko bundle.* Georg-August-Universität Göttingen (Germany).
- C*-algebras from Axiom A systems.* Operator algebras seminar, University of Southern Denmark, Odense.
- Index theory on the Miščenko bundle* (two talks). Operator algebras seminar, University of Victoria, British Columbia (Canada).
- K-theory and the Riemann-Roch theorem* (lecture series). Graduate students seminar, University of Victoria, British Columbia (Canada).
- A remark on the Miščenko line bundle.* Operator algebras seminar, University of Copenhagen (Denmark).

SHORT & OUTREACH TALKS

- 2023 *What is the hypergame?.* “What is ...?” seminar, University of Oslo (Norway).
- 2018 *K-theory and homology for groupoids.* Gong show at “Non-commutative Geometry, Index Theory and Mathematical Physics” workshop, Oberwolfach (Germany).
- 2017 *Line bundles on the sphere.* General colloquium, Seattle University, Washington.
- K-theory and homology for groupoids.* Gong show at “Secondary and delocalized index invariants” workshop, University of Copenhagen (Denmark).
- 2015 *What is a Smale space?.* “What is ...?” seminar, University of Copenhagen (Denmark).

Oslo, May 2025