
Laurent Cantier

PROFIL

I am post-doctoral researcher at the Universidad de Zaragoza under the supervision of Dr. Bosa. My research lies in the classification of C^* -algebras within Operator Algebras via the study of the Cuntz semigroup (and some of its variations) while being attracted to construct tools for classification via Category Theory.

EDUCATION

Jan 2025 – Now	POST-DOCTORAL POSITION Universidad de Zaragoza
Jan 2022 – Jan 2025	MARGARITA SALAS POST-DOCTORAL POSITION Universitat Autònoma de Barcelona & Czech Academy of Sciences
Oct 2020 – Jan 2022	FPI POST-DOCTORAL POSITION Universitat Autònoma de Barcelona
Oct 2016 – Oct 2020	PHD IN MATHEMATICS Universitat Autònoma de Barcelona Advisors: Prof. Antoine and Prof. Perera Title: <i>A new invariant for C^*-algebras</i> (Cum Laude)
Oct 2015 – Jun 2016	MASTER DE MATHÉMATIQUES ET APPLICATIONS Université of Paris 6
Sept 2011 – Oct 2015	DIPLOMA ECOLE CENTRALE DE NANTES Engineering Master degree with major in Applied Mathematics
Sept 2009 – Sept 2011	CLASSES PRÉPARATOIRES MPSI/MP*

PUBLICATIONS AND PREPRINTS

PUBLISHED

- [1] L. Cantier, Towards a classification of unitary elements of C^* -algebras, *Int. Math. Res. Not. IMRN* (7), (2025), pp. 1-19.
- [2] L. Cantier and E. Vilalta, Fraïssé theory for Cuntz semigroups, *J. Algebra* 658, (2024), pp. 319-364.
- [3] L. Cantier, A systematic approach for invariants of C^* -algebras, *Studia Math.* 273 (2023), pp. 63-99.
- [4] L. Cantier, The unitary Cuntz semigroup on the classification of non simple C^* -algebras, *J. Math. Anal. Appl.* 522, (2023), no. 2, 127003.
- [5] L. Cantier, Uniformly based Cuntz semigroups and approximate intertwinings, *Int. J. Math.* 33, (2022), no. 09, 2250062.

[6] L. Cantier, Unitary Cuntz semigroups of ideals and quotients, *Münster J. of Math.* 14, (2021), pp. 585-606.

[7] L. Cantier, A unitary Cuntz semigroup for C^* -algebras of stable rank one, *J. Funct. Anal.* 281, (2021), no. 9, 109175.

ON THE ARXIV

[1] L. Cantier, On the Nielsen-Thomsen sequence, (2024).

[2] L. Cantier, Continuous fields of interval algebras, (2025).

TEACHING

2024-2025 (30H)

Universidad de Zaragoza - Discrete Mathematics (1° - Lecture & Tutorial)

2023-2024 (90H)

UAB Matemàtiques - Estructures Algebraiques (2° - Tutorial)

UAB Eng.Telecomunicacions - Àlgebra (1° - Tutorial)

Harbour.Space University - Discrete Mathematics (1° - Lecture & Tutorial)

2022-2023 (45H)

Harbour.Space University - Discrete Mathematics (1° - Lecture & Tutorial)

2021-2022 (192H)

Classes Préparatoires Masséna - Khôlles de Mathématiques (2° - MP)

Classes Préparatoires Stanislas Cannes - Tutorat de Mathématiques (1° - BL)

Skema Business School - Business and Economics Calculus (1° - Lecture & Tutorial)

Harbour.Space University - Algebra and Number Theory (1° - Lecture & Tutorial)

2020-2021 (30H)

UAB Matemàtiques - Estructures Algebraiques (2° - Tutorial)

UAB Matemàtiques - Àlgebra Commutativa (4° - Tutorial)

2019-2020 (30H)

UAB Matemàtiques - Estructures Algebraiques (2° - Tutorial)

UAB Matemàtiques - Àlgebra Commutativa (4° - Tutorial)

2018-2019 (48H)

UAB CC. i Tec. Aliments - Matemàtiques (1° - Practicum)

UAB Biotecnologia - Probabilitat I Estadística (2° - Tutorial)

MATHEMATICAL TRAVELS

RESEARCH STAYS

Fields Institute, Toronto, Sept 18 - Nov 10, 2023.

University of Louisiana at Lafayette with Prof. Robert, Lafayette, Mar 25 - Jun 15, 2019.

ADVANCED COURSES

Course on Modern Theory of Cuntz semigroups, 16 hours of lectures given at the Centre de Recerca Matemàtica, Barcelona en 2024. (with Dr. Antoine and Dr. Perera)

Introduction course on the Cuntz semigroup, 4 hours of lectures given at the Czech Academy of Sciences, Praga en 2022.

QUALIFICATIONS

Acreditació de Lector, Agència de Qualitat Universitària de la Generalitat de Catalunya (AQU).

Qualification de Maître de Conférences, Conseil national des universités (CNU).

SEMINARS

NCG&T Seminar, Czech Academy of Sciences. 2022 - 2025. 5 talks.

Seminar of the ULL, University of Louisiana at Lafayette, Mar 2019 - Jun 2019. 2 talks.

Teoria d'Anells Seminar, Universitat Autònoma de Barcelona, 2016 - 2024. >5 talks.

CONFERENCES

Joint Perspectives in Geometry, Algebra and Topology (Summer School & Workshop), **Organizing Committee**, CRM, Barcelona, 25 June - 05 July, 2024.

Noncommutativity in the North - MikaelFest, Gothenburg, Sweden 17 - 20 June, 2024.

Twinned Conference on C*-Algebras and Tensor Categories, Fields Institute, 06 - 10 Nov 2023.

Workshop on Operator Algebras and Applications: Groups and Group Actions, Fields Institute, 02 - 06 Oct, 2023.

Workshop on Operator Algebras and Applications: Symmetry and Structure, Fields Institute, 18 - 22 Sept 2023.

Algebra, Geometry and C*-algebras, ICMS, Edinburgh, 19 - 23 June, 2023.

C*-days in Prague, **Organizing Committee**, IMCAS, Prague, 30 - 31 May, 2023.

Workshop Barcelona Weekend on Operator Algebras III, Centre de Recerca Matemàtica, Barcelona, 27 - 28 Jan, 2023.

Workshop on Cuntz semigroups II, **Invited Speaker**, University of Kiel, 19 - 23 Sept 2022. (On the Classification of Unitary Elements of a C*-Algebra.)

BMS-BGSMath Junior Meeting 2022, **Organizing Committee**, Universitat de Barcelona, 05 - 07 Sept, 2022.

C*-Dynamics and Set Theory in Paris (Summer School & Workshop), Cité Universitaire, Paris, July 26 - Aug 5, 2022. **Invited Speaker**. (On the Classification of Unitary Elements of a C*-Algebra.)

Workshop on Cuntz semigroups, **Invited Speaker**, Westfälische Wilhelms-Universität (WWU) Münster, Jul 11 - Jul 16 2021. (The unitary Cuntz semigroup on the classification of non-simple C*-algebras.)

Workshop Barcelona Weekend on Operator Algebras II, CRM, Barcelona, 19 - 21 Sept, 2019.

Workshop Operator Algebras, Groups and Applications to Quantum Information, ICMAT, Madrid, 10 - 15 March, 2019.

Workshop Barcelona Weekend on Operator Algebras, CRM, Barcelona, 17 - 18 Nov, 2018.

CSASC 2018, **Invited speaker**, Bratislava, 11 - 14 Sept, 2017. (Introducing the Cu1 semigroup.)

Operator Algebras and Dynamical Systems, **Organizing Committee**, Centre de Recerca Matemàtica, Barcelona, March 1 - July 1, 2017.

Advanced Course on Groupoids, Crossed Products and Rokhlin Dimension, CRM, Barcelona, 13 - 17 March, 2017.

Course on Category Theory, Universitat Autònoma de Barcelona, 10 - 26 Jan, 2017.

EXPERIENCE

ACADEMIC POSITIONS

Post-doctoral Position - Universidad de Zaragoza (Fev 2025 - Dec 2025)
Margarita Salas Grant - IMCAS, Prague & CRM, Barcelona (Jan 2022 - Jan 2025)
Post-doctoral FPI Grant - CRM, Barcelona (Oct 2020 - Dec 2021)
Pre-doctoral FPI Grant - CRM, Barcelona (Oct 2017 - Oct 2020)

OTHERS

IT Developer (Intern) - Sopra-Steria, Aix-en-Provence (Apr - Oct 2015)
IT Developer (Intern) - Amadeus Ltd, Nice & London (May 2013 - March 2014)

SKILLS

French - Native speaker
English - Fluent
Spanish - Fluent
Catalan - Fluent
Programming skills - C, C++, JAVA, PHP, HTML5, CSS, KSH, SQL, BootStrap, Twig, Scala, Maple, Matlab, Scilab, R, JavaScript, Wordpress, LaTeX, Beamer.

PERSONAL INTERESTS

In my free time, I enjoy some outdoor and creative activities, including windsurfing, skiing, climbing, racket sports, and music. I have also dedicated time to teaching and organizing events related to these interests.

REFERENCES

PERERA Francesc. (PhD Advisor) Doctor in Mathematics, Professor at Universitat Autònoma de Barcelona. perera@mat.uab.cat

ROBERT Leonel. (Principal Investigator) Doctor in Mathematics, Professor at University of Louisiana, Lafayette. leonel.robert@gmail.com

BECKER Marc. Professor in 'Classes Préparatoires' MP*, in Lycée Massena, Nice.
m-becker@orange.fr