

Lionel Vaux Auclair – *Curriculum Vitae* (May 2025)

ID and contacts: Lionel VAUX AUCLAIR.

Born: 8 June 1981, Carpentras, France — French citizen.

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Education and positions

2021 Habilitation in Mathematics, Université d’Aix–Marseille: *Sur la syntaxe de la sémantique quantitative* (18 Nov. 2021).

since 2009 *Maître de conférences* in Mathematics, Aix-Marseille University.
Researcher at the Institut de Mathématiques de Marseille (I2M).

2008–2009 ATER (temporary research and teaching assistant) in Computer Science, Université de Savoie. Researcher at the Laboratoire de Mathématiques (LAMA).

2004–2008 PhD in Mathematics, Université de la Méditerranée: *λ -calcul différentiel et logique classique : interactions calculatoires* (23 Nov. 2007).

2001–2005 *Élève normalien* (student with a civil servant status) at the *École Normale Supérieure de Lyon*, Computer Science department.

Doctoral supervision

2022– Hugo Sourice *Théories et modèles en droit administratif*. Interdisciplinary grant, legal and political sciences/mathematics. Co-advisor: Frédéric Rouvière (LTD, Aix-Marseille).

2021– Lison Blondeau-Patissier: *Sémantique des jeux et développement de Taylor des λ -termes*. Co-advisor: Pierre Clairambault (LIS, Aix-Marseille).

2020–2024 Rémy Cerda: *Développement de Taylor en λ -calcul infinitaire*. Co-advisor: Laurent Regnier (I2M, Aix-Marseille).

2017–2021 Zeinab Galal (at Paris 7 University): *Bicategorical Orthogonality Constructions for Linear Logic*. Co-advisors: Christine Tasson and Thomas Ehrhard (both at IRIF, Paris 7).

2017–2020 Federico Olimpieri: *Intersection Types and Resource Calculi in the Denotational Semantics of λ -calculus*. **Joint PhD degree** of Aix-Marseille University, and Roma Tre University. Co-advisors: Laurent Regnier (Aix-Marseille) and Lorenzo Tortora de Falco (Roma Tre).

2016–2019 Jules Chouquet (at Paris 7, funded by French ANR project Rapido): *Une géométrie du calcul: Réseaux de preuve, Appel-Par-Pousse-Valeur et Topologie du consensus*. Co-advisor: Christine Tasson (IRIF, Paris 7).

2014–2016 Thomas Leventis: *λ -théories probabilistes*. Co-advisor: Laurent Regnier (Aix-Marseille).

2011–2014 Michele Alberti: *On operational properties of quantitative extensions of λ -calculus*. **Joint PhD degree** of Aix-Marseille University, and Bologna Alma Mater. Co-advisors: Laurent Regnier, Emmanuel Beffara (Aix-Marseille) Ugo Dal Lago and Davide Sangiorgi (Bologna).

Fellowships and awards

2010–2011 PEPS *Quantitative approaches of non determinism* (CNRS INS2I): 18 k€ total

2019–2024 Local leader of the Marseille site of project PPS *Probabilistic Program Semantics* (ANR, 87 k€ for the site / around 300 k€ for the whole project)

2007 Best paper award of the RTA conference (1000 €)

Collective responsibilities

- since 2025* Co-founder and French leader of CNRS IRN *Logic and Interaction*
- since 2022* French coordinator of the *Curriculum binazionale di laurea magistrale in Logica/Curriculum binational de master en Logique*, delivering the double degree of Master in Philosophy or Mathematics at Roma Tre, and Mathematics and Applications at Aix-Marseille Université.
- since 2018* Head of team *Logique de la programmation* at I2M
- since 2018* Co-fonder and co-head of WG *Logic, homotopy, categories* of CNRS INS2I national research group *Informatique Fondamentale et ses Mathématiques*
- 2011–2014* Head of *Institut de recherche pour l'enseignement des mathématiques* at Aix-Marseille Université.

Management of scientific events

- since 2014* Organizer of the weekly logic seminar of the I2M.
- 2024* Main organizer of the conference *Differential λ -Calculus and Differential Linear Logic, 20 Years Later*, 13–17 May, 2024, CIRM, Marseille.
- 2023* PC member of TLLA-LINEARITY (satellite of FSCD).
- 2022* PC member of TYPES 2022.
- 2022* PC member of TLLA-LINEARITY (satellite of IJCAR-FSCD).
- 2022* Main co-organizer (with Laurent Regnier) of the *Logic and Interactions 2022* meeting, 24 Jan–25 Feb 2022, CIRM, Marseille.
- 2014–2021* Member of the organizing committee of the monthly CHoCoLa meeting at the *ÉNS de Lyon*, gathering the French “Curry-Howard” community.
- 2016* Member of the organizing committee of *CSL 2016*, 28 Aug–3 Sep 2016, Marseille.
- 2012* Main co-organizer (with Emmanuel Beffara) of the *Logic and Interactions 2012* meeting, 30 Jan–2 Mar 2012, CIRM, Marseille.
- 2009* Member of the organizing committee of *Types 2009* in Aussois, France.

Selected publications

- Rémy Cerdà et Lionel Vaux Auclair: How to Play the Accordion: Uniformity and the (Non-)Conservativity of the Linear Approximation of the λ -Calculus. In 42nd International Symposium on Theoretical Aspects of Computer Science (STACS 2025). DOI: 10.4230/LIPIcs.STACS.2025.23
- Giulio Guerrieri, Giulia Manara, Lorenzo Tortora de Falco, Lionel Vaux Auclair: Confluence for Proof-Nets via Parallel Cut Elimination. 25th Conference on Logic for Programming, Artificial Intelligence and Reasoning (*LPAR 2024*). DOI: 10.29007/vkfn
- Lison Blondeau-Patissier, Pierre Clairambault and Lionel Vaux Auclair: Strategies as Resource Terms, and their Categorical Semantics. 8th International Conference on Formal Structures for Computation and Deduction (*FSCD 2023*), 2023, Roma, Italia. DOI: 10.4230/LIPIcs.FSCD.2023.13
- Jules Chouquet and Lionel Vaux Auclair: An application of parallel cut elimination in multiplicative linear logic to the Taylor expansion of proof nets. *Logical Methods in Computer Science*, Dec 2021. DOI: 10.46298/lmcs-17(4:22)2021.
- Lionel Vaux: Normalizing the Taylor expansion of non-deterministic λ -terms, via parallel reduction of resource vectors *Logical Methods in Computer Science*, Jul 2019. DOI: 10.23638/LMCS-15(3:9)2019.