Justine Falque

Curriculum Vitae

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https://falque.github.io/

Born 21/10/1992 in Montpellier (France)

OVERVIEW

PhD in Mathematics / Computer Science

Thesis title :
Classification of P-oligomorphic groups, conjectures of Cameron and Macpherson
PhD advisor : Nicolas M. Thiéry (Laboratoire de Recherche en Informatique)

CURRICULUM

Assistant professor (ATER) in computer science **2020-2021**
Université Gustave Eiffel, LIGM, Champs-sur-Marne

Assistant professor (ATER) in computer science **2019-2020**
Université Paris-Saclay, LRI, Orsay

PhD in Combinatorics, along with computer science teaching **2016-2019**
Université Paris-Saclay, LRI, Orsay
Defended 29th Novembre 2019

PhD advisor :	Nicolas Thiéry
Manuscript reviewers :	Peter Cameron, Pascal Weil
Other jury members :	Isabelle Guyon, Maurice Pouzet, Christophe Tollu, Annick Valibouze

M2 Applied algebra **2015-2016**
Université Paris-Saclay, Versailles
Master thesis at the LRI (Orsay) with Nicolas Thiéry
Subject : study of orbit algebras in the case of a linear profile

M2 Formation des Professeurs Agrégés ("Agrégation" in Mathematics) **2014-2015**
Université Paris-Sud, Orsay
Master thesis at the LMO (Orsay) with Guy Henniart
Sujet : study of the AKS algorithm and its complexity

L3 and M1 Fundamental and Applied Mathematics **2012-2014**
Université Paris-Sud, Orsay

"Classe préparatoire" (CPGE) MPSI-MP **2010-2012**
Lycée du Parc, Lyon

Baccalauréat S **2010**
Lycée Roche Arnaud, Le Puy-en-Velay

RESEARCH

Keywords : Fundamental computer science, discrete mathematics, algebraic combinatorics, permutation groups, graded algebras, invariant theory, computer algebra

- **Publications**
  - Proceedings of international conferences (peer-reviewed) :

    "The orbit algebra of an oligomorphic permutation group with polynomial profile is Cohen-Macaulay", J. Falque & N. Thiéry, *Formal Power Series and Algebraic Combinatorics*, SLC 80B.83, 2018

    "A Bijection Between Weighted Dyck Paths and 1234-avoiding Up-Down Permutations", J. Falque, *Formal Power Series and Algebraic Combinatorics*, accepted, 2021

    "On the enumeration of P-oligomorphic groups", J. Falque, *First International Conference ALgebras, Graphs and Ordered Sets*, p.25-26 de la prépublication, short paper, 2020

  - Accepted in an international journal:

    "Classification of P-oligomorphic groups, conjectures of Cameron and Macpherson", J. Falque & N. Thiéry, Discrete Analysis, accepted (version arxiv.org)

  - Preprints (submitted or not):

    "A Bijection Between Weighted Dyck Paths and 1234-avoiding Up-Down Permutations", J. Falque, under review

    "Pinnacle sets revisited", J. Falque & J.-C. Novelli & J.-Y. Thibon (version arxiv.org)

    "Product-Coproduct Prographs and Triangulations of the Sphere", N. Borie & J. Falque, under review

- **Talks** in French or English :
  - International conferences :
    SLC 78 and 82 (Strasbourg 2017 and Lisbonne 2019, respectively)
    Birthday Conference of Cameron 2017 (Lisbonne)
  - National conferences and seminars (French or not) :
    EJCIM 2018 (Nancy, France)
    "Journées du GT Combalg" 2018
    NBSAN 2018 (Saint-Andrews, Scotland)
    JCB 2020 (Bordeaux, France; invited talk)
    CMS Winter meeting 2020 (Canada; invited talk)
    ALEA 2021 (Luminy, France)
    Research units seminars on invitation (LIX, IRIF, LIPN and LIGM in Paris ; LAMFA in Amiens ; LACIM in Montréal)

- **Posters** : JNIM 2018 (Paris), FPSAC18 (Hanover), Birthday Conference of Macpherson 2018 (Edinburgh).

- Attendee in conferences : SLC 80 and 81 ; Nikolaus 2018 (Aachen) ; JCB 2018 ; Flajolet Seminars (IHP) ; SageMath/Jupyter/GAP workshops (Edinburgh, Cernay, Saint-Flour, Montreal, Providence, Luminy, Halle)...

- Package in preparation for SageMath (P-oligomorphic groups and profiles)

TEACHING AND PEDAGOGIC ACTIVITIES

Computer science tutoring — total : **476 h**

Introduction to computer science and C++ — **88 h**
L1 MPI, Université Paris-Sud, 2016-18
seminars/pratical work ; ∼ 35 students

Algorithmics and programming 1 — **48 h**
L1 MI, Université Gustave Eiffel, 2020-21
seminars/practical work ; ∼ 25 students

Computer science extra tutoring — **35.5 h**
L1 MI, Université Paris-Sud, 2018-19
practical work, extra tutoring ; ∼ 15 then ∼ 25 students

Imperative programming — **42 h**
L1 MPI, Université Paris-Sud, 2019-20
seminars/practical work ; ∼ 30 students

Algorithmics and programming 2 — **48 h**
L1 MI, Université Gustave Eiffel, 2020-21
seminars/practical work ; ∼ 30 students

Programming with C — **48 h**
L2 MI, Université Gustave Eiffel, 2020-21
seminars/practical work ; ∼ 35 and 12 students

Data bases — **24 h**
L2 MI, Université Gustave Eiffel, 2020-21
practical work and project ; ∼ 20 students

Computer architecture — **74 h**
L2 MI, Université Paris-Sud, 2017-18
seminars/practical work, extra tutoring ; ∼ 25 students

Architecture of operating systems — **24 h**
L2 MI, Université Gustave Eiffel, 2020-21
practical work ; ∼ 20 students

General algorithmics **21 h**

L3 MFA, Université Paris-Sud, 2016

seminars ; ∼ 20 students

Compilation **24 h**

M1/ET4, Polytech, 2019

seminars/practical work ; ∼ 20 students

"Fête de la science", Fun programming activity with Laby **3 editions**

Université Paris-Sud, 2016-18

ADMINISTRATIVE RESPONSIBILITIES

Co-creator and co-organisor of the seminar Combinatoire et Interactions **2019-20**

Monthly seminar at the Institut Henri Poincaré, Paris

Coorganised with Baptiste Louf and Matthieu Piquerez (PhD students)

Unfortunately suspended due to the pandemic

OTHER

Programming languages and tools

C, C++, Python, SageMath, GAP-System, Maple, bash, basic assembleur, SQL, html and php, "Version control" (Git...), LaTeX

Languages (spoken and written)

French (maternal), English (fluent), Spanish (notions)