

Lorenzo Stefanello – CV

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Member of UMI and GNSAGA – INdAM

Research Interests

- Abstract algebra: groups and skew braces, Hopf algebras, Galois theory
- Algebraic number theory: Galois module theory, local fields, ramification

Education

- 2020–2024** Ph.D. in Mathematics, Università di Pisa
Supervisors: Prof. Ilaria Del Corso and Dr. Paul J. Truman
Dissertation title: *Hopf–Galois Structures, Skew Braces, and Their Connection*
Defended *cum laude* on 10 April 2024
- 2018–2020** M.S. in Mathematics, Università degli Studi di Padova
Grade: 110/110 *cum laude*, first class honours with distinction
GPA: 30/30, eight out of twelve exams *cum laude*
- 2015–2018** B.S. in Mathematics, Università degli Studi di Trento
Grade: 110/110, first class honours

Papers and Preprints

- 2024** LS and Cindy Tsang, *Classification of the types for which every Hopf–Galois correspondence is bijective*
Preprint
I. Del Corso and LS, *On Fuchs' problem for finitely generated abelian groups: The small torsion case*
Preprint
- 2023** LS and Senne Trappeniens, *On the connection between Hopf–Galois structures and skew braces*
Bulletin of the London Mathematical Society **55**, no. 4, 1726–1748
A. Caranti and LS, *Skew braces from Rota–Baxter operators: a cohomological characterisation and some examples*
Annali di Matematica Pura ed Applicata (4) **202**, no. 1, 1–13
LS and S. Trappeniens, *On bi-skew braces and brace blocks*
Journal of Pure and Applied Algebra **227**, no. 5, Paper No. 107295
- 2022** A. Caranti and LS, *Brace blocks from bilinear maps and liftings of endomorphisms*
Journal of Algebra **610**, 831–851
- 2021** A. Caranti and LS, *From endomorphisms to bi-skew braces, regular subgroups, the Yang–Baxter equation, and Hopf–Galois structures*
Journal of Algebra **587**, 462–487

Other Work

- 2024** LS, *Hopf–Galois Structures, Skew Braces, and Their Connection*
Ph.D. Dissertation
- 2023** LS, *Hopf–Galois theory via skew braces*
Extended abstract for the report of *Skew Braces and the Yang–Baxter Equation*
(Oberwolfach Mini-Workshop)

Invited Talks

- 2024** Algebra week, 10–13 September
Classifying Galois extensions with Childs's property
Yang–Baxter algebras, 4 June
Classifying Galois extensions with Childs's property
Hopf algebras and Galois module theory, 31 May
- 2023** *A relaxed introduction to Hopf–Galois theory*
Workshop on Algebra in l'Aquila 2023, 19 October
The algebraic structure of skew braces
Seminar for Università degli Studi di Siena, 22 September
On notions of solubility in Hopf–Galois theory
Skew braces, skew braceoids, and Hopf–Galois structures, 2 August
Bi-skew braces in Hopf–Galois theory
Hopf algebras and Galois module theory, 29 May
Skew braces and the Hopf–Galois correspondence
The Interplay Between Skew Braces and Hopf–Galois Theory, 18 April
Hopf–Galois theory via skew braces
Skew Braces and the Yang–Baxter Equation (Oberwolfach Mini-Workshop), 2 March
Hopf–Galois theory and skew braces: Open problems and directions
Seminar for Keele University, 30 January
- 2022** *Hopf–Galois theory via (opposite) skew braces*
Seminar for University of Exeter, 13 September
Skew braces that do not come from Rota–Baxter operators
Ischia Group Theory 2022, 24 June (short talk)
Some new examples of Hopf–Galois structures in which the Hopf–Galois correspondence is surjective
Hopf algebras and Galois module theory, 31 May
On bi-skew braces and related topics
QA Seminar (Vrije Universiteit Brussel), 18 May
Skew braces, brace blocks, and the Yang–Baxter equation
Inform on Algebra (Università del Salento), 31 March
Hopf algebras, Galois modules, and skew braces
Insalate di Matematica (Università degli Studi di Milano-Bicocca), 10 March
Local Galois module theory and ramification: An overview
Number Theory Seminar (Charles University), 24 January
- 2021** *...the Yang–Baxter equation, and Hopf–Galois structures*
Hopf algebras and Galois module theory, 25 May

Contributed Talks

- 2024** *Describing Hopf–Galois structures via skew braces*

Groups & Algebras in Bicocca for Young algebraists, 20 June

- 2023** *Skew braces: From the Yang–Baxter equation to Hopf–Galois structures*
XXII Congresso dell'Unione Matematica Italiana - Algebra, 4 September
- Describing Hopf–Galois structures via skew braces*
Young Researchers Algebra Conference 2023, 28 July
- Skew braces and the Hopf–Galois correspondence*
Groups, Rings and the Yang–Baxter equation 2023, 22 June
- Skew braces and Rota–Baxter operators*
Advances in Group Theory and Applications 2023, 7 June
- Some explicit constructions of skew braces*
Categories, Rings and Modules, a conference in honor of Alberto Facchini, 28 January
- 2022** *Some new results on bi-skew braces*
The algebra of the Yang–Baxter equation, 14 July (contributed talk)
- An explicit construction of brace blocks*
Braces in Bracelet Bay, 4 January (contributed talk)
- 2021** *Local Galois module theory: An overview*
Young Researchers in Algebraic Number Theory 2021, 19 August (contributed talk)

Honours and Awards

- 2023** Oberwolfach Leibniz Graduate Students, €200
- 2020–2021** Award for scientific initiatives organised by PhD students, Università di Pisa, €1000
For the project *Galois and Hopf Galois*
- 2015–2018** Merit Award, edition 2018, Università degli Studi di Trento, €2793

Teaching

- 2022–2023** Teaching support, Università di Pisa, *Algebra 1*
Bachelor's degree in Mathematics, 40 hours
- 2021–2022** Teaching support, Università di Pisa, *Algebra 1*
Bachelor's degree in Mathematics, 20 hours
- 2020–2021** Teaching support, Università di Pisa, *Analisi Matematica (Mathematical Analysis)*
Master's degree in Ingegneria edile-architettura, 40 hours

Referee and Reviewer

Referee for Communications in Contemporary Mathematics; Journal of Algebra; Journal of Algebra and Its Applications; Journal of Algebraic Combinatorics

Reviewer for zbMATH Open.

Visiting Periods

- 2024** Cirm (Centre international de rencontres mathématiques), 14–18 October
Research in Residence for the project
On lambda-critical skew braces: classification and applications
for Hopf–Galois structures and the Yang–Baxter equation

2023 Università degli Studi di Siena, 22 September
 Hosted by Prof. Paolo Aglianò

 Keele University, 29 January – 3 February
 Hosted by Dr. Paul J. Truman

2022 University of Exeter, 11–17 September
 Hosted by Prof. Nigel P. Byott

 Vrije Universiteit Brussel, 16–20 May
 Hosted by Prof. Leandro Vendramin

 Keele University, 1–12 May
 Hosted by Dr. Paul J. Truman

Organisation

2020–2021 *Galois and Hopf Galois*, online workshop
 Website: <https://people.dm.unipi.it/stefanello/group.html>

 Study Group on Skew Braces, online study group

Languages

- English: 7.5 (IELTS); Excellent (English for Research Publication and Presentation Purposes)
- Italian: mother tongue