

Francesco Catino

Curriculum Vitae

Università del Salento (Italy)
Dipartimento di Matematica e Fisica
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Employment

- 1992 – pres. Associate Professor, University of Salento (Italy).
- 2016 – 2019 Member of *Research and Teaching Quality Committee* of University of Salento.
- 2001 – 2017 Member of Board of the Graduate Program in Mathematics of University of Salento.
- 2013 – 2016 Member of Board of the Graduate Program in Mathematics and Informatics of University of Salento/University of Basilicata.
- 2008 – 2015 Dean of Undergraduate Studies in Mathematics, University of Salento.
- 2000 – 2004 Dean of Undergraduate Studies in Mathematics, University of Salento.
- 1984 – 1992 Assistant Professor, University of Salento (Italy).

Current Research Interests

The main focus of my research is to determine the set-theoretical solutions of the Yang-Baxter equation and the pentagon equation using appropriate algebraic structures, such as cycle sets, braces and their generalizations.

I am also interested to describe the regular subgroups of the affine group of a vector space.

Finally, one of my old interests, but always relevant to me, is the study of Lie's properties of a ring.

Most Recent Publications

- F. Catino, I. Colazzo, P. Stefanelli, *Set-theoretic solutions to the Yang-Baxter equation and generalized semi-braces*, Forum Math. **33** (2021), 757–772.
- F. Catino, M. Mazzotta, P. Stefanelli, *Inverse semi-braces and the Yang-Baxter equation*, J. Algebra **573** (2021), 576–619.
- F. Catino, M. Mazzotta, P. Stefanelli, *Set-theoretical solutions of the Yang-Baxter and pentagon equation on semigroups*, Semigroup Forum **101** (2020), 259–284.
- M. Castelli, F. Catino, M.M. Miccoli, G. Pinto, *About a question of Gateva-Ivanova and Cameron on square-free set-theoretic solutions of the Yang-Baxter equation*, Comm. Algebra **48** (2020), 2369–2381.

- F. Catino, I. Colazzo, P. Stefanelli, *The Matched Product of the Solutions to the Yang-Baxter Equation of Finite Order*, Mediterr. J. Math. **17** 58 (2020).
- F. Catino, M. Mazzotta, M.M. Miccoli, *Set-theoretical solutions on the pentagon equation on groups*, Comm. Algebra **48** (2020), 83–92.
- F. Catino, I. Colazzo, P. Stefanelli, *The matched product of set-theoretical solutions of the Yang-Baxter equation*, J. Pure Appl. Algebra **224** (2020), 1173–1194.
- M. Castelli, F. Catino, M.M. Miccoli, G. Pinto, *Dynamical extensions of quasi-linear cycle sets and the Yang-Baxter equation*, J Algebra Appl. **18**, no.11 (2019), 1950220.1–16.
- M. Castelli, F. Catino, G. Pinto, *Indecomposable involutive set-theoretic solutions of the Yang-Baxter equation*, J Pure Appl. Algebra **223** (2019), 4477–4493.
- F. Catino, I. Colazzo, P. Stefanelli, *Skew left braces with non-trivial annihilator*, J. Algebra Appl. **18**, no.2 (2019), 1950033.1–23.
- M. Castelli, F. Catino, G. Pinto, *A new family of set-theoretic solutions of the Yang-Baxter equation*, Comm. Algebra **46** (2018), 1622–1629.
- F. Catino, I. Colazzo, P. Stefanelli, *Semi-braces and the Yang-Baxter equation*, J. Algebra **483** (2017), 163–187.
- F. Catino, I. Colazzo, P. Stefanelli, *Regular subgroups of the affine group and asymmetric product of radical braces*, J. Algebra **455** (2016), 164–182.
- F. Catino, I. Colazzo, P. Stefanelli: *On regular subgroups of the affine group*, Bull. Aust. Math. Soc., **91** (2015), no.1, 76–85.
- F. Catino, M.M. Miccoli, *Construction of quasi-linear left cycle sets*, J. Algebra Appl. **14**, no.1, (2015), 155001.1–7.

Books

- F. Catino, F. de Giovanni, *Some Topics in The Theory of Groups with Finite Conjugacy Classes*, Aracne Editrice, Roma, (2015).

Recent Talks

- *Generalized left semi-brace and the set-theoretic solutions of the Yang-Baxter equation*, Algebraic Tools for Solving the Yang-Baxter Equation, Oberwolfach, 10–16 November 2019
- *The set-theoretic solutions of the pentagon equation*, Noncommutative and non-associative structures, braces and applications, Il Gzira (Malta), 11–15 March 2018

- *Braces over a field and regular subgroups of the affine group*, Groups, Rings and the Yang-Baxter equation, Spa (Belgio), 18–24 June 2017
- *Groups and the Yang-Baxter equation*, A One-Day Group Theory Seminar, Napoli, March 15, 2016

Postdoctoral students

- 2021 – pres. Paola Stefanelli
- 2020 – 2021. Marzia Mazzotta
- 2019 – 2020. Paola Stefanelli
- 2017 – 2018. Ilaria Colazzo
- 2016 – 2017. Paola Stefanelli
- 2006 – 2011. Ernesto Spinelli
- 2005 – 2007. Salvatore Siciliano

PhD Students

- 2020 Marzia Mazzotta, *Recent developments of the set-theoretical solutions to the pentagon equation*
- 2019 Giuseppina Pinto, *On the indecomposable cycle sets and the Yang-Baxter equation*
- 2019 Marco Castelli, *The Retraction process of the left cycle sets and the Yang-Baxter equation*
- 2017 Ilaria Colazzo, *Left Semi-braces and the Yang-Baxter equation*
- 2015 Paola Stefanelli, *Braces and some related topics*
- 2014 Valerio Guido, *Gradings on e_6* (coadvisor C. Draper Fontanals)
- 2012 Roberto Rizzo, *On the structure of certain semiprime superalgebras with superinvolution* (coadvisor G. Lee)
- 2005 Ernesto Spinelli, *Lie properties of modular group algebras and restricted universal enveloping algebras*
- 2004 Salvatore Siciliano, *Struttura torale di un'algebra associativa*

Service and Professional Activities

- 2020 – pres. Managing Editor of scientific journal *Note di Matematica*
- 2014 – pres. Member of Editorial Team of the book series *Quaderni di Matematica* - University of Salento
- 2012 – pres. Reviewer for Mathematical Reviews
- 1997 – 2019 Assistant Editor of scientific journal *Note di Matematica*
- 2006 – 2012 Editor for *Pure Mathematics and Applications* - section *Algebra and Theoretical Computer Science*

- 6 editions Member of Scientific Committee for workshops *Advances in Group Theory and Applications*
- 2 editions Member of the Steering Committee for summer schools *Advances in Group Theory and Applications - The School*
- Member of Scientific Committee for workshop *Naples 2015 Conference in Group Theory and its Applications*, Napoli 7-8 ottobre 2015.
- Member of Tenure and Promotion Committees for Associate and Assistant Professor.
- Member of several Board of Examiners for the Doctoral Dissertations.
- Referee for various journals

Teaching Activity

PhD courses

- 2017 Algebraic Structures related to Yang-Baxter equation
- 2012 Introduction to quadratic form over fields
- 2004 Some Aspects of Associative Algebra Theory
- 2004 Lie Algebras
- 2003 Linear Methods in Nilpotents Groups
- 2003 Solvable Associative Algebras
- 2001 Representation Theory of Groups

Courses for bachelor degree and master degree

- 2011 – 2021 Algebra I - course for bachelor degree
- 2003 – 2008 Algebra I - course for bachelor degree
- 2010 – 2021 Group Theory - course for master degree
- 2010 Algebra II - course for bachelor degree
- 2004 – 2005 Group Theory - course for master degree
- 2001 – 2002 Algebra II - course for bachelor degree
- 1991 – 2001 Algebra - course for bachelor degree