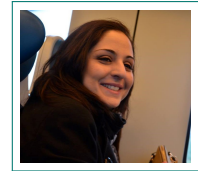


Paola Stefanelli

Curriculum vitae et studiorum



Contact Information

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Work Experience

- October 2019 - present Postdoctoral Researcher at Università del Salento (Lecce, Italy)
Research project: *The Yang-Baxter equation and related algebraic structures*
Scientific advisor: Prof. Francesco Catino
- August 2015 - July 2017 Postdoctoral Researcher at Università del Salento (Lecce, Italy)
Research project: *Braces, regular subgroups of the affine group and the Yang-Baxter equation*
Scientific advisor: Prof. Francesco Catino

Education

- 2015 Ph.D in Mathematics, Università del Salento (Lecce, Italy)
 - Title of the Thesis: *Braces and some related topics*
 - Supervisor: Prof. Francesco Catino
 - Final Judgement: excellent
- 2011 Master's Degree in Mathematics, Università del Salento (Lecce, Italy)
 - Title of the Thesis: *Braces e sottogruppi regolari del gruppo affine (Braces and regular subgroups of the affine group)*
 - Supervisor: Prof. Francesco Catino
 - Grade: 110/110 cum Laude
- 2008 Bachelor's Degree in Mathematics, Università del Salento (Lecce, Italy)
 - Title of the Thesis: *Gruppi di permutazioni primitivi con zoccolo abeliano (Primitive permutation groups with abelian socle)*
 - Supervisor: Prof. Francesco Catino
 - Grade: 110/110 cum Laude

Schools

- 2016 *Advances in Group Theory and Applications 2016 - The School*, Vietri sul Mare (Salerno, Italy), 6th-10th June, organized by F. Catino, M. De Falco, F. de Giovanni, C. Musella, courses held by C. Casolo, Á. del Río, A. Facchini, A. J. Macintyre;
- 2014 *Bicocca Ph.D. School on Representation Theory 2014*, Università di Milano-Bicocca (Italy), 16th-18th June, organized by M. Avitabile, F. Dalla Volta, L. Di Martino, A. Previtali, P. Spiga and Th. Weigel, courses held by M. Isaacs and G. Navarro;

Advances in Group Theory and Applications 2014 - The School, Porto Cesareo (Lecce, Italy), 3th-6th June, organized by F. Catino and F. de Giovanni, courses held by E. Aljadeff, A. Ballester-Bolinches, F. de Giovanni and H. Laue.

Research Interests

- ▷ Determination of solutions of the Yang-Baxter equation, a basic equation of Statistical Mechanics that arose from [Yang 1967] and [Baxter 1972]. In particular, classification of solutions of *set-theoretical* type introduced in [Drinfeld 1992], mainly through "brace structures" [Rump 2005] and their generalizations;
- ▷ Determination of *set-theoretical* solutions of the pentagon equation, a well known equation of modern Mathematical Physics, above all by means of algebraic structures;
- ▷ Description of regular subgroups of the affine group of a vector space, a still open problem posed in [Liebeck, Praeger, Saxl 2009], using the link between regular subgroups and radical F -braces found in [Catino, Rizzo 2009].

Publications

- F. Catino, I. Colazzo, P. Stefanelli: *The matched product of set-theoretic solutions of the Yang-Baxter equation*, Accepted for publication in *J. Pure Appl. Algebra*.
- F. Catino, I. Colazzo, P. Stefanelli: *Skew left braces with non-trivial annihilator*, *J. Algebra Appl.*, **18** no.2 (2019), 1950033.1–23
- 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), 76–85.

Preprint and other works

- F. Catino, I. Colazzo, P. Stefanelli: *The matched product of the solutions to the Yang-Baxter equation of finite order*, Preprint: arXiv:1904.0755.
- *Braces and some related topics*, *Ph.D Thesis*, Dipartimento di Matematica e Fisica "Ennio De Giorgi", Università del Salento (2015).

Talks

- 2019 *New solutions of the Yang-Baxter equation obtained through solutions of the pentagon equation – Advances in Group Theory and Applications 2019*, Lecce (Italy), 25th-28th June (Invited);
- 2018 *The matched product of the solutions of the Yang-Baxter equation – GABY - Groups & Algebras in Bicocca for Young algebraists - The algebra school in Milan*, Milano (Italy), 21th - 25th May (Selected);
The matched product of semi-braces – Noncommutative and non-associative structures, braces and applications. Il-Gżira (Malta), 11th-15th March (Invited);
- 2017 *Semi-braces and the asymmetric product – Advances in Group Theory and Applications 2017*, Lecce (Italy), 5th-8th September;
The algebraic structure of semi-brace – Groups, Rings and the Yang-Baxter equation: Spa (Belgium), 18th - 24th June;
Semi-braces and the Yang-Baxter equation – Young Researchers Algebra Conference 2017: Napoli (Italy), 23th - 24th May;

- 2016 *Radical braces over a field and the asymmetric product – Conference on Rings and Polynomials: Graz (Austria), 3th - 8th July;*
Multiplicative group of a brace and the Yang-Baxter equation – Group Theory in Florence - A meeting in honour of Guido Zappa: Firenze (Italy), 16th - 17th June;
- 2015 *The Hochschild product of radical braces – Advances in Group Theory and Applications 2015, Porto Cesareo (Lecce, Italy), 16th - 19th June.*

Poster presentations

- 2019 *New set-theoretical solutions of the pentagon equation – Groups, Rings and Associated Structures 2019: Spa (Belgium), 9th - 15th June (with Marzia Mazzotta);*
- 2016 *The Hochschild product: a new construction of radical F -braces – Advances in Group Theory and Applications 2016 - The School: Vietri sul Mare (Salerno, Italy), 6th - 10th June;*
- 2015 *New construction of radical F -braces: the Asymmetric Product – Naples 2015 – Conference in Group Theory and its applications, Napoli (Italy), 7th - 8th October.*

Seminars

- 2019 *A new construction of solutions to the Yang-Baxter equation – Algebra Reading Seminar Dipartimento di Matematica e Fisica "Ennio De Giorgi", 29th May;*
On the matched product of set-theoretical solutions – Algebra Reading Seminar, Dipartimento di Matematica e Fisica "Ennio De Giorgi", 20th March;
- 2018 *An overview of semi-braces – Algebra Reading Seminar, Dipartimento di Matematica e Fisica "Ennio De Giorgi", 18th April;*
Brace finiti e soluzioni dell'equazione di Yang-Baxter – Algebra Reading Seminar, Dipartimento di Matematica e Fisica "Ennio De Giorgi", 14th February;
- 2017 *Brace semplici e prodotto asimmetrico – Algebra Reading Seminar, Dipartimento di Matematica e Fisica "Ennio De Giorgi", 14th November;*
- 2015 *F -brace e sottogruppi regolari del gruppo affine – Algebra Reading Seminar, Dipartimento di Matematica e Fisica "Ennio De Giorgi", 13th November.*

Scientific activity

- 2018 - present Referee for some international journals.
- 2017 - present Reviewer for Mathematical Reviews, AMS, *MathSciNet*.
- 2017 - present Member of "Gruppo nazionale per le Strutture Algebriche, Geometriche e le loro Applicazioni" (GNSAGA), INdAM - National Institute for Advanced Mathematics "F. Severi", Rome (Italy).
- 2012 - present Member of UMI - "Unione Matematica Italiana", Bologna (Italy).

Organizing activity

- 2019 Member of the Scientific Committee of the International Conference *YRAC - Young Researchers Algebra Conference 2019* - Napoli (Italy), 16th - 18th September;
 Member of the Organizing Committee of the International Conference *Advances in Group Theory and Applications 2019* - Lecce (Italy), 25th - 28th June;
- 2017 Member of the Organizing Committee of the International Conference *Advances in Group Theory and Applications 2017* - Lecce (Italy), 5th - 8th September;
- 2015 Member of the Organizing Committee of the International Conference *Advances in Group Theory and Applications 2015*, Porto Cesareo (Lecce, Italy), 16th - 19th June;

2013 Member of the Organizing Committee of the International Conference *Advances in Group Theory and Applications 2013*, Porto Cesareo (Lecce, Italy), 10th - 14th June.

Teaching

A.Y. 2016-17 Ph.D. Course, jointly with Prof. F. Catino *Strutture algebriche connesse con l'equazione di Yang-Baxter* (Algebraic structures linked to the Yang-Baxter equation) - Dipartimento di Matematica e Fisica "Ennio De Giorgi", Università del Salento;

Assistant supervisor for the Bachelor's Degree Thesis in Mathematics, *Metaomorfismi di un gruppo* (Group Metahomomorphisms), grad student: Valerio Fedele, supervisor: Prof. F. Catino - Università del Salento.

A.Y. 2013-14 Collaboration for the Course of *Algebra and Geometry* (given by Prof. Rocco Chirivì) of the Bachelor Degree in Information Engineering at Università del Salento.

A.Y. 2012-13 Collaboration for the *Course of Mathematical Analysis* (given by Prof. Michele Campiti) of the Bachelor Degree Course in Industrial Engineering at Università del Salento.

Other activities

July 2016 - "Cultore della materia" - Exam committee member for Algebra examination at Università del Salento (appointment with validity for a period of three years);

A.Y. 2018-19 Tutor for the Course of *Elements of Algebra* and the Course of *Elements of Geometry* of the Bachelor Degree in Education Sciences at Università del Salento;

Tutor for the Preparatory Course in Mathematics of the Bachelor Degree in Mathematics, Physics, and Optics at Università del Salento;

Tutor for the Preparatory Course in Geometry of the Bachelor Degree in Engineering at Università del Salento;

A.Y. 2017-18 Tutor for the Preparatory Course in Mathematics of the Bachelor Degree in Mathematics and of the Bachelor Degree in Physics at Università del Salento;

A.Y. 2016-17 Tutor for the Course of *Principles of Mathematics* of the Bachelor Degree in Environmental Science and Technology at Università del Salento;

A.Y. 2015-16 Tutor for the Course of *Algebra I* of the Bachelor Degree in Mathematics at Università del Salento.

Languages

Italian Mother tongue

English Good

French Satisfactory

Computer Skills

European Computer Driving Licence (ECDL), MS Windows, MS Office, MacOS

GAP, L^AT_EX, Beamer