Benoît Guerville-Ballé

PhD in Mathematics
Topology & Geometry

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Currently Qualification

2017/2019	**PostDoc**, Institute of Mathematical Sciences and Computations (ICMC-USP, São Carlos, Brazil).
2013	**PhD** in Mathematics (Summa Cum Laude First Class Honors).
2010	**Graduate of Advanced Teaching** in Mathematics.

Education & Qualification

2017/2019	**PostDoc**, founded by the Foundation for Research Support of the State of São Paulo, Institute of Mathematical Sciences and Computations (ICMC, São Carlos, Brazil).
2017/2018	**Diploma of University**, "Lights on the Univers", Observatory of Paris.
2015/2017	**PostDoc**, founded by the Japanese Society for the Promotion of Science (JSPS), Tokyo Gakugei University, Department of Mathematics.
2014/2015	**Temporary Assistant Professor**, Fourier Insitute (Grenoble), Topology team.
2013/2014	**Temporary Assistant Professor**, University of Pau, Algebra and Geometry team.
2013 to 2010	**PhD in mathematics and monitoring**, University of Pau, Algebra and Geometry team & University of Zaragoza, Geometry and Topology team, defended in December, 6th 2013. Title: *Topological invariants of line arrangements.* *Advisors:* E. Artal Bartolo, V. Florens and J. Vallès. *Reviewers:* A. Degtyarev, A. Dimca and M. Yoshinaga.
2009/2010	**Advanced Teaching in Mathematics** (agrégation externe), University of Rouen.
2007 to 2009	**Masters in Fundamental Mathematics**, University Paris VI. *Advisor:* J. Michel. Title: *Complex reflections groups, braids groups and Hecke algebra.*
2004 to 2007	**Bachelors of Mathematics and Applications**, University François Rabelais (Tours).

Research areas

- **Algebraic Geometry**: Plane curves, Fundamental group, Coverings, Singularities, Configurations and Arrangements of linear subspaces.
- **Topology**: Complex manifolds, Homology with local coefficients, Milnor fibration.

Academic references

- J.B. Meihlan, Fourier Insitute (France).
- H. Tokunaga, Tokyo Metropolitan University (Japan).
- E. Artal, University of Zaragoza (Spain).

Publications & Preprints

⋆ Main publications

2018	**Topology and homotopy of lattice-isomorphic line arrangements**, arXiv-1801.02682, 8 pp, (submitted).
2017	**Fundamental groups of real line arrangements and torsion in the lower central series**, to appear in *Experimental Mathematics*, arXiv-1704.04152, 9 pp, with E. Artal and J. Viu-Sos.
	⋆ **Configurations of points and topology of real line arrangements**, arXiv-1702.00922, 52 pp, with J. Viu-Sos, (submitted).
2016	**On the topology of arrangements of a cubic and its inflectional tangents**, *Proceedings of the Japan Academy, Ser. A, Mathematical Sciences*, arXiv-1607.07618, 6 pp, with S. Bannai, T. Shirane and H. Tokunaga.
	Non-homotopicity of the linking set of algebraic plane curves, *Journal of Knots Theory and its Ramifications*, arXiv-1602.04916, 12 pp, with T. Shirane.
	⋆ **A linking invariant for algebraic curves**, arXiv-1602.04916, 18 pp, with J.B. Meilhan, (submitted).
2015	**An arithmetic Zariski pair of line arrangements with non-isomorphic fundamental group**, *Revista de la Real Academia de Ciencias Exactas, Fisicas y Naturales. Serie A. Matemàticas*, arXiv-1507.00190, 26 pp, with E. Artal, J.I. Cogolludo and M.A. Marco.
	⋆ **Multiplicativity of the $\mathcal{I}$-invariant and topology of glued arrangements**, *Journal of the Mathematical Society of Japan*, arXiv-1506.08227, 15 pp.
	Dynamical approach to logarithmic vector fields, arXiv-1412.0137, 13 pp, with J. Viu-Sos. An annoucement version is published in *Monographs of the "García de Galdeano" Mathematics.*
2014	⋆ **An arithmetic Zariski 4–tuple of twelve lines**, *Geometry and Topology*, arXiv-1411.2300, 16 pp.
	⋆ **A topological invariant of line arrangements**, *Annali della Scuola Normale Superiore di Pisa - Classe di Scienze*, arXiv-1407.3387, 19 pp, with E. Artal and V. Florens,.
2013	**On complex line arrangements and their boundary manifolds**, *Mathematical Proceedings of the Cambridge Philosophical Society*, arXiv-1305.5645, 18 pp, with V. Florens and M.A. Marco.

Grants and Awards

2017	Awarded of a Post-doctoral grant from the Foundation for Research Support of the State of São Paulo (Brazil).
2017	Ranked second for the Brunella Post-doctoral grant in Bourgogne University (France).
2016	Interviewed for a tenure position in Bourgogne University (France).
2014	Awarded of a Post-docotral grant from the Japanese Society for the Promotion of Science (Japan).

Communications in International Meetings

July 2016	**63th Topology Symposium**, Kobe (Japan).
July 2016	**13th Workshop on algebraic surfaces**, Kochi (Japan).
Mar. 2016	**Workshop on Hyperplane Arrangements and Singularity Theory**, Sapporo (Japan).
Mar. 2016	**AMS Sectional Meeting**, Stony Brook (New York, USA).
Jan. 2016	**3rd Workshop on Algebraic Geometry**, Ube (Japan).
Aug. 2015	**Workshop Hyperplane arrangements and reflection groups**, Hanover (Germany).
Dec. 2014	**Day on Hyperplane Arrangements**, Nancy (France).
Sept. 2014	First workshop of JSPS-MAE Sakura Program **Geometry and Combinatorics of Hyperplane Arrangements and Related Problems**, Sapporo (Japan).
Aug. 2014	Second Franco-Japanese-Vietnamese **Symposium on Singularities**, Sapporo (Japan).
Feb. 2014	**Winter Braids IV**, Dijon (France).
Sept. 2012	**XII International Conference Zaragoza-Pau on Applied Mathematics and Statistics**, Jaca (Spain).

Teaching Experiences

- **Temporary Assistant Professor at University J. Fourier**

2014/15	**Differential equation**, L2 Physics, exercices.
	Mathematics, L1 Math and I.T., courses and exercises.

- **Temporary assistant professor at University of Pau**

2013/14	**Masters thesis**, L3 Mathematics, examiner and reviewer.
	Group theory, L2 Mathematics, courses and exercises.
	Initiation at the Statistic Modelization, L2 Mathematics Applied to Social Sciences, courses and exercices.
	Linear Algebra for I.T., L1 I.T., exercises.
	Elementary algebra, L1 Natural Sciences, courses and exercises.

- **Monitorat at University of Pau**

2012/2013	**Algebraic Topology**, M1 Mathematics, exercises.
2011 to 2013	**Groups theory**, L2 Mathematics, courses and exercises.
2010/2011	**Geometry**, Year of Preparation for an Insertion in Scientific Licence, courses and exercises.

Professional skills

- Linguistic: **French:** native language **English:** working knowledge **German:** intermediate **Japanese:** beginner
- Computer skills:

Sage	Maple	GAP	Scilab
Geogebra	Javascript	Pascal	Asymptote
LaTeX	Beamer	TiKz	HTML & CSS3