Benoît Guerville-Ballé

PhD in Mathematics
Topology & Geometry

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Currently Qualification

2015/2017	**PostDoc**, Tokyo Gakugei University.
2013	**PhD** in Mathematics (Summa Cum Laude First Class Honors).
2010	**Graduate of Advanced Teaching** in Mathematics.

Education & Qualification

2015/2017	**PostDoc**, 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. *Jury:* E. Artal Bartolo (advisor), S. Baader (examiner), A. Bodin (examiner), P. Cassou-Noguès (examiner), J.I. Cogolludo Agustin (examiner), A. Degtyarev (reviewer), V. Florens (advisor) and L. Paris (president).
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.

Principal collaborators

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

Publications & Preprints

- Main (pre)-publications

- **Homotopy-equivalent Zariski pair of line arrangements**, in preparation, (2017).
- **Fundamental groups of real line arrangements and torsion in the lower central series**, with E. Artal and J. Viu-Sos, 9 pp, (2017), arXiv-1704.04152.
- **Configurations of points and topology of real line arrangements**, with J. Viu-Sos, 52 pp (2017), arXiv-1702.00922.
- **On the topology of arrangements of a cubic and its inflectional tangents**, with S. Bannai, T. Shirane and H. Tokunaga, *Japan Academy. Proceedings. Series A. Mathematical Sciences*, 4 pp, (2017), arXiv-1607.07618.
- **Non-homotopicity of the linking set of algebraic plane curves**, with T. Shirane, 12 pp, (2016), arXiv-1607.04951.
- **A linking invariant for algebraic curves**, with J.B. Meilhan, 18 pp, (2016), arXiv-1602.04916.
- **An arithmetic Zariski pair of line arrangements with non-isomorphic fundamental group**, with E. Artal, J.I. Cogolludo and M.A. Marco, *Revista de la Real Academia de Ciencias Exactas, Fisicas y Naturales. Serie A. Matemàticas*, 26 pp, (2015), arXiv-1507.00190.
- **Multiplicativity of the $\mathcal{I}$-invariant and topology of glued arrangements**, *Journal of the Mathematical Society of Japan*, 15 pp, (2015), arXiv-1506.08227.
- **Dynamical approach to logarithmic vector fields**, with J. Viu-Sos. An annoucement version is published in *Thirteenth International Conference Zaragoza-Pau on Mathematics and its Applications*, 13 pp, (2014).
- **Zariski pairs of line arrangements with twelve lines**, *Geometry and Topology*, 18 pp, (2014), arXiv-1411.2300.
- **A topological invariant of line arrangements**, with E. Artal and V. Florens, *Annali della Scuola Normale Superiore di Pisa - Classe di Scienze*, 19 pp, (2014), arXiv-1407.3387.
- **On complex line arrangements and their boundary manifolds**, with V. Florens and M.A. Marco, *Mathematical Proceedings of the Cambridge Philosophical Society*, 18 pp, (2013), arXiv-1305.5645.

Awards

2017
- Awarded of the FAPESP's Post-Doctoral fellowship (24 months).
- M. Brunella post-doctoral fellowship in the Bourgogne Institute of Mathematics (Dijon, France), ranked second.

2016
- Interviewed for a tenure-track position in Bourgogne University (Dijon, France) nř4375: "Transformation groups and dynamical systems", not ranked.

2015
- Awarded of the Japanese Society for the Promotion of Science Post-Doctoral fellowship (24 months).

Selection of 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 in J. Fourier University**

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

- **Temporary assistant professor in Pau University**

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 in Pau University**

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