Léonard Guetta

Postdoc in mathematics

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Academic positions

2021-2023 **Postdoctoral Fellow**, *Max Planck Institute für Mathematik*, Bonn
Under the supervision of Viktoriya Ozornova.

2019-2021 **A.T.E.R**, *Université de Paris*, Paris
Temporary teaching assistant in computer science and mathematics.

Education

2016-2020 **PhD in mathematics**, *Université de Paris*, IRIF laboratory, Paris
"Homology of strict ω-categories" under the supervision of François Métayer (Université de Paris) and Clemens Berger (Université de Nice-Sophia Antipolis). Defense held in January 2021.

2014-2016 **Master degree in fundamental mathematics**, *Université de Paris*, Paris
Homotopy Theory, Algebraic Topology, Differential Geometry, Algebra, Functionnal Analysis, Mathematical Logic, etc.

2011-2014 **Engineering school**, *ENSTA Paristech*, Paris
Specialization in applied Mathematics.

Talks

Nov. 2022 **Groupoid-valued presheaves as models for homotopy types**, *Seminar on higher categories, polygraphs and homotopy*, Université de Paris, Paris

Mar. 2022 **Homotopy types as ∞-groupoids**, *Part of a miniseries "An introduction to homotopy type theory and univalent foundations"*, MPIM, Bonn, Germany

Sep. 2021 **Homology of strict ω-categories and the bubble-free conjecture**, *Workshop "Homotopical Algebra and Higher Structures"*, Oberwolfach, Germany

Nov. 2019 **Homology of strict ω-categories**, *Seminar on Logic and interactions*, Université Aix-Marseille, France

Oct. 2019 **Homotopy colimits and slices of small categories**, *Seminar on higher categories, polygraphs and homotopy*, Université de Paris, France

Mar. 2018 **Non-universality of colimits in the category of strict ω-categories**, *Seminar on higher categories, polygraphs and homotopy*, Université de Paris, France

Feb. 2018 **Homology of (1-)categories**, *Seminar on higher categories, polygraphs and homotopy*, Université de Paris, France

Jun. 2017 **A few remarks on the acyclic models method, after M. Barr**, *Seminar on higher categories, polygraphs and homotopy*, Université de Paris, France

Publications

Published papers

2021 **Homology of categories via polygraphic resolutions**, *Journal of Pure and Applied Algebra*, Vol. 225, No. 10

2020 **Polygraphs and discrete Conduché ω-functors**, *Higher Structures*, Vol. 4, No. 2

2017 **A unifying approach to the acyclic models method and other lifting lemmas**, *Theory and Applications of Categories*, Vol. 32, No. 25

Preprints

2023 **Fibrantly induced model structures**, *arXiv:2301.07801*
joint work with Lyne Moser, Maru Sarazola and Paula Verdugo

2022 **Presheaves of groupoids as models for homotopy types**, *arXiv:2209.13346*

Teaching experience

2016-2021 **Teaching in computer science at undergraduate level**, *Université de Paris*, Paris

2019-2021 **Teaching in mathematics at undergraduate level**, *Université de Paris*, Paris

Other research activities

2016 **Master's thesis**, *Université de Paris*, Paris, 5 months
"A categorical approach to the definition of differential manifolds" under the supervision of François Métayer and Alain Prouté.

2014 **Research Internship**, *C.E.A*, Saclay, 5 months
Category theory and quantum computing

2013 **Research Internship**, *Universitat Autonomá de Barcelona*, Barcelona, 5 months
Singular integrals and complex analysis

Language

French *Mother Tongue*
English *Fluent*
Spanish *Elementary*
German *Elementary*