

# Simon Zugmeyer

45, rue des Saints Pères  
75006, Paris

✉ [simon@zugmeyer.com](mailto:simon@zugmeyer.com)

🌐 <http://helios.mi.parisdescartes.fr/~szugmeyer/index.html>

## Education, qualifications

- 2020–2021 **Post-doctoral contract**, *MAP5, Université de Paris*, Paris, France.  
One year contract, financed by the Del Duca Foundation, with Nathael Gozlan.
- 2019–2020 **ATER**, *Université Claude Bernard Lyon 1*, Lyon, France.  
One year contract at the university with teaching duties.
- 2016–2019 **Preparation of a PhD thesis**, *Institut Camille Jordan*, Lyon, France.  
Under the supervision of Louis Dupaigne and Ivan Gentil, on functional inequalities and their link with partial differential equations.
- 2015–2016 **Masters in mathematics for research, studies in "Partial differential equations"**, *ENS Lyon*, Lyon, France.  
Masters in mathematics geared towards research, ran jointly by the ENSL and the UCBL.
- 2014–2015 **Masters in Mathematics and agrégation**, *Université Claude Bernard Lyon 1*, Lyon, France.  
Masters in mathematics geared towards teaching, and preparation to the agrégation (rank: 16th).
- 2011–2013 **Bachelor and M.Sc. in Physics**, *ENS Lyon*, Lyon, France.  
Common core, then specialization in fundamental physics. The ENS is a french *grandes écoles* and one of the most prestigious universities in France.

## Publications

1. "Sharp trace Gagliardo-Nirenberg-Sobolev inequalities for convex cones, and convex domains". *Ann. Inst. H. Poincaré Anal. Non Linéaire*, 36(3):861–885, 2019; arXiv:1710.08233
2. "A family of Beckner inequalities under various curvature-dimension conditions". With Ivan Gentil. *To be published in Bernoulli*. arXiv:1903.00214
3. "Entropy flows and functional inequalities on convex sets". *Preprint*. arXiv:2001.02578
4. "Sobolev's inequality under a curvature-dimension condition". With Louis Dupaigne and Ivan Gentil. *Preprint*. hal-03006155

## Talks

- January 28th, 2020 **Lecture group on functional inequalities**, *ICJ*, Lyon, France.  
"Méthode des flots d'entropie : quelques exemples de calcul"
- February 18th, 2019 **Winter School on calculus of variations and probabilities**, *CIMI*, Toulouse, France.  
"The method of entropy flow for Beckner inequalities"
- November 6th, 2018 **PhD seminar**, *LMJL*, Nantes, France.  
"Réarrangements symétriques décroissants, inégalité de Pólya-Szegő"
- October 8th, 2018 **PhD seminar**, *ICJ*, Lyon, France.  
"Réarrangements symétriques décroissants"
- June 27th, 2018 **An analyst, a geometer and a probabilist walk into a bar**, *Cardiff University*, Cardiff, Wales.  
"Entropy flow and sharp Sobolev inequalities"
- June 13th, 2018 **Workshop on stability of functional inequalities and applications**, *IMT*, Toulouse, France.  
"From the Borell-Brascamp-Lieb inequality to sharp trace-Sobolev inequalities"
- May 14th, 2018 **Colloque Inter'Actions**, *UCBL*, Lyon, France.  
"De la théorie de Brunn-Minkowski (alias l'inégalité arithmético-géométrique) aux inégalités de Sobolev optimales"
- April 3rd, 2018 **Séminaire d'équipe, EDPA**, *ICJ*, Lyon, France.  
"De l'inégalité de Borell-Brascamp-Lieb aux inégalités de Sobolev à trace optimales"

- March 13th, 2018 **Opening conference for the EFI ANR, LJLL (Jussieu)**, Paris, France.  
"From the Borell-Brascamp-Lieb inequality to sharp trace-Sobolev inequalities"
- May 9th, 2017 **PhD seminar, ICJ**, Lyon, France.  
"Petite balade isopérimétrique"
- November 9th, 2016 **Séminaire compréhensible, Institut Fourier**, Grenoble, France.  
"Inégalités de Sobolev optimales"

## Administrative and organisational responsibilities

- 2019 **Inter'Actions 2019 Colloquium**.  
joint organisation with the IMB (Bordeaux)
- 2018–2020 **Member of the board, Department of Mathematics**, UCBL.
- 2017–2018 **PhD Seminar, of both ICJ and UMPA**.  
organisation, with both Hugo Vanneuille and Jonathan Husson

## Teaching

- Spring 2021 **Temporary lecturer, IUT de Paris**, Paris, France.  
Lecture and directed studies for second year students at the IUT
- 2019–2020 **ATER (temporary contract for research and teaching), UCBL**, Lyon, France.  
Directed studies and preparation for oral exams for first year students (84h+10h, spring 2019)
- 2016–2019 **Teaching Assistant, directed studies (TD) and preparation for oral exams (Khôlles), UCBL**, Lyon, France.
  - TD in L2 : Mathématiques 4 (PCSI) (36h, spring 2019)
  - Khôlles in L1 (prépa) : Fondamentaux des mathématiques 2 (13h, spring 2019)
  - Khôlles in L1 (prépa) : Fondamentaux des mathématiques 1 (10h, autumn 2018)
  - TD in L1 : Fondamentaux des mathématiques 2 (33h, spring 2018)
  - Khôlles in L3 : mesure et intégration (19h, autumn 2017)
  - Khôlles in L2 : Math III (17h, autumn 2017)
  - TD, Analyse IV (L2) : suites et séries de fonctions (45h, spring 2017)
  - Khôlles in L3 : analyse complexe et calcul différentiel (19h, spring 2017)

## Professional experiences

- Spring 2019 **Thematic programme "Optimal transport"**, *Erwin Schrödinger Institute*, Vienna, Austria.  
Three weeks at the ESI
- Winter 2016 **Research program "Interactions between Partial Differential Equations and Functional Inequalities"**, *Mittag-Leffler Institute*, Stockholm, Sweden.  
Invited for two weeks
- Summer 2016 **Graduate thesis**, *Université Claude Bernard Lyon 1*, Lyon, France.  
Four month long internship, working on sharp Sobolev inequalities and their minimizers, under the supervision of Louis Dupaigne and Ivan Gentil.
- Winter 2015 **Winter school: "Nonlinear Functions Spaces in Mathematics and Physical Sciences" (NFS)**, *Université Claude Bernard Lyon 1*, Lyon, France.
- Spring 2015 **Graduate thesis**, *Université Claude Bernard Lyon 1*, Lyon, France.  
Study of symmetric decreasing rearrangements and inequalities following. Thesis written under the supervision of Ivan Gentil.