

# Thibaut Le Gouic

Maître de conférence (Associate Professor)

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[thibautlg.github.io](https://thibautlg.github.io)

French citizen, born on 1987, in Saint-Pierre (974), France

## Academic Employment

2019–2021	<b>Détachement</b> Two years as visiting associate professor at the Massachusetts Institute of Technology, Cambridge, USA
2018–2019	<b>Détachement</b> One year contract of research at the Higher School of Economics, Moscow, Russia
2017–2018	<b>Délégation CNRS</b> Six months research sabbatical awarded by the CNRS (France)
Sept 2014 –	<b>Maître de conférence (Associate Professor)</b> Ecole Centrale de Marseille, Marseille
2013–2014	<b>ATER (1-year contract assistant professor)</b> École centrale de Marseille, Marseille
2010–2013	<b>Moniteur (Teaching assistant)</b> Université Paul Sabatier, Toulouse

## Education

2010–2013	<b>PhD</b> Université Paul Sabatier, Toulouse Title: <i>Mass localization and Wasserstein spaces</i> Advisor: <i>Philippe Berthet</i>
2008–2010	<b>Master de Mathématiques</b> Université Paul Sabatier, Toulouse Mémoire: <i>Quantization and measure transportation for clustering in Banach spaces</i>
2005–2008	<b>Licence de Mathématiques</b> Université Paul Sabatier, Toulouse

### *Scientific activities*

Jun 2019	<b>Ten days long visit with Philippe Rigollet (MIT)</b> Institute of Advanced Study, Princeton (USA)
Feb 2019	<b>Two weeks long visit with Philippe Rigollet (MIT)</b> Institute of Advanced Study, Princeton (USA)
Oct 2017-Mar 2018	<b>Five months research visit at the Higher School of Economics</b> Moscow (Russia)
Sept 2016-July 2017	<b>Responsible of the seminar of statistics</b> <i>Institut de Mathématiques de Marseille</i>
Oct 2016	<b>Two weeks research visit at the Higher School of Economics</b> Moscow (Russia)
May 2016	<b>Selection committee</b> for an assistant professor position at the École Centrale de Casablanca (Morocco)
Jan-Jun 2013	<b>Organisation of a PhD student workshop</b> <i>Institut de Mathématiques de Toulouse</i>
Oct 2012	<b>Organisation of the welcoming day for new PhD students in probability and statistics</b> <i>Institut de Mathématiques de Toulouse</i>
Oct 2012	<b>Organisation of mini-courses between PhD students</b> <i>Institut de Mathématiques de Toulouse</i>
Mars et Nov 2012	<b>Participations at the Hippocampe program: the scientific world for high school students</b> <i>Institut de Recherche pour l'Enseignement des Mathématiques de Toulouse</i>

***Talks at conferences and seminars***

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Oct 2020	<b>Applied Mathematics and Computation Seminar</b> Amherst University, Amherst MA (USA)
Sept 2019	<b>Workshop “Recent advances in mass transportation”</b> Poncelet Center and Higher School of Economics, Moscow (Russia)
Oct 2019	<b>Lecture at seminar course on Optimal Transport</b> Yale University, New Haven CT (USA)
Jul 2018	<b>Mini-course at Conference on Statistical Optimal Transport</b> Skoltech, Moscow (Russia)
Nov 2018	<b>Seminar of Probability and Statistics</b> Université Paris Sud, Orsay (France)
Dec 2017	<b>Invited Session, CFE-CMStatistics meeting</b> University of London, London (UK)
Jul 2017	<b>Journées IOPS - Image, Optimisation, Probabilités et Statistique</b> Institut de Mathématiques de Bordeaux, Bordeaux
Dec 2016	<b>Latin American Congress of Probability and Mathematical Statistics (CLAPEM)</b> San José (Costa Rica)
Oct 2016	<b>Talk on Wasserstein barycenter</b> Faculty of Mathematics, Higher School of Economics, Moscow (Russia)
Oct 2015	<b>2nd conference on Geometric Science of Information</b> Ecole Polytechnique, Paris-Saclay
Jun 2015	<b>Meeting on statistics Avignon-Marseille</b> Université d’Avignon, Avignon
Sept 2014	<b>Seminar of probabilities and statistics</b> I3M, Montpellier
Feb 2014	<b>Seminar of statistics</b> LAREMA, Angers
Jan 2014	<b>Workshop on PDE/Probability</b> LATP, Marseilles
Nov 2013	<b>Seminar of probabilities</b> IMT, Toulouse
Aou 2013	<b>Rencontres des jeunes statisticiens</b> Centre Paul Langevin, Aussois
Juin 2012	<b>Sexto encuentro of Estadística Matemática BoSanTouVal</b> CIEM, Castro Urdiales (Spain)

## PUBLICATIONS AND PREPRINTS

### *Publications*

- [1] S. Chewi, T. Le Gouic, C. Lu, T. Maunu, and P. Rigollet. “SVGD as a Kernelized Wasserstein Gradient Flow of the Chi-Squared Divergence”. In: *NeurIPS* (2020).
- [2] S. Chewi, T. Le Gouic, C. Lu, T. Maunu, P. Rigollet, and A. Stromme. “Exponential Ergodicity of Mirror-Langevin Diffusions”. In: *NeurIPS* (2020).
- [3] A. Ahidar-Coutrix, T. Le Gouic, and Q. Paris. “Convergence Rates for Empirical Barycenters in Metric Spaces: Curvature, Convexity and Extendable Geodesics”. In: *Probability Theory and Related Fields* (2019), pp. 1–46.
- [4] E. Arias-Castro and T. Le Gouic. “Unconstrained and Curvature-Constrained Shortest-Path Distances and Their Approximation”. In: *Discrete & Computational Geometry* 62.1 (2019), pp. 1–28.
- [5] T. Le Gouic. “A Note on Flatness of Non Separable Tangent Cone”. In: *arXiv preprint arXiv:1906.11536* (2019).
- [6] T. Le Gouic and Q. Paris. “A Notion of Stability for K-Means Clustering”. In: *Electronic journal of statistics* 12.2 (2018), pp. 4239–4263.
- [7] T. Le Gouic and J.-M. Loubes. “Existence and Consistency of Wasserstein Barycenters”. In: *Probability Theory and Related Fields* 168.3-4 (2017), pp. 901–917.
- [8] E. Boissard, T. Le Gouic, and J.-M. Loubes. “Distribution’s Template Estimate with Wasserstein Metrics”. In: *Bernoulli* 21.2 (2015), pp. 740–759.
- [9] T. Le Gouic and J.-M. Loubes. “Barycenter in Wasserstein Spaces: Existence and Consistency”. In: *International Conference on Geometric Science of Information*. Springer, 2015, pp. 104–108.
- [10] E. Boissard and T. Le Gouic. “On the Mean Speed of Convergence of Empirical and Occupation Measures in Wasserstein Distance”. In: *Annales de l’IHP Probabilités et Statistiques*. Vol. 50. 2. 2014, pp. 539–563.

### *Preprints*

- [1] T. L. Gouic and J.-M. Loubes. “The Price for Fairness in a Regression Framework”. In: *arXiv preprint arXiv:2005.11720* (2020).
- [2] T. Le Gouic, Q. Paris, P. Rigollet, and A. J. Stromme. “Fast Convergence of Empirical Barycenters in Alexandrov Spaces and the Wasserstein Space”. In: *arXiv preprint arXiv:1908.00828* (2019).
- [3] T. Le Gouic. “Recovering Metric from Full Ordinal Information”. In: *arXiv preprint arXiv:1506.03762* (2015).

## TEACHING

2017–2018	<b>96h service</b> <ul style="list-style-type: none"><li>• courses in probability theory (L3)</li><li>• courses in statistical learning (M2)</li><li>• project tutoring</li></ul>
2016–2017	<b>250h service</b> <ul style="list-style-type: none"><li>• courses in probability theory (L3)</li><li>• courses in statistical learning (M2)</li><li>• courses in statistics (M1)</li><li>• refresher course in probability theory to École Préparatoire teachers in Casablanca</li><li>• project tutoring</li></ul>
2015–2016	<b>314h service</b> <ul style="list-style-type: none"><li>• courses in probability theory (L3,M1)</li><li>• courses in statistical learning (M2)</li><li>• courses in statistics (M1)</li><li>• project tutoring</li></ul>
2014–2015	<b>225h service</b> <ul style="list-style-type: none"><li>• courses in probability theory (L3,M1)</li><li>• courses in statistical learning (M2)</li><li>• courses in statistics (M1)</li><li>• project tutoring</li></ul>
2013–2014	<b>192h service</b> <ul style="list-style-type: none"><li>• courses in probability theory (L3,M1)</li><li>• courses in statistics (M1)</li><li>• project tutoring</li></ul>