

Arnaud GLOTER

Born 03/11/72, in Montreuil - France

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Professional experience

- 2009–Now : Professor in applied mathematics at Université d'Évry Val d'Essonne.
- 2005–2009 : Associate professor in applied mathematics at Université Paris Est Marne–la–Vallée.
- 2000–2005 : Associate professor in applied mathematics at à l'Université Bordeaux 4.

Education

- 2008 : Habilitation à diriger les recherches : "Quelques contributions à la statistique des processus". Université de Marne–la–Vallée.
- 1997–2000 : PhD in statistics at l'Université de Marne–la–Vallée under the supervision of Mme Valentine Genon–Catalot. Thesis title : "Estimation des paramètres d'une diffusion cachée : intégrales de processus de diffusion et modèles à volatilité stochastique".
- 1996 : DEA (Master) Probability and Applications, *Stochastic processes* at Université Pierre et Marie Curie (with highest honours).
- 1995 : Agrégation de Mathématiques (national math examination, rank : 29th).
- Student at Ecole Normale Supérieur de Cachan, from 1992 to 1996.

Research topics

- Statistics for stochastic processes, diffusion processes, Lévy processes, fractional Brownian Motion, multiplicative cascade processes, multifractal processes, stochastic volatility models, skew Brownian motion, microstructure noise, (integrated) volatility estimation
- Limit theorems, asymptotic study of the likelihood processes, LAMN property, Malliavin calculus
- Non-parametric statistics, minimax risk, invariant density estimation for stochastic processes
- Privacy in statistics, local differential privacy
- Numerical scheme for diffusion processes

- C. Amorino, A. Gloter, H. Halconruy. Evolving privacy : drift parameter estimation for discretely observed i.i.d. diffusion processes under LDP, <https://arxiv.org/abs/2401.17829> Submitted (Jan 2024).
- C. Amorino, A. Gloter. Minimax rate for multivariate data under componentwise local differential privacy constraints, Submitted- May 2023. arXiv :2305.10416. Under revision Annals of stat
- A. Gloter, N. Yoshida (2024) Non-adaptive estimation for degenerate diffusion processes To appear in : Theory of Probability and Mathematical Statistics
- C. Amorino, A. Gloter (2022). Malliavin calculus for the optimal estimation of the invariant density of discretely observed diffusions in intermediate regime (Annales de l'Institut Henri Poincaré : Probabilités et Statistiques, under revision <https://arxiv.org/pdf/2208.03253.pdf>)
- C. Amorino, A. Gloter. Estimation of the invariant density for discretely observed diffusion processes : impact of the sampling and of the asynchronicity. Statistics, A Journal of Theoretical and Applied Statistics Volume 57, 2023 - Issue 1, 213-259
- C. Amorino, A. Gloter. Minimax rate of estimation for invariant densities associated to continuous stochastic differential equations over anisotropic Holder classes Scandinavian Journal of statistics, december 2023
- C. Amorino, C. Dion, A. Gloter, S. Lemler, (2022) On the nonparametric inference of coefficients of self-exciting jump-diffusion. Electron. J. Statist. 16(1) : 3212-3277 (2022). DOI : 10.1214/22-EJS2019
- S. Delattre, A. Gloter, N. Yoshida (2022) Rate of estimation for the stationary distribution of stochastic damping Hamiltonian systems with continuous observations. Ann. Inst. H. Poincaré Probab. Statist. 58(4) : 1998-2028.
- Arnaud Gloter, Nakahiro Yoshida (2021) Adaptive estimation for degenerate diffusion processes. Electron. J. Statist. 15(1) : 1424-1472
- Chiara Amorino, Arnaud Gloter (2021) Invariant density adaptive estimation for ergodic jump-diffusion processes over anisotropic classes Journal of Statistical Planning and Inference Volume 213, Pages 106-129
- Amorino, C., Gloter, A. (2020) Joint estimation for volatility and drift parameters of ergodic jump diffusion processes via contrast function. Stat Inference Stoch Process .

- Emmanuelle Clément, Arnaud Gloter. (2020) Joint estimation for SDE driven by locally stable Lévy processes *Electron. J. Statist.* 14(2) : 2922-2956 (2020).
- Chiara Amorino, Arnaud Gloter (2020) Unbiased truncated quadratic variation for volatility estimation in jump diffusion processes *Stochastic Processes and their Applications* Volume 130, Issue 10, October 2020, Pages 5888-5939
- Chiara Amorino, Arnaud Gloter (2020) Contrast function estimation for the drift parameter of ergodic jump diffusion process. *Scandinavian journal of statistics.* Volume47, Issue2 June 2020 Pages 279-346
- A. Gloter, I. Honoré, D. Loukianova (2020) Approximation of the invariant distribution for a class of ergodic jump diffusions, *ESAIM :P&S*, vol.24, p883-931
- E. Clément, A. Gloter (2019) Estimating functions for SDE driven by stable Lévy processes. *Annales de l'Institut Henri Poincaré Probabilités et Statistiques* 55(3) :1316-1348
- E. Clément, A. Gloter, H. Nguyen (2019) LAMN property for the drift and volatility parameters of a SDE driven by a stable Lévy process. *ESAIM :P&S*, vol.23, p136-175
- E. Clément, A. Gloter, H. Nguyen (2018) Asymptotics in small time for the density of a stochastic differential equation driven by a stable Lévy process. *ESAIM :P&S* vol.22 p58 ?95
- A. Gloter, D. Loukianova, H. Mai (2018) Jump Filtering and efficient drift estimation for Lévy driven SDE's. *Annals of Statistics.* Volume 46, Number 4 (2018), 1445-1480
- E. Clément, A. Gloter. (2017) An application of the KMT construction to the pathwise weak error in the Euler approximation of one-dimensional diffusion process with linear diffusion coefficient. *Annals of Applied Probability*, vol 27(4), p.2419-2454
- A. Gloter, M. Martinez. (2016) Bouncing skew Brownian motions *J Theor Probab* doi :10.1007/s10959-016-0719-z.
- E. Clément, A. Gloter. (2015) Local Asymptotic Mixed Normality property for discretely observed stochastic differential equations driven by stable Lévy processes. *Stochastic Processes and Applications*, 125, p. 2316-2352
- E. Clément, S. Delattre, A. Gloter. (2014) Asymptotic lower bounds in estimating jumps *Bernoulli*, 20(3) p. 1059-1096
- M. Falconnet, A. Gloter, D. Loukianova. (2014) Maximum likelihood estimation in the context of a sub-ballistic random walk in a parametric random environment. *Mathematical Methods of Statistics* 23(3), p. 159-175
- A. Gloter, M. Martinez. Distance between two skew Brownian motion as SDE with jumps and law of hitting time. *Annals of probability*, Volume 41, Number 3A (2013), 1628-1655
- E. Clément, S. Delattre, A. Gloter. An infinite dimensional convolution theorem with applications to the efficient estimation of the integrated volatility. *Stochastic Processes and their Applications* 123 (2013) 2500–2521
- E. Clément, A. Gloter. Limit theorems in the Fourier transform method for the estimation of multivariate volatility. *Stochastic Processes and their applications*, vol 121, Page 1097–1124, 2011

- E. Bacry, A. Gloter, M.Hoffmann et J.F. Muzy. Multifractal analysis in a mixed asymptotic framework. *Annals of applied probability*, 20(5) :1729-1760, 2010
- A. Gloter et M.Hoffmann Nonparametric reconstruction of a multifractal function from noisy data. *Probab. Theory Related Fields*, 146(1-2) :155-187, 2010
- A. Gloter et M. Sørensen. Estimation for stochastic differential equations with a small diffusion coefficient. *Stochastic. Process. Appl.*, 119 :679–699, 2009.
- A. Gloter et E. Gobet. LAMN property for hidden processes : The case of integrated diffusions. *Ann. Inst. H. Poincaré Probab. Statist.*, 44 :104–128, 2008.
- E. Bacry, A. Gloter, M.Hoffmann et J.F. Muzy. Long time behavior for the partition function of multiplicative cascades. *Proceedings of IWAP08 (International Workshop on Applied Probability, Compiègne, France, July 2008)*
- A. Gloter et M. Hoffmann Estimation of the Hurst parameter from discrete noisy data. *Ann. Statist.*, 35 :1947–1974, 2007
- A. Gloter. Efficient estimation of drift parameters in stochastic volatility models. *Finance Stoch.*, 11 :495–519, 2007.
- A. Gloter. Parameter Estimation for a discretely observed integrated diffusion process. *Scand. J. Statist.*, 33 :83–104, 2006.
- A. Gloter et M. Hoffmann Stochastic volatility and fractional Brownian motion. *Stochastic. Process. Appl.*, 113 :143–172, 2004
- A. Gloter. Parameter estimation for a discrete sampling of an integrated Ornstein-Uhlenbeck process. *Statistics*, 35 :225–243, 2001.
- A. Gloter et J. Jacod. Diffusion with measurement errors. I. Local asymptotic normality. *ESAIM : Prob. & Stat.*, 5 :225–242, 2001.
- A. Gloter et J. Jacod. Diffusion with measurement errors. II. Optimal estimator. *ESAIM : Prob. & Stat.*, 5 :243–260, 2001.
- A. Gloter. Discrete sampling of an integrated diffusion process and parameter estimation of the diffusion coefficient. *ESAIM : Prob. & Stat.*, 4 :205–227, 2000.
- A. Gloter. Estimation du coefficient de diffusion de la volatilité d'un modèle à volatilité stochastique. *C. R. Acad. Sci., Série I*, 330 :243–248, 2000
- A. Gloter. Estimation des paramètres d'une diffusion cachée : intégrales de processus de diffusions et modèles à volatilité stochastique. *Thèse de l'université de Marne-la-Vallée, rédigée sous la direction de V. Genon-Catalot*, Janvier 2000.

Conference, seminar, invitation : 2010-present

- December 2023 : Invitation CMStatistics 2023 - Berlin (Online)
- July 2023 : 64th ISI World Statistics Congress - Ottawa, Canada
- 6-9 June 2023 : SIAM Conference on Financial Mathematics and Engineering, Philadelphia,
- December 2022 : CMStatistics 2022 - ERCIM - CFE, London,
- December 2021 : Conference CMStatistics 2021 - ERCIM - CFE, London,
- 30 nov-3 dec 2021 : Conference III Jornadas Ecuatorianas en Matemáticas - Equateur (virtual)
- 22-26 Mars 2021 : "Nonlocal Operators and Markov Processes II" conference. Lecture on "Malliavin calculus for jump processes and statistical applications" (Univ. Dresdes, virtual : `prac.im.pwr.wroc.pl/~bogdan/nomp-II.html`)
- December 2020 : Conference CMStatistics 2020 - ERCIM - CFE, London,
- December 2019 : Conference CMStatistics 2019 - ERCIM - CFE, London,
- October 2018 : Invited professor (2 weeks) and conference, Institute of Statistical Mathematics - Tokyo,
- February 2018 : Invited professor (2 weeks) and conference, Tokyo University
- December 2017 : 9 ème conférence française d'économétrie, Discussion on the paper 'Volatility regression with fat tails' by Jihyun Kim & Nour Meddahi
- August 2017 : XXXIV. International Seminar on Stability Problems for Stochastic Models (Debrecen, Hongrie)
- 5-7 April 2017 : 5th to April 7th Dynstoch congress Statistical Methods for Dynamical Stochastic Models (Siegen, Allemagne).
- 2-5 February 2016 : Workshop Frontiers in Stochastic Modelling for Finance, Padoue
- Mars 2015 : Workshop « Statistique Asymptotique des Processus Stochastiques X », Le Mans.
- 7-11 February 2015 : Paris-Southeast Asia Conference in Mathematical Finance, (Siem Reap)
- 10-12 September 2014 : Congres Dynstoch, Statistical Methods for Dynamical Stochastic Models (Warwick)
- 30 June - 3 July 2014 : Invitation au 3ème « Institute of Mathematical Statistics Asia Pacific Rim Meeting » (Taipei)
- 20 March 2014 : Invited to discuss a paper at « 7th Financial Risks International Forum » (Paris)
- 18-19 December 2013 : Workshop "Statistics for Stochastic Processes and Analysis of High Frequency Data", Organisé par Université Paris 6 et Université de Tokyo (Paris)
- 12-13 March 2013 : 5th Florence-Ritsumeikan workshop on Stochastic Processes and Applications to Finance and Risk Management (Florence)
- August 2012 : Journée MAS, session "Statistique des processus de Lévy et des diffusions".
- 7-9 June 2012 : congrès Dynstoch Statistical Methods for Dynamical Stochastic Models (Paris)
- December 2011 : Conference "Computational and Financial Econometrics" (CFE'11, London).
- June 2011 : Conference "Statistics and Modeling for Complex Data", Marne la Vallée, (présentation et organisation de la session "Statistics for finance")
- 21-24 Mars 2011 : Workshop "Statistique Asymptotique des Processus Stochastiques VIII" (Le Mans).
- 12 avril 2010 : Ecole Polytechnique. Seminar FIESTA ("Financial Risk" chair)
- 18 fev-5 mars 2010 : Invited professor Tokyo university. Participation at the Workshop "*Stochastic Analysis and Statistical Inference V*" (Tokyo)

Teaching experience

- 2009-présent. Teaching at the *Université d'Evry*.
 - Lecture "Intro à l'économétrie financière" Master 2 *Ingénierie financière*, 12h.
 - Lecture "Traitement des données de marché : aspects statistiques" Master 2 *Ingénierie financière*, 12h.
 - Lecture "Probabilités" Master 1 *Ingénierie Mathématique*, 36h(C/TD).
 - Lecture and practical classes "Mise à niveau en C" Master 1 *Ingénierie Mathématique*, 26h.
 - Lecture "Espace de Hilbert" *L3 Mathématiques*, 19,5h.
 - Lecture "Compléments d'Analyse" *L2 Mathématiques*, 19,5h
 - Lecture "Modélisations et applications" *L2 Mathématiques*, 10hC+10hTD
- 2005-2009. Teaching at the *Université de Marne-la-Vallée*.
 - Lecture "Traitement des données de marché : aspects statistiques" Master 2 *Mathématiques et Applications*, 12h.
 - Lecture and practical classes "Analyse des données sous SAS" Master 1 *Ingénierie Mathématique, Informatique et Statistique*, 42h.
 - TD "Statistiques empiriques" Master 1 *Ingénierie Mathématique, Informatique et Statistique*, 24h.
 - TD "Probabilités" Licence L3 *Mathématiques*, 36h.
 - Lecture and tutorials "Probabilité et statistique" Licence L2, *Sciences de la Matière*, 30h.
 - Lecture and tutorials "Analyse" Licence L2, *Sciences de la Matière*, 60H.
- 2000-2004. Teaching at the *l'université Bordeaux IV*.
 - Lecture "Math financières" Master 1 *Ingénierie Économique*, 20h.
 - Lecture "Séries temporelles", Master 1 *Ingénierie Économique*, 20h.
 - Lecture "Statistiques", Master 1 *Ingénierie Économique*, 20h.
 - Lecture "Optimisation" Maîtrise *d'Économétrie*, 20h.
 - Lecture "Optimisation dynamique", maîtrise *d'Économétrie*, 20h.
 - Lecture "Méthodes numériques", Maîtrise *d'Économétrie*, 8h.
- 1997–2000 Teaching as PhD student at *Université Paris 12 Creteil*

Doctoral advisement

- Advisor of Chiara Amorino thesis defended in July 2020.
- Co-advisor (50 %) of Huong Nguyen thesis defened in December 2018 (*co-adviser : Emmanuelle Clément, UPEM*).

Academic responsibilities

- April 2022–present : (co-)Editor in chief « Statistical inference for stochastic processes ». <https://www.springer.com/journal/11203>
- January 2022–present : Head of the mathematics department of the Université d'Évry. <http://www.math-evry.cnrs.fr/departement/doku.php>
- September 2022–present : Head of the first year master program in Mathematics Université d'Évry - Paris Saclay (site Saclay)
- January 2014–december 2019 : Head of the lab « Laboratoire de Mathématiques et Modélisation d'Évry ». <http://www.math-evry.cnrs.fr/>
- September 2010–august 2023 : Head of the first year master program in Mathematics Université d'Évry
- January 2015 - October 2018 : Elected member of the research council. Université d'Évry.
- 2012- Jan 2015 : Elected member of the teaching council. Université d'Évry.
- Referee for H.D.R. (doctoral habilitation) of Mme Céline Duval (2020, Université de Paris)
- Referee for the PhD thesis of M. J.B. Monnier (2011, Université Paris Diderot) ; the PhD thesis of M. Qidi Peng (2011, Université de Lille) ; the PhD thesis of de Romain Guy (2013, Université Paris Diderot) ; the PhD thesis of Nina Munkholt Jacobsen (2015, Université de Copenhague) ; the PhD thesis of Clément Rey (2015, ENPC) ;the PhD thesis of Pierre Gruet (2015, Université Paris Diderot) ; the PhD thesis of Emil Jorgensen (2017, Université de Copenhague), the PhD thesis of d'Anna Melnykova (2020, Université de Cergy).
- Jury member for the the PhD thesis of M. Benjamin Favetto (2010, Université Paris Descartes) ; of Emeline Schmisser (2010, Université Paris Descartes) ; of Huang Lorick (2015, Université Paris Sorbonne) ; of Igor Honoré (2018, Université d'Évry)
- Referee for *Annales de l'IHP*, *Annals of stat.*, *Annals of the institute of statistical mathematics* *Computational statistics and data analysis*, *Economic notes*, *Electronic journal of statistics*, *ESAIM P & S*, *Finance and stochatics*, *Journal of econometrics*, *Journal of the american statistical association*, *Journal of nonparametric statistics*, *Journal of multivariate analysis*, *Journal of statistical planning and inference*, *Latin American Journal of Probability and Mathematical Statistics*, *Mathematics of Computation*, *Quantitative finance*, *Scandinavian journal of stat.*, *Stat. and proba. letters*, *Statistic and decision*, *Statistical Inference for Stochastic Processes*, *Stochastic processes and applications*,...