Dylan Possamaï [*]

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Curriculum Vitæ

Employment and education

- **Since September 2017:** Assistant Professor of Industrial Engineering and Operations Research at Columbia University.
- **December 2016:** Habilitation à diriger des Recherches at Université Paris–Dauphine, Paris, France.
- **Since September 2016:** Chercheur associé at the FIME laboratory of EDF, France.
- **September 2015–September 2016:** Professeur chargé de cours at École Polytechnique, Palaiseau, France.
- **September 2012–September 2017:** Assistant Professor at Université Paris–Dauphine, Paris, France.
- **January 2012–August 2012:** Postdoctoral fellow at École Polytechnique, Palaiseau, France.
- **October 2009–December 2011:** PhD thesis at École Polytechnique, Palaiseau, France.
- **September 2008–August 2009:** Master's degree "Probabilités et Finance" at UPMC Sorbonne Universités, Paris, France.
- **August 2005–August 2009:** Engineering degree at École Polytechnique, Palaiseau, France.

Visiting positions and extended visits

- Visiting professor, ETH Zürich, Zürich, Switzerland, February–March 2013.
- Technische Universität Berlin, Berlin, Germany, April 2013.
- Visiting professor, ETH Zürich, Zürich, Switzerland, February–March 2014.
- National University of Singapore, Singapore, April 2014.
- Technische Universität Berlin, Berlin, Germany, April 2015.
- National University of Singapore, Singapore, July 2015.
- Visiting professor, ETH Zürich, Zürich, Switzerland, February–May 2017.

Industry experience

- Quantitative analyst internship, Pricing Partners, Paris, France, April–September 2009: design and implementation of pricing, discretisation and calibration modules for multi–factor stochastic volatility models (double Heston, Wishart).
- Quantitative analyst internship, Société Générale, Paris, France, April–August 2008: design and implementation of volatility arbitrage strategies using multi–fractal random walks models.

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Comprehensive list of publications

Publications in peer–reviewed international journals

[1] B. Bouchard, D. Possamaï, X. Tan, and C. Zhou. A unified approach to *a priori* estimates for supersolutions of BSDEs in general filtrations. *Annales de l'Institut Henri Poincaré, Probabilités et Statistiques* (B), 54(1):154–172, 2018.

[2] B. Bouchard, D. Possamaï, and X. Tan. A general Doob–Meyer–Mertens decomposition for $g-$supermartingale systems. *Electronic Journal of Probability*, 21(36):1–21, 2016.

[3] J. Cvitanić, D. Possamaï, and N. Touzi. Moral hazard in dynamic risk management. *Management Science*, 63(10):3328–3346, 2017.

[4] J. Cvitanić, D. Possamaï, and N. Touzi. Dynamic programming approach to principal–agent problems. *Finance and Stochastics*, 22(1):1–37, 2018.

[5] R. Élie, T. Mastrolia, and D. Possamaï. A tale of a principal and many many agents. *Mathematics of Operations Research*, to appear, 2016.

[6] P. Imkeller, T. Mastrolia, D. Possamaï, and A. Réveillac. A note on the Malliavin–Sobolev spaces. *Statistics & Probability Letters*, 109:45–53, 2015.

[7] M. Jeanblanc, T. Mastrolia, D. Possamaï, and A. Réveillac. Utility maximization with random horizon: a BSDE approach. *International Journal of Theoretical and Applied Finance*, 18(7):1550045, 2015.

[8] N. Kazi-Tani, D. Possamaï, and C. Zhou. Quadratic BSDEs with jumps: related nonlinear expectations. *Stochastics and Dynamics*, 16(4):1650012, 2015.

[9] N. Kazi-Tani, D. Possamaï, and C. Zhou. Quadratic BSDEs with jumps: a fixed–point approach. *Electronic Journal of Probability*, 20(66):1–28, 2015.

[10] N. Kazi-Tani, D. Possamaï, and C. Zhou. Second–order BSDEs with jumps: formulation and uniqueness. *The Annals of Applied Probability*, 25(5):2867–2908, 2015.

[11] N. Kazi-Tani, D. Possamaï, and C. Zhou. Second order BSDEs with jumps: existence and probabilistic representation for fully–nonlinear PIDEs. *Electronic Journal of Probability*, 20(65):1–31, 2015.

[12] T. Mastrolia, and D. Possamaï. Moral hazard under ambiguity. *Journal of Optimization Theory and Applications*), to appear, 2015.

[13] T. Mastrolia, D. Possamaï, and A. Réveillac. Density analysis of BSDEs. *The Annals of Probability*, 44(4):2817–2857, 2016.

[14] T. Mastrolia, D. Possamaï, and A. Réveillac. On the Malliavin differentiability of BSDEs. *Annales de l'Institut Henri Poincaré, Probabilités et Statistiques* (B), 53(1):464–492, 2017.

[15] A. Matoussi, L. Piozin, and D. Possamaï. Second–order BSDEs with general reflection and game options under uncertainty. *Stochastic Processes and their Applications*, 124(7):2281–2321, 2014.

[16] A. Matoussi, D. Possamaï, and C. Zhou. Second order reflected backward stochastic differential equations. *The Annals of Applied Probability*, 23(6):2420–2457, 2013.

[17] A. Matoussi, D. Possamaï, and C. Zhou. Robust utility maximization in nondominated models with 2BSDE: the uncertain volatility model. *Mathematical Finance*, 25(2):258–287, 2015.

[18] H. Pagès, and D. Possamaï. A mathematical treatment of bank monitoring incentives. *Finance and Stochastics*, 18(1):39–73, 2014.

[19] D. Possamaï. Second order backward stochastic differential equations under a monotonicity condition. *Stochastic Processes and their Applications*, 123(5):1521–1545, 2013.

[20] D. Possamaï, and G. Royer. General indifference pricing with small transaction costs. *Asymptotic Analysis*, 102(3-4):177–226, 2017.

[21] D. Possamaï, G. Royer, and N. Touzi. On the robust superhedging of measurable claims. *Electronic Communications in Probability*, 18(95):1–13, 2013.

[22] D. Possamaï, H.M. Soner, and N. Touzi. Large liquidity expansion of super–hedging costs. *Asymptotic Analysis*, 79(1–2):45–64, 2013.

[23] D. Possamaï, H.M. Soner, and N. Touzi. Homogenization and asymptotics for small transaction costs: the multidimensional case. *Communications in Partial Differential Equations*, 40(11):2005–2046, 2015.

[24] D. Possamaï, and X. Tan. Weak approximation of second–order BSDEs. *The Annals of Applied Probability*, 25(2):2535–2562, 2015.

[25] D. Possamaï, X. Tan, and C. Zhou. Stochastic control for a class of nonlinear kernels and applications. *The Annals of Probability*, to appear, 2015.

[26] D. Possamaï, and C. Zhou. Second order backward stochastic differential equations with quadratic growth. *Stochastic Processes and their Applications*, 123(10):3770–3799, 2013.

Preprints

[27] R. Aïd, D. Possamaï, and N. Touzi. Optimal trading of volatility risk in electricity markets. Preprint, 2018.

[28] C. Alasseur, I. Ekeland, R. Élie, N. Hernández Santibáñez, and D. Possamaï. Adverse selection approach to optimal electricity pricing, *arXiv preprint arXiv:1706.01934*.

[29] R. Élie, L. Moreau, and D. Possamaï. On a class of path–dependent singular stochastic control problems. preprint, *arXiv preprint arXiv:1701.08861*, 2017 (in revision for *SIAM Journal on Control and Optimization*).

[30] R. Élie, and D. Possamaï. Contracting theory with competitive interacting agents. *arXiv preprint arXiv:1605.08099*, 2016 (in revision for *SIAM Journal on Control and Optimization*).

[31] N. Hernández Santibáñez, D. Possamaï, and C. Zhou. Bank monitoring incentives under moral hazard and adverse selection. *arXiv preprint arXiv:1701.05864*, 2017.

[32] A. Matoussi, D. Possamaï, and W. Sabbagh. Probabilistic interpretation for solutions of fully nonlinear stochastic PDEs. *arXiv preprint arXiv:1412.5548*, 2014 (in revision for *Probability Theory and Related Fields*).

[33] A. Papapantoleon, D. Possamaï, and A. Saplaouras. Existence and uniqueness for BSDEs with jumps: the whole nine yards. *arXiv preprint arXiv:1607.04214*, 2016 (in revision for *Electronic Journal of Probability*).

Patents

Together with René Aïd (Université Paris–Dauphine) and Nizar Touzi (École Polytechnique), we filed a patent titled **"Procédé de gestion des contraintes de flexibilité d'un système production–consommation d'électricité par le contrôle de la variance de la consommation"**, (demand number 1657868) based on the work [27] of the above list.

Working papers

[34] R. Carmona, D. Possamaï, and N. Touzi. Moral hazard with mean–field interactions.

[35] N. Kazi-Tani, and D. Possamaï. Overreacting random walks tend to become amnesic.

[36] H. Pagès, and D. Possamaï. Option prices with uncertain fundamentals.

[37] A. Papapantoleon, D. Possamaï, and A. Saplaouras. Stability results for martingale representations: the general case.

[38] A. Papapantoleon, D. Possamaï, and A. Saplaouras. BSDEs with jumps are robust.

[39] D. Possamaï, A. Réveillac, and S. Villeneuve. Holmström and Milgrom model with limited liability.

[40] D. Possamaï, N. Touzi, and J. Zhang. Zero–sum path–dependent stochastic differential games in weak formulation.

Technical reports

[41] P. Gauthier, and D. Possamaï (2010). Efficient simulation of the double Heston model. *SSRN Working Paper Series*.

[42] P. Gauthier, and D. Possamaï (2010). Efficient simulation of the Wishart model. *SSRN Working Paper Series*.

[43] P. Gauthier, and D. Possamaï (2010). Prices expansions in the Wishart model. *SSRN Working Paper Series*.