Curriculum Vitae
Cristina DI GIROLAMI

Nationality: Italian
Date and place of birth : October 5th, 1980, San Benedetto del Tronto (Italy).
email: c.digirolami@unich.it, Cristina.Di_Girolami@univ-lemans.fr, cristina.di.girolami@gmail.com
tel: 0039 328 45 94 176 (italian), 0033 7 66 50 67 19 (french),

Education-Titles

- October 2012 - present: **Assistant Professor (ricercatrice)**, permanent position, in Mathematics for Economics at University of Chieti-Pescara (Italy).
  Laboratory of Neuropsychology and Cognitive Neuroscience Dept. of Neuroscience and Imaging and ITAB -Institute of Advanced Biomedical Technologies
- September 2018-August 2021 : **Maître de Conférence** permanent position at the University du Maine, équipe **Finance, Probabilités et Processus Stochastiques** (France).
- March 2014 - November 2014 : Fellowship **Marie Curie Cofund, 7e PCRD** Brauder Outgoing, financial support from European Commission and Fondation Maison des Sciences de l'Homme. Location: LUISS Guido Carli, Roma.
- February 2011: National Qualification (ASN) of the French University System required for **Maître de Conférence** permanent position.
- January 2010-August 2011: Post-doc research position (Assegno) in **Macroenomia and Mathematical Methods for Economics** at Università LUISS Guido Carli (Italy).
- 2007- July 5th, 2010 : **PhD in Mathematics**, Université Paris 13 (France) in cotutelle with LUISS Rome (Italy).
- 2005- July 5th, 2010 : **PhD in Mathematical Methods for Economics, Finance, Industry and Insurance**, Università LUISS Guido Carli (Italy).
- July 2005 : Master of Advanced Studies on Financial Mathematics Università di Bologna, **Corso di Alta Formazione in Finanza Matematica** with prof. Andrea Pascucci.
- July 2004 : Master's degree on Mathematics with 110/110 cum laude.
- July 1999 : Scientific high school degree with 100/100.

Position Held

- October 2012- present: **Assistant Professor** in Mathematics for Finance in S.S.D. SECS-S/06 (permanent position) in the University of Chieti-Pescara (Italy).
- September 2018-August 2021 : **Maître de Conférence** permanent position at the University du Maine, équipe **Finance, Probabilités et Processus Stochastiques** (France).
- March 2014 - November 2014 : Fellowship **Marie Curie Cofund, 7e PCRD** Brauder Outgoing, financial support from European Commission and Fondation Maison des Sciences de l'Homme. Location: LUISS Guido Carli, Roma.
- January 2010-August 2011: Post-doc research position (Assegno) in Macroenomia and Mathematical Methods for Economics at Università LUISS Guido Carli (Italy).
- Sept 2009-August 2010 : Attaché Temporaire Enseignement Recherche (Assistant Professor) of Mathematical Economics, Université Marne La Vallée.
- Sept 2007-August 2008 : Attaché Temporaire Enseignement Recherche (Assistant Professor) of Mathematical Economics, Université Paris 13.
- Dec 2004-July 2005 : Internship, CAPITALIA (UNICREDIT) Investement Bank, Quantitative Finance Group, Rome.
- Dec 2004-July 2005 : **Internship**, CAPITALIA (UNICREDIT) Investement Bank, Quantitative Finance Group, Rome. Subject of the stage: **Pricing and Hedging for inflation linked products. Pricing with Libor Market Model and parameter's estimation with MATLAB.**

Languages

- English: good,
- French: fluent,
- Spanish: good,
- Italian: mother tongue.

Skills:

- Programming: `C`, `C++`, `R`, Matlab, Scilab, Pascal VBA, Office (Word, Excel,..), Latex.
- Operating systems: Windows, Linux, Mac, iOS.

Honors, Grants, Awards and Projects

- 2014 GNAMPA Project, Title: "Modelli di crescita in economia con ritardo e problemi di ottimizzazione". Cohordinator: Salvatore FEDERICO (Università degli Studi di Milano).
- 2009 - 2010 Projet INRIA MATHFI - Financial Mathematics. Team Paris - Rocquencourt. Cohordinator: Agnès SULEM.
- Scolarship SETCI Île de France 2007-2010.
- Scolarship from AMaMeF (Advanced Mathematical Methods in Finance), 2009-2010.
- Scolarship from EGIDE, Bourses d'excellence Eiffel, France, 2008-2009.
- Scolarship from Università di Bologna for the advanced Master on Mathematical Finance, 2004-2005.

Didactical activity (M=Master o Laurea Specialistica, L=Licence o laurea Triennale)

- September 2015 - September 2016 University LUISS Guido Carli
  - Matematica Finanziaria Avanzato in M1 (Cours+TD da 9 CFU=81 hours)
  - Mathematics 2 en L3. (Cours +TD+TP da 3 CFU= 27 hours)
- December 2014 - now University of Chieti-Pescara
  - Metodi quantitativi e strumenti di analisi per le decisioni en M1 (Cours+TD da 9 CFU=81 hours)
  - Finanza con Excel en L3. (Cours +TD+TP da 3 CFU= 27 hours)
- September 2013 - January 2014 University of Chieti-Pescara
  - Matematica per l'economia e le applicazioni finanziarie. (Cours+TD da 12 CFU=108 hours)
- December 2012-August 2013 University of Chieti-Pescara and
  Sept 2012-November 2012, Maître de Conférence at University du Maine.
  - Monte Carlo methods in finance, M1 Math-Appl. et Finance. (TD, 20.5 hours)
  - Équations aux Dérivées Partielles et Méthodes Numeriques en Finance (TD, 20.5 hours).
  - An. convexe et applications en Finance, L3 Math. (Cours, 10 hours)
  - Probabilités, L2 Éco-Gestion. (Cours+TD, 32.5 hours)
  - Probabilités et Statistiques, L2 Sciences pour Ingénieur. (Cours+TD+TP, 24 hours)
  - Analyse fonctionnelle, L3 Econ-Gest. (26 hours)
  - Calcul différentiel et intégral, L1 Sciences pour Ingénieur (Cours+TD 18 hours)
- Sept 2011-August 2012 Maître de Conférence at University du Maine.
  - Èquations aux Dérivées Partielles et Méthodes Numériques, M1 Math-Application et Fiannce. (TD, 20.5 hours)
  - Analyse convexe et applications en Economie et Finance, L3 Mathématiques (TD, 15 hours)
  - Probabilités, L2 Éco-Gestion. (Cours+TD, 32.5 hours)
  - Probabilités et Statistiques, L2 Sciences pour Ingénieur. (Cours+TD+TP, 24 hours)
  - Analyse fonctionnelle, L3 Economie-Gestion (26 hours)
  - Calcul différentiel et intégral, L1 Sciences pour Ingénieur (Cours-TD 18 hours)
- Sept 2009-August 2010 ATER à l'Université de Marne la Vallée.
  - Calcul différentiel et intégral,, L1 Math-Info (TD, 72 hours)
  - Probabilités, L2 Math-Info (Cours+TD, 72 hours)
  - Analyse, L1 Math-Info (36 hours)
  - Algèbre, L2 Science matériaux (12 hours)
- Sept 2008 - August 2009 Enseignante vacataire à l'Université de Paris X, Nanterre.
  - Statistiques,L2 L3 Économie-Gestion (TD, 56 hours)
- Sept 2007-August 2008 ATER (demi-poste) à l'Université de Paris 13,,
  - Analyse Statistique, L3 Économie-Gestion (36 hours)
  - Probabilités et Statistiques, L2 UFR (36 hours).
  - Théorie de l'intégration et Probabilités, L3 (24 hours)
- Sept 2006 - August 2007 Enseignante Vacataire à l'Université Paris X, Nanterre.
  - Statistique descriptive, L1 (TD, 36 hours)

Research topics

- Stochastic processes for modeling finance products.
- Pricing and hedging.
- Validation models.
- Mathematical Finance, stochastic volatility.
- Affine Term Structure models.

- Infinite dimension calculus via regularization.
- Stochastic Control and Fukushima-Dirichlet decomposition.
- VeriÞcation theorem in control problems in the framework of delay equations.

Publications and submitted papers

- Di Girolami C. and Russo F. (2019) *About classical solutions of the path-dependent heat equation* Random Operators and Stochastic Equations., 2020; 28(3):1-30.
  Available on *https://arxiv.org/abs/1804.03845* . https://doi.org/10.1515/rose.
- Arrigoni B. and Di Girolami C. and Peccati L. (2018) *La valutazione degli indizi secondo il Cardinale Newman: dalla Teologia al Diritto*, Cassazione Penale, n.10, 2018.

- Cosso A., Di Girolami C. and Russo F. (2016) *Calculus via regularizations in Banach spaces and Kolmogorov-type path-dependent equations.* Contemporary Mathematics.
  2016: Volume 668 ISBNs: 978-1-4704-1945-5 (print);
  978-1-4704-3473-1 (online) DOI: http://dx.doi.org/10.1090/conm/668
- Di Girolami C. and Gozzi F. *Solutions of second order HJB equations in Hilbert spaces via smoothing property* (Submitted).
- Bambi M., Di Girolami C., Federico S. and Gozzi F. *Generically distributed investments on flexible projects and endogenous growth.* Economic Theory, 2015, DOI 10.1007/s00199-015-0946-z.
- Di Girolami C. and Russo F. *Generalized covariation for Banach space valued processes, Itô formula and applications.* Osaka Journal of Mathematics, 51 (3), 2014.
  Available at arxiv *http://arxiv.org/abs/1012.2484v3.* (45 pages).
- Fabbri G. and Di Girolami C. and Russo F. (2013) *The covariation for Banach space valued processes and applications.* Metrika: Volume 77, Issue 1 (2014), Page 51-104 . DOI :10.1007/s00184-013-0472-6.
  Available at arxiv *http://fr.arxiv.org/abs/1301.5715* (45 pages).
- Di Girolami C. and Russo F. *Generalized covariation and extended Fukushima decompositions for Banach space valued processes. Applications to windows of Dirichlet processes.* Infinite Dimensional Analysis, Quantum Probability and Related Topics (IDAQP) 15 (2012), no. 2, 1250007, 50 pp. (48 pages).
- Coviello R. and Di Girolami C. and Russo F. *On stochastic calculus related to financial assets without semimartingales.* Bulletin des Sciences Mathématiques, 135(6-7): 733-774, 2011. (42 pages).
- Di Girolami C. and Russo F. *Clark-Ocone type formula for non-semimartingales with finite quadratic variation.* Notes aux Comptes Rendus de l'Académie des Sciences. Séries mathématiques 349(3-4):209-214, 2011.

Working papers and Preprints

- Di Girolami C. and Russo F. *Infinite dimensional stochastic calculus via regularization and applications.* Preprint available at HAL-INRIA *http://hal.archives-ouvertes.fr/inria-00473947/fr/* and BiBos Bielefeld Preprint 10-04-343 *http://www.math.uni-bielefeld.de/ bibos/preprints/10-04-343.pdf* (187 pages).
- Di Girolami C. and Russo F. *Kolmogorov PDE equation associated to window processes, the Brownian path dependent case.* In preparation.
- Di Girolami C. and Russo F. *Kolmogorov PDE for path dependent financial options, the general path dependent case.* In preparation.

Technical reports

- Di Girolami C. and Papi M. *Dependence on macroeconomical variables of the term structure model*, technical report.
- *A model for pricing Inflation-linked products via a Libor Market Model. Implementation on MATLAB*, technical report, joint work with Marco Ganz, Marcello Paris in CAPITALIA, gruppo Bancario.

Referee

- Referee for *Journal of Public Economic Theory*,
- Referee for *Electronical Journal of Probability.*

PhD Programs

- Member of Professors for PhD program at University of Chieti-Pescara. Title: *Accounting, Management and Finance.*

Events

- June 2015: Organizer and Inviting Prof. Lucio Rossi from CERN (Centro Europeo di Ricerca Nucleare, Ginevra), for two public meetings in Chieti e Pescara about Science and Research of Truth.

Visiting Positions

- Visiting Professor at Università degli Studi di Pisa, Italy, August and December 2012.
- Visiting Professor at Ecole Polytechnique Fédérale de Lausanne (Switzerland), 10th-27th February 2012 and 19th-29th March 2012.
- Visiting Professor, at Università degli Studi di Pisa, Italy, January 2012 and February 2011.
- Visiting at École Nationale Supérieure des Techniques Avancées, Unité de Mathématiques appliquées, Paris, September 2010-August 2011.
- Visiting PhD student, Isaac Newton Institute for Mathematical Science, Cambridge University during the Stochastic Partial Differential Equations semester, April 2010.
- Visiting PhD student, Ecole Polytechnique Fédérale de Lausanne (Switzerland), spring 2008.
- Visiting PhD student, Bielefeld University (Germany), summers 2009, 2008, 2007.
- Visiting PhD student, Université Paris 13, Sept 2005-April 2006.
- Summer School in Finance and Statistiques at Dalhousie University of Halifax (Nova Scotia-Canada), summer 2005.
- Visiting student, Universidad Complutence Madrid (Spain), Sept 2003-April 2004.

Invited Talks/Conferences/Seminars

- Seminar at Dipartimento Metodi e Modelli per l'Economia, il Territorio e la Finanza, Università La Sapienza, 4th May 2016, Rome (Italy).
- Main speaker *Giovani in Ricerca*, 8 April 2016, Riva del Garda (Italia).
- Seminar during *The 1st Symposium on Quantitative Finance and Risk Analysis (QFRA2015).* 11-12 June 2015, Santorini (Greece).
- Seminar during *13th Viennese Workshop Optimal Control and Dynamic Games* 13-16 May 2015, Vienna (Austria).
- Main speaker *Giovani in Ricerca*, 17 April 2015, Riva del Garda (Italia).
- Seminar during Conference *Interacting particle systems in thermodynamic models.* 26-30 January, 2015, Gran Sasso Science Institute (GSSI) at L'Aquila (Italia).
- Seminar during *Stocastics of Environmental and Financial Economics*,14-21 September 2014, Oslo (Norway).
- Seminar during *New Trends in Optimal Control*, 23-27 June 2014, Tours (France).
- Seminar during *Young Women in Probability* 25-28 May 2014, Bonn (Germany).

- Seminar 6 Febryary 2014 al Department of Mathematics at Università Bicocca di Milano (Italy).
- Seminar during l'*Incontro su SDE con memoria e argomenti correlati*, 21th-22th January 2014, Università degli Studi di Pisa, Pisa (Italy).
- Seminar all'*Oxford-Man Institute*, 18th November 2013, University of Oxford, Oxford Man Institute (United Kingdom).
- Seminar during workshop *Nachwuchsforscherinnen in Stochastik, Junior female researchers in probability*, 10th and 11th October 2013, Berlin and Postdam (Germany).
- Seminar during the **Sino-French Research Program in Financial Mathematics, Workshop on Financial Mathematics and Numerical Probability** at Beijing International Center for Mathematical Research, Peking University (China), June 20th, 2013.
- Seminar **Research group** at *Università degli Studi di Bologna, Dipartimento di Matematica*, Bologna (Italy), 26th March, 2013.
- Seminar **Bachelier** at *Institut Henry Poincaré*, Paris (France) 8th February, 2013.
- Seminar at LUISS Guido Carli, Rome (Italy), Department of Economic, 15th January, 2013.
- Seminario at Università degli Studi di Bologna, 24th July, 2012.
- Seminar during *Research School on Controllability of Deterministic and Stochastic Systems and its Applications* Iasi (Romania), 25th June 2012.
- Seminar during the semester on *Recent Developments on Stochastic Analysis* École Polytecnique Féderale Lausanne, (Switzerland), 23th March 2012.
- Séminaire triangulaire nouveaux recrutés de Pays de la Loire, 30 September, 2011, Nantes (France).
- XXXV (35th) Convegno annuale Associazione Matematica Applicata delle Scienze Economiche e Sociali AMASES 2011, 15-17 September, 2011, Pisa (Italy).
- 7th *International Congress on Industrial and Applied Mathematics* - ICIAM 2011, 18-22 July, 2011, Vancouver (Canada).
- Séminaire de Probabilités et Statistiques de l'Université de Marseille, France, April 15th, 2011.
- Séminaire de Probabilités de l'Université de Lille, France, April 11th, 2011.
- Séminaire de Probabilités de l'Université de Lille, France, March 23rd, 2011.
- Séminaire de Probabilités de l'Université de Nice, France, February 17th, 2011.
- Séminaire de Probabilités et Mathématiques Financières de l'Université d'Evry, France, January 13rd, 2011.
- Séminaire de Probabilités et Statistiques de l'Université du Maine, France, December 2nd, 2010.
- Séminaire equipe de "Probabilités, Statistiques et Réseaux de Neurone" et "Mathématiques des Systèmes Complexes" de Paris 1, November 5th, 2010.
- 34th Conference on *Stochastic Processes and Their Applications*, 6-10 September, 2010, Osaka (Japan).
- XXXIV (34th) Convegno annuale Associazione Matematica Applicata delle Scienze Economiche e Sociali AMASES 2010, 1-4 September, 2010, Macerata (Italy).
- Third SMAI European *Summer School in Financial Mathematics*, 23-27 August, 2010, Paris.
- Séminaire equipe de Probabilités et Statistiques de Paris 13, Juin 23th, 2010.
- Séminaire de doctorants CERMICS **ENPC**, Juin 7th, 2010.
- The Fifth General Conference on *Advanced Mathematical Methods in Finance* AMaMeF 2010, May 4th-8th, 2010, Bled, Slovenia.
- *Infinite dimensional stochastic calculus via regularization with some financial perspectives*, March 26th, 2010, Groupe de Travail "Méthodes Stochastiques et Finance" **ENPC - INRIA - UPEMLV**.

Participation to Conferences and Schools

- *XXI WORKSHOP ON QUANTITATIVE FINANCE, Napoli, Italy, 29-31 January, 2020.*
- 9th General AMAMEF Conference, Paris, France, 11-14 Juin 2019.
- *Conférence en l'honneur des 3x25 ans de Nicole El Karoui, Paris, France, 21-24 May 2019.*
- Workshop New Frontiers in Stochastics for Economics and Finance, Siena, Italy, May 30-June 01, 2019.
- *Winter School on "Stochastic PDEs and Mean-Field Games" , Bologna, Italy, 13-16 January 2019.*
- Developments in Stochastic Partial Differential Equations in honour of Giuseppe Da Prato, Varese, Italy, 22-29 July 2018.
- *Stochastic modeling and financial applications, Verona, June 11-14, 2018.*
- Seminar at London School of Economics, 15th February, 2018.
- *XIX WORKSHOP ON QUANTITATIVE FINANCE, Università Roma Tre, 24-26 January 2018.*
- I Gran Sasso Workshop in Mathematical Finance, L'Aquila, Italiy, 27-29 Sept 2017.
- *First Italian Meeting on Probability and Mathematical Statistics, Torino, Italy, 19-22 June, 2017.*
- XVIII WORKSHOP ON QUANTITATIVE FINANCE, Università degli Studi Milano Bicocca, 25-27 January,, 2017.
- 9^{th} *World Congress of the Bachelier Finance Society at the Crown Plaza Times Square Manhattan, 13-20 July 2016, New York (USA).*
- Convegno Scientifico Gnampa/INDAM 20-23 June 2016, Montecatini Teme (Italiy).
- *Spring School Finance 2016, 10-12 March 2016, Bologna (Italia).*
- *International Conference* Frontiers in Stochastic Models for Finance, 2-5 February 2016, Padova e Venezia (Italia).
- *XVII Workshop on Quantitative Finance, Scuola Normale Superiore, Palazzo della Carovana, 28-29 January Pisa (Italy).*
- I Energy Finance Italiy*,10-11 December 2015, Camerino (Italy)*
- The 1^{st} Symposium on Quantitative Finance and Risk Analysis (QFRA2015). *11-12 June 2015, Santorini (Greece).*
- *Conference* 13^{th} Viennese Workshop Optimal Control and Dynamic Games *13-16 May 2015, Vienna (Austria).*
- Giovani in Ricerca*, 17 April 2015, Riva del Garda (Italy).*
- *Conference* Nella nostra ricerca cos'è la verità? Come possiamo essere certi? Ci può essere vera conoscenza senza affezione? *26-28 Febbraio 2015,* ***CERN di Ginevra****, Centro Europeo di Ricerca Nucleare, Svizzera.*
- *Conference* Interacting particle systems in thermodynamic models*, 26th-30th January, 2015, Gran Sasso Science Institute (GSSI) at L'Aquila (Italy).*
- *Workshop* Applications of Path Dependent Stochastic Differential Equations in Finance*, 22-23 Gennaio 2015, Università degli Studi di Milano (Italy).*
- *Conference* Stocastics of Environmental and Financial Economics*,14-21 Settembre 2014, Oslo (Norway).*
- *Conference* New Trends in Optimal Control*, 23-27 Giugno 2014, Tours (Francia).*
- *Conference* Young Women in Probability *25-28 Maggio 2014, Bonn (Germania).*
- *Conference* Si può vivere in Università*, 27 Febbraio-1 marzo 2014, Varigotti (Italia).*
- *Invited speaker at* Incontro su SDE con memoria e argomenti correlati*, 21th-22th Gennaio 2014, Università di Pisa, Pisa (Italia).*

- XV Workshop on Quantitative Finance, *January 23-24, 2014 Department of Economics and Management, Firenze (Italia).*
- 9th International Meeting on Stochastic Partial Differential Equations and Applications, *6th-11th January 2014, Levico Terme (Italia).*
- *Invited participant at Beijing International Center for Mathematical Research, Peking University for the* Sino-French Research Program in Financial Mathematics, *Workshop on Financial Mathematics and Numerical Probability, June 19th-21th 2013, and Workshop on Stochastic Portfolio, Arbitrage, Credit and Informational Risks, June 24th-28th 2013.*
- Research School on Controllability of Deterministic and Stochastic Systems and its Applications *Iasi (Romania), June 2012.*
- *Semester on* Recent Developments on Stochastic Analysis *École Polytechnique Féderale Lausanne, (Switzerland), first semester 2012.*
- *XXXV (35th) Convegno annuale Associazione Matematica Applicata delle Scienze Economiche e Sociali AMASES 2011, 15-17 September, 2011, Macerata (Italy).*
- *7th* International Congress on Industrial and Applied Mathematics - *ICIAM 2011, 18-22 July, 2011, Vancouver (Canada).*
- *XII Workshop on* Quantitative Finance, *27-28 January, 2011, Padova (Italy).*
- *Conference on* Modeling and managing financial risks, *10-13 January, 2011, Paris (France).*
- *34th Conference on* Stochastic Processes and Their Applications, *6-10 September, 2010, Osaka (Japan).*
- *XXXIV (34th) Convegno annuale* Associazione Matematica Applicata delle Scienze Economiche e Sociali *AMASES 2010, 1-4 September, 2010, Macerata (Italy).*
- *Third SMAI European* Summer School in Financial Mathematics, *23-27 August, 2010, Paris.*
- *The Fifth General Conference on* Advanced Mathematical Methods in Finance *AMaMeF 2010, May 4-8, 2010, Hotel Golf, Bled, Slovenia.*
- *One week during the semester (January 4-July 2, 2010) on* Stochastic Partial Differential Equations *at Isaac Newton Institute for Mathematical Science, April 26-May 1, 2010, Cambridge University (United Kingdom).*
- Non-Semimartingale Techniques in Mathematical Finance, *May 26-28, 2009, Helsinki University of Technology (Finland).*
- *Third Conference on* Numerical Methods in Finance, *15-17 April 2009, École des Ponts ParisTech (France).*
- *Sixth Seminar on* Stochastic Analysis, Random Fields and Applications, *May 19-23, 2008, Centro Stefano Franscini, Ascona (Switzerland).*
- Spring School in Finance, *Bologna, May 17-18, 2007, Bologna (Italy). Courses by Prof. R. Cont and F. Mercurio.*
- Spring School in Finance, *Bologna, May 18-19, 2006, Bologna (Italy). Courses by Prof. D. Lamberton and B. Dupire.*
- *AARMS* Summer School, *2005 , Dalhousie University of Halifax (Nova Scotia ĐCanada).*
- Spring School in Finance, *Bologna, May 19-20, 2005, Bologna (Italy). Courses by Prof. Tomas Björk, Stockholm School of Economics, and Philipp J. Schönbucher, Eidgenössische Technische Hochschule of Zürich.*

June 24, 2020