UNIVERSITÀ DEGLI STUDI DI MILANO
DIPARTIMENTO DI MATEMATICA "FEDERIGO ENRIQUES"

MARCO FRITTELLI
Professor of Mathematical Finance

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CV

Personal data and studies:
Italian and USA citizenship.
Degree (Laurea) in Mathematics (1989), University of Milan, Italy.
Ph.D (1993) in Mathematical Finance, University of Brescia, Italy.
Visiting Scholar (1991-1993) at the New York University.

Academic Positions:
Assistant Professor (1993-1998) at the Universities of Urbino and Milano.
Associate Professor in Mathematical Finance (1998-2001) at the University of Milano-Bicocca.
Professor in Mathematical Finance (2001-2006) at the University of Florence.
Professor in Mathematical Finance at the University of Milano (2006-present).

Visiting Professor:
Newton Institute of Mathematical Science, Cambridge University, UK (2005).
McMaster University, Canada (2005).
Carnegie Mellon University, USA (2006).
Dauphine University, Paris, France (2006).
The Fields Institute, Toronto (2010).
University of California at Santa Barbara, USA (2008, 2009, 2010, 2012, 2013, 2014).

Appointments:
Member of the Editorial Board of the SIAM Journal on Financial Mathematics (2018-present).
Member of the Editorial Board of the "Annals of Applied Probability" (2003-2008) .
Member of the Scientific Council of the Bachelier Finance Society (2004-2008).
Co-Director of the CIME-European Mathematical Society, Summer School "Stochastic Methods in Finance", (2003).
Member of the Italian Agency for the Valuation of the Scientific Research, GEV-ANVUR (2011-2013)

Selected Invited talks:
- Plenary Lecturer at the 11th General AMaMef Conference, Bielefeld, 2023.
- Plenary Lecturer at the AMASES Conference, Milano, 2023
- Speaker at the Bachelier Finance Society One World Seminar, 2021.
- Plenary Lecturer at SIAM Conference on Financial Mathematics, Toronto, 2019.
- Plenary Speaker at QMF, Sydney, 2012.
- Plenary Lecturer at SIAM Conference on Financial Mathematics, S. Francisco, 2010.
- Guest Lecturer in the Course: "Foundations of Mathematical Finance", Thematic Program on Quantitative Finance, Fields Institute, Toronto 2010.
- Plenary Lecturer at the V Congress of the Bachelier Finance Society, London 2008.
- Principal Lecturer at the "NSF/CBMS Regional Conference in the Mathematical Sciences" University of California at Santa Barbara, USA 2008.

- Annual Meeting of the American Mathematical Society, New Orleans USA, 2007.
- Symposium "Probability toward 2000", Columbia University 1995.

Tutorial and Summer schools

-Tutorial on Risk Measures, Lectures at the Workshop on Non Linear Expectation and Stochastic Calculus under Knightian Uncertainty, Institute of Mathematical Sc., National University Singapore, 2013

-Tutorial on Risk Measures, Lectures at Ecole CEA EDF INRIA – Systemic Risk and Quantitative Risk Management, Paris, 2012.

- Advanced course on Convex duality methods in Mathematical finance, Third Summer School in Mathematical Finance, African Institute for Mathematical Sciences, Capetown, South Africa 2010.
- Advanced course on risk measures, Technical University of Lisbon, 2006.
- Special lecturer at the Winter School on Mathematical Finance, Lunteren, The Netherlands, 2005.

Research activities

- Advances in stochastic analysis for risk modeling, CIRM, Marseille, 2021, 2019, 2017 and 2014.
- Banff International Research Station for Mathematical Innovation, Canada, 2014 and 2004.
- The Fields Institute, Toronto, 2010.
- Oberwolfach weeks on "Stochastic Analysis in Finance" in 2008, 2003 and 1997.
- Joint Mathematical Weekend of the European Mathematical Society, Lisbon, Portugal, 2003.
- Newton Institute of Mathematical Science, Cambridge University, UK (1995) and (2005);

Organization of Conferences:

- Member of the Scientific Committee of the Bachelier Finance Society One World Seminar Talk Series, 2020-present.
- Organizer of the "de Finetti Risk Seminars", Milano Lectures on the Mathematical Theory of Economics and Finance, Milano 2011/2012, 12/13, 13/14, 14/15, 15/16, 17/18, 18/19 and 22/23.
- Organizer of the "First Gran Sasso Workshop in Mathematical Finance", GSSI L'Aquila, 2017.
- Organizer of the Workshops: "Model Uncertainty and Robust Finance", Milano University, 2018 and 2016.
- Organizer of the Quantitative Finance Retrospective Workshop, Fields Institute, Toronto, October 2013.
- Member of the Scientific Committee of the Conference: Probability and Finance, 2012, Pescara Italy.
- Organizer of the Minisymposium: Portfolio Optimization and Risk Measures, ICIAM 2011,Vancouver.
- Chair of the Scientific Committee of the Workshop "Foundations of Mathematical Finance", during the Thematic Program on Quantitative Finance, Fields Institute, Toronto, 2010.
- Member of the Scientific Committee of the VI Congress of the Bachelier Finance Society, Toronto 2010.
- Organizer of the Session on Risk Measures at the VI Congress of the Bachelier Finance Society, Toronto 2010.
- Organizer of the Minisymposium: On Dynamic Measures of Risk, SIAM Conference on Financial Mathematics 2010, S. Francisco.
- Member of the Scientific Council of the Workshop Further Developments in Quantitative Finance, Edinburgh 2007;
- Member of the Scientific Council of the conference New Mathematical Methods in Risk Theory, in honor of Prof. H. Bühlmann, University of Firenze 2005;
- Organizer of the Minisymposium: "Mathematical modeling for pricing and hedging financial risk", EMS-SMAI-SMF Conference: Applied Mathematics and Applications, Nizza, 2003.
- Member of the Scientific Council of the International Workshops on Quantitative Finance held in the universities: Torino 2003; Siena 2004; Bocconi 2005; Perugia 2006; Roma Tor Vergata 2008; Padova

2011; Milano-Bicocca 2017; Roma Tor Vergata 2018,;ETH Zurich 2019; Napoli 2020; Verona 2021; Roma 2022.

Invited speaker at the following universities and research Institutes: Newton Institute of Mathematical Science, Cambridge Univ. UK; Oxford Univ. UK; King's College UK; Princeton Univ. USA; Columbia Univ. New York; IPAM, University of California at Los Angeles USA; University of California at Santa Barbara USA; University of California at Irvine USA; University of Southern California USA; Austin Univ. USA; Boston Univ. USA; Illinois Institute of Technology Chicago USA; Carnegie Mellon Univ. Pittsburgh USA; ETH Zurich; Zurich University; USI University Lugano; Humboldt Univ. Berlin; Munich Univ. Germany; Bielefeld Univ. Germany ; Paris VI Univ.; H. Poincarè Institute Paris; Universitè de France-Comte Besancon; CIRM Marseille; Univ. Le Mans; INRIA, Paris; Vienna Univ.; Freiburg Univ.; Banach Center Varsavia; The Fields Institute Toronto Canada; McMaster Univ. Canada; University of Technology, Sydney Australia; National University of Singapore; Fudan Univ. Shanghai; IMPA, Rio de Janeiro, Brazil.

Research activity:
The research is focused on the application of stochastic analysis and convex analysis in Mathematical Finance. In particular it comprehends: the Fundamental Theorem of Asset Pricing; martingale pricing in incomplete markets based on the principle of entropy minimization; the Dynamic Certainty Equivalent approach to financial valuation based on utility theory and convex duality; indifference pricing; utility maximization in incomplete markets with not necessarily bounded semi-martingales; the supermartingale property of the optimal wealth process; the weak super-replication price; convex risk measures, dynamic risk measures, risk measures for processes, law invariant risk measures; general capital requirements; utility maximization and risk measures on Orlicz spaces; quasiconvex dynamic risk measures and conditional certainty equivalent; evenly convex sets and quasiconvex maps on modules; risk measures on distribution functions and generalization of V@R with probability-loss function; scientific research measures; model-free arbitrage and robust pricing-hedging duality; pathwise robust finance; model risk; systemic risk and risk transfer equilibrium, robust systemic risk measures, conditional systemic risk measures, multivariate shortfall risk measures, entropy martingale optimal transport, collective arbitrage.

Referee activity:
Annals of Applied Probability, Finance and Stochastics, Mathematical Finance, SIAM J on Financial Mathematics, Stochastic Processes and their Applications, Stochastic and Stochastics Reports, Positivity, Applied Mathematical Finance, Annals of Finance, Journal of Banking and Finance, D.E.F. Journal, among others.

Grants in Research Projects:
PRIN Projects:
- National Director of the Italian Project PRIN 2022, "Entropy Martingale Optimal Transport and McKean-Vlasov equations".
- National Director of the Italian National Project PRIN 2008 "Probability and Finance".
- Director of the research Unit of Firenze "Duality in Mathematical Finance", in the Italian National Project PRIN 2004-2006 "Stochastic Methods in Finance".
- Director of the research Unit of Firenze "Martingale methods for optimization in incomplete markets", in the Italian National Project PRIN 2001-2003: "Stochastic Processes and Applications to Filtering, Control and Mathematical Finance".
- Director of the Research Unit of Milano of the Italian National Project: PRIN 1999-2001 "Methodologies and measurements for financial market and credit risk".

INDAM-GNAMPA Projects (National Institute of Advanced Mathematics – Group of Analysis, Probability and Applications):
- Director of the Project "Applications of Orlicz space theory in mathematical finance", 2007.
- Director of the Project "Duality in Mathematical Finance", 2004.
- Director of the Project "Mathematical Finance: valuation and hedging in incomplete markets" 2003.
University Projects:
- Director of the Projects PSR, Milano University: 2021, 2020, 2019, 2020, 2021.
- Director of the Inter-dipartimental Projects, Milano University: 2015, 2016, 2017, 2018.
- Director of the Projects FIRST, Milano University, Mathematical Finance, 2007, 2008.
- Director of the Research Projects MURST 60%, Firenze University:
---Dynamic risk measures and utility maximization, 2004
---Financial mathematics: dynamic risk measures, 2003;
---Financial mathematics: risk measures, 2002;

Ph.D. students:
Andrea Carelli, 1997, Università di Milano
Fabio Bellini, 1998, Università di Brescia
Emanuela Rosazza Gianin, 2002, Università di Bergamo
Giacomo Scandolo, 2003, Università di Milano
Sara Biagini, 2005, Scuola Normale Superiore Pisa
Roberto, D'ercole, 2009, Università di Milano-Bicocca
Marco Maggis, (2010), Università di Milano
Ilaria Peri (2013) Università di Milano-Bicocca
Matteo Burzoni (2015) Università di Milano
Alessandro Doldi (2021), Università di Milano

Teaching activity:

Ph.D. and Master Courses:
- Milano-Bicocca University, PhD course on Mathematical Finance, 2016, 2017, 2018.
- UCSB, California USA, PhD course on Financial Mathematics, 2010, 2012.
- Torino University, Collegio Carlo Alberto, Master Course on Probabilistic Methods for Finance, 2007, 2008, 2009, 2011, 2012 and 2014.
- Milano-Bicocca University, Master MAMI, Course on Financial Mathematics, Milano, 06/07.
- Bologna University, "Scuola di Alta Formazione in Finanza Matematica", Advanced course on Mathematical Finance, 2006.
-Advanced course on stochastic calculus with application in finance: for junior researchers at the 8th Italian-Spanish Meeting on Financial Mathematics, Verbania, Italy, 2005
- Firenze University, Master course on "Mathematical methods in finance and insurance" Master Programme in "Finance and insurance" 02/03 and 03/04.
- Milano – Bicocca University, INDAM, Istituto Nazionale di Alta Matematica and MAMI, Master Course on "Modeling financial markets" 2000/01 and 2001/02.
- Firenze University, Department of Mathematics and Decisions, Seminars on "Duality in mathematical finance" for the PhD Programme: 01/02.
- Università Cattolica, Milano, Master course on "Finance", Master Programme in "International Finance", 1998, 1999 and 2000.
- Brescia University, PhD Course on "Stochastic calculus and mathematical finance", 93/94, 94/95, 95/96 and 96/97.

- Milano University, Seminars on "Introduction to mathematical finance" for the PhD Programme "Computational Mathematics and Operation Research", Department of Mathematics 1995.

Laurea Magistrale Courses:
-Università degli Studi di Milano, Advanced Course in Mathematical Finance, Laurea Magistrale in Applied Mathematics, 2014/15, 15/16, 16/17, 17/18, 18/19, 19/20, 20/21, 21/22.
-Università degli Studi di Milano, Course on "Mathematical Finance 2", Laurea Magistrale in Applied Mathematics, 2007/08, 08/09, 09/10, 10/11, 11/12, 12/13 and 14/15.
-Università degli Studi di Milano, Course on "Mathematical Finance 1", Laurea Magistrale in Applied Mathematics, 06/07, 07/08, 08/09, 09/10, 10/11, 11/12, 12/13, 14/15, 15/16, 16/17, 17/18, 18/19, 19/20, 20/21, 21/22.
-Università degli Studi di Firenze, Course on "Mathematical Finance", Laurea Magistrale in Finance, 2004/05

Laurea Courses:
-Università degli Studi di Firenze, Economic Faculty:
Course on "Mathematical model of financial markets", 01/02, 02/03 and 03/04
Course on "Risk Theory", 01/02, 02/03 and 03/04

-Università degli Studi di Milano-Bicocca, Economic Faculty:
Course on "Financial mathematics", 00/01
Course on "Modeling financial markets" , 99/00
Course on "Basic financial mathematics" , 98/99 and 99/00
Course on "Calculus", 97/98, 98/99 and 99/00

-Università di Urbino, Economic Faculty, Università Cattolica, Faculty of Mathematical and Physical Sciences ; Università degli Studi di Milano, Economic Faculty:
Tutoring Courses on Calculus and Financial Mathematics, 93/94, 94/95, 95/96.