CURRICULUM VITAE

Cristina Caroli Costantini
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PERSONAL DATA

Born: March 27, 1955 in Rome, Italy

EDUCATION

PhD	Mathematics	University of Wisconsin-Madison, 1987
MS	Mathematics	University of Wisconsin-Madison, 1983
Laurea	Mathematics	Università di Roma "La Sapienza", 1979

AREA OF SPECIALIZATION

Probability Theory and Stochastic Processes

EMPLOYMENT:

Academic positions

Università di Chieti-Pescara
Professor of Probability and Mathematical Statistics, 1996-
Member of the Board of Trustees of the University, 2012-2016

Università di Udine
Professor of Probability and Mathematical Statistics, 1994-1996

Università di Roma "La Sapienza"
Associate Professor of Probability, 1992-1994
Assistant Professor of Mathematical Analysis (subarea Probability), 1984-1992
National Research Council of Italy Research Fellowship holder, 1979-1982

Visiting positions

University of Wisconsin-Madison, August-September 1990

HONORS, AWARDS:

NATO Science Fellowship, July 1985-January 1986
National Research Council of Italy Research Abroad Fellowship Final Prize, 1984
National Research Council of Italy Research Abroad Fellowship, 1982-1984

ACADEMIC RESPONSIBILITY

Member of the Board of Trustees of the Università 'G. D'Annunzio' of Chieti-Pescara from November 2012 to September 2016.

Coordinator of the Ph.D. Program in Science of the Università 'G. D'Annunzio' of Chieti-Pescara from March 2010 to October 2010 and from May 2011 to December 2012.

Director of the Degree Course in Economics and Computer Sciences (Presidente CdL in Economia e Informatica) of the Università 'G. D'Annunzio' of Chieti-Pescara from 2001 to 2010.

Director of the Local Research Unit of the Italian National Institute of Mathematics (Istituto Nazionale di Alta Matematica - INdAM) at the Università 'G. D'Annunzio' of Chieti-Pescara from 2002 to date.

RESEARCH GRANTS

Italian Government Funding for Research Projects of National Interest (40%, COFIN and PRIN Programs): 1993-1994 (Principal Investigator of a Local Unit), 1997-1998, 1999-2000, 2001-2003, 2004-2005, 2006-2007, 2008-2009

Italian National Institute of Mathematics (INdAM) Visiting Professor Program, March 2018

National Research Council of Italy Visiting Professor Program, June 1994

TEACHING

Probability (Calcolo delle Probabilità): 1992/93, 1993/94, 1996/97, 2002/03, and every year from 2007/08 to date.

Deep neural networks (Reti neurali profonde): 2019/2020

Financial mathematics (Matematica finanziaria): 2007/08, 2008/09, 2009/10, 2011/12, 2012/13, 2013/14, 2014/15, 2015/16, 2016/17 and 2018/19.

Derivatives and risk management (Titoli derivati e gestione del rischio): 2003/04, 2004/05, 2005/06, 2006/07 and 2017/18.

Mathematical Statistics (Statistica Matematica): 2003/04, 2004/05, 2005/06 and 2006/07.

Calculus (Matematica Generale): 1997/98, 1999/2000, 2001/02 and 2002/03.

Operational Research (Ricerca Operativa): 1998/99.

Decision Theory (Teoria delle Decisioni): 1998/99 and 1999/2000.

Sabbatical leave in 2000/01.

Maternity leave in 1995/96

PHD STUDENTS

Fernanda D'Ippoliti: Università 'G. D'Annunzio' of Chieti-Pescara, 2007, thesis on 'Macroeconomic factors and term structures: a dynamical model linking inflation, ECB and short term interest rates'.

Barbara Pacchiarotti: Sapienza University of Rome, 1997, thesis on 'Numerical approximation for expectations of functionals of reflecting diffusions'

MAIN RESEARCH INTERESTS

Convergence of stochastic processes. Constrained stochastic processes. Stochastic networks. Martingale problems. Measure valued processes. Numerical methods for stochastic processes. Optimal stopping. Applications to biology, physics and finance.

INVITED ADDRESSES

Lecture, Workshop ”Population Dynamics and Physics in Synergy II”, Pisa, Italy, April 2019
Invited Session, INFORMS Annual Meeting 2018, Phoenix, November 2018
Invited Session, 39th Conference on Stochastic Processes and their Applications,
Moscow, Russia, July 2017
Probability Seminar, Sapienza Università di Roma, Rome, Italy, May 2017
Seminar, Sapienza Università di Roma, Rome, Italy, June 2017
Seminar, École Polytechnique, Paris, France, February 2014
Seminar, École Polytechnique, Paris, France, January 2004
Lecture, Applied Probability Day, Columbia University, April 1994
Lecture, NSF Summer Program on Stochastic Processes, Center for the Mathematical Sciences,
University of Wisconsin-Madison, July 1992
Seminar, Iowa State University, September 1990
Seminar, Case Western University, September 1990
AMS-SIAM Summer Seminar on Mathematics of Random Media, June 1989
Seminar, University of Montreal, Canada, December 1984

OTHER SCIENTIFIC ACTIVITIES

Referee for the journals: The Annals of Applied Probability,
Electronic Journal of Probability, Journal of Applied Probability,
Probability Theory and Related Fields, Proceedings of the London Mathematical Society,
S.I.A.M. Journal on Control and Optimization, S.I.A.M. Journal of Numerical analysis,
Stochastic Processes and their Applications, Stochastic Systems.

Organizer, Session on Asymptotics for Measure Valued Processes,
1st Italian Meeting on Probability and Mathematical Statistics, Torino, Italy, 2017
Scientific Committee and Organizing Committee, Final Conference of the National
Research Project PRIN 2008-Probability and Finance, Pescara, Italy, 2012
Organizing Committee, 17th Conference on Stochastic Processes and their Applications,
Rome, Italy, 1987

PUBLICATIONS

1. F. Antonacci, C. Costantini, F. D’Ippoliti, M. Papi: Inflation, ECB and short term interest rates: A new model with calibration to market data, arXiv:2010.05462 (2020)
2. C. Costantini, T.G. Kurtz: Markov selection for constrained martingale problems *Electronic Journal of Probability* 24, no. 135, 31 (2019)
3. C. Costantini, T.G. Kurtz: Existence and uniqueness of reflecting diffusions in cusps. *Electronic Journal of Probability* 23, no. 84, 21 (2018)
4. C. Costantini, P. De Blasi, S. N. Ethier, M. Ruggiero, D. Spanò: Wright-Fisher construction of the two-parameter Poisson-Dirichlet diffusion. *Annals of Applied Probability*, 27(3), 1923-1950 (2017)

5. C. Costantini, T.G. Kurtz: Viscosity methods giving uniqueness for martingale problems. *Electronic Journal of Probability* 20, no. 67, 27 (2015)
6. C. Costantini, M. Papi, F. D'Ippoliti: Singular risk neutral valuation equations. *Finance & Stochastics*, 16(2), 249-274 (2012)
7. C. Costantini, E. Gobet, N. El Karoui: Boundary sensitivities for diffusion processes in time dependent domains. *Applied Mathematics and Optimization*, 54, 159-187 (2006)
8. C. Costantini, T.G. Kurtz: Diffusion approximation for transport processes with general reflection boundary conditions. *Mathematical Models and Methods in Applied Sciences*, 16, 717-762 (2006)
9. C. Costantini, N. El Karoui, E. Gobet: Représentation de Feynman-Kac dans des domaines temps-espace et sensibilité par rapport au domaine. *CRAS Ser. I* 337-342 (2003)
10. C. Costantini: A simple variance reduction method with applications to finance and queueing theory. *Monte Carlo Methods and Applications*, 7, 131-139 (2001)
11. C. Costantini: Variance reduction by antithetic random numbers of Monte Carlo methods for unrestricted and reflecting diffusions. *Mathematics and Computers in Simulation*, 51, 1-17 (1999)
12. C. Costantini, D. Pasqualucci: Monotonicity of Bayes sequential tests for multidimensional and censored observations. *Journal of Statistical Planning and Inference*, 75, 117-131 (1998)
13. C. Costantini, B. Pacchiarotti, F. Sartoretto: Numerical approximation for functionals of reflecting diffusion processes. *SIAM Journal on Applied Mathematics*, 58, 73-102 (1998)
14. C. Costantini, F. Spizzichino: Explicit solution of an optimal stopping problem: the burn-in of conditionally exponential components. *Journal of Applied Probability*, 34, 267-282 (1997)
15. C. Costantini, R. Marra: Hydrodynamic limits for the Boltzmann process. *Journal of Statistical Physics*, 67, 229-249(1992)
16. C. Costantini: The Skorohod oblique reflection problem in domains with corners and application to stochastic differential equations. *Probability Theory and Related Fields*, 91, 43-70 (1992)
17. C. Costantini, F. Spizzichino: Optimal stopping of life testing: use of stochastic orderings in the case of conditionally exponential life-times. 95-103 in: K. Mosler, M. Scarsini (eds.): *Stochastic orders and decision under risk*, Lecture Notes - Monograph Series, vol. 19, I.M.S., Hayward, California (1991)
18. C. Costantini: Diffusion approximation for a class of transport processes with physical reflection boundary conditions. *Annals of Probability*, 19, 1071-1101 (1991)
19. A. Calzolari, C. Costantini, A. Gerardi: Law of large numbers for DNA distribution in an interacting cell population. *SIAM Journal on Applied Mathematics*, 51, 150-159 (1991)
20. A. Calzolari, C. Costantini, F. Marchetti: A confidence interval for Monte Carlo methods with an application to simulation of obliquely reflecting Brownian motion. *Stochastic Processes and their Applications,* 29, 209-222 (1988)
21. C. Costantini, A. Gerardi, G. Nappo: On the convergence of sequences of stationary jump Markov processes. *Statistics & Probability Letters,* 1, 155-160 (1983)
22. C. Costantini, G. Nappo: Some results on weak convergence of jump Markov processes and their stability properties. *System & Control Letters,* 2, 175-183 (1982)