Fabrizio Durante - Short Curriculum Vitae

Università del Salento
Dipartimento di Scienze dell'Economia
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Education and Academic Qualifications

2017	Full Professor Qualification in Statistics Italian National Scientific Qualifications (ASN 2016) – Scientific sector: 13/D1.
2013	Full Professor Qualification in Mathematical Methods of Economics, Finance and Actuarial Sciences Italian National Scientific Qualifications (ASN 2012) – Scientific sector: 13/D4.
2010	Habilitation "venia docendi" in Mathematics Johannes Kepler University Linz (Austria)
2006	Ph.D. in Mathematics Department of Mathematics "E. De Giorgi", University of Lecce (Italy)

Employment record

12/2016 - today	Full Professor in Mathematical Methods of Economics, Finance and Actuarial Sciences (Scientific Sector: 13/D4) at the Department of Economic Sciences, Università del Salento, Lecce (Italy).
01/2015 - 12/2016	Associate Professor in Statistics (Scientific Sector: 13/D1) at the Faculty of Economics and Management, Free University of Bozen-Bolzano (Italy).
03/2010 - 12/2014	Assistant Professor (tenured) in Statistics (Scientific Sector: 13/D1) ("Ricercatore universitario confermato") at the Faculty of Economics and Management, Free University of Bozen-Bolzano (Italy).
09/2006 - 02/2010	Assistant Professor at the Department of Knowledge-Based Mathematical Systems, Johannes Kepler University Linz (Austria).
05/2003 - 04/2006	Ph.D. Student (with scholarship) at the Department of Mathematics "E. De Giorgi", University of Lecce (Italy).

Research projects (as PI)

2019-2021 National Coordinator of the project *Stochastic Models for Complex Systems*, sponsored by MIUR - PRIN 2017 (Project No. 2017JFFHSH).

2017-18 PI of the project *Bounds for Risk Functionals in Dependence Models*, sponsored by INdAM - GNAMPA (National Group of Mathematical Analysis, Probability and Their Applications).

2009 - 2010 PI (with T. Bacigal) of the project *Multivariate dependence models in hydrology*, bilateral cooperation Austria–Slovakia (OeAD-WTZ, Project SK 04/2009).

2008 - 2009 PI (with M. Úbeda-Flores) of the project *Constructions of Multivariate Statistical Models with Copulas*, bilateral cooperation Austria–Spain (OeAD-WTZ, "Acciones Integradas 2008-2009", Project ES04/2008).

2008 - 2009 PI (with P. Jaworski) of the project *Copula Theory and its Applications*, bilateral cooperation Austria–Poland (OeAD-WTZ, Project PL 03/2008).

Research projects (as Participant)

2018 - 2022 Management Committee Substitute of the project *Understanding and modeling compound climate and weather events (DAMOCLES)*, COST Action CA17109.

2015 - 2019 Member of the project *Computationally-intensive methods for the robust analysis of non-standard data (CRoNoS)*, COST Action IC1408.

Scientific committee of international events

2009 Workshop on Copula Theory and its Applications, Warsaw (Poland), 25-26 September 2009.

2010 5th International Conference on Soft Methods in Probability and Statistics, Oviedo (Spain), 28 September - 1 October 2010.

2012 Workshop on Copulae in Mathematical and Quantitative Finance, Kraków (Poland), 10–11 July 2012 (satellite event of the 6th European Congress of Mathematics 2012).

2012 6th International Conference on Soft Methods in Probability and Statistics, Konstanz (Germany), 4–6 October 2012.

2014 7th International Conference on Soft Methods in Probability and Statistics, Warsaw (Poland), 22–24 September 2014.

2015 8th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2015), London (UK), 12–14 December 2015.

2016 16th International Conference on Information Processing and Management of Uncertainty in Knowledge–Based Systems (IPMU), Eindhoven (The Netherlands), 20–24 June 2016.

2016 8th International Conference on Soft Methods in Probability and Statistics, Rome (Italy), 12–14 September 2016.

2016 Salzburg Workshop on Dependence Models & Copulas, Salzburg (Austria), 19–22 September 2016 (workshop co-chair).

2017 Copulas and Their Applications. To celebrate the 75th birthday of Professor Roger B. Nelsen, Almería (Spain), 3–5 July 2017.

2017 10th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2017), London (UK), 16–18 December 2017.

2018 17th International Conference on Information Processing and Management of Uncertainty in Knowledge-Based Systems (IPMU), Cádiz (Spain), 11–15 June 2018.

2018 2nd International Conference on Econometrics and Statistics, Hong Kong, 19–21 June 2018.

2018 5th International Conference on Belief Functions (BELIEF 2018) and 9th International Conference on Soft Methods in Probability and Statistics (SMPS 2018), Compiègne (France), 17–21 September 2018.

2018 11th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2018), Pisa (Italy), 14–16 December 2018.

2019 The 11th Conference of the European Society for Fuzzy Logic and Technology, Prague (Czech Republic), 9–13 September 2019.

2020 12th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2020), London (UK), 19–21 December 2020.

2021 IFSA–EUSFLAT 2021, Bratislava (Slovakia), 19–24 September 2021.

Awards

2015 STAHY Best Paper Award 2015 (jointly with G. Salvadori and C. De Michele) from the International Commission on Statistical Hydrology (ICSH-IAHS) of the International Association of Hydrological Sciences.

Invited plenary talks at international events

2010 *Copulas and extreme events*, 10th International Conference on Fuzzy Set Theory and Applications, Liptovský Ján (Slovakia), 1–5 February 2010.

2010 *The mathematics of copula functions*, Frontiers in Financial Markets Mathematics "Dynamic Copula Methods in Finance", University of Bologna (Italy), 6-11 September 2010.

2013 *Dependence modeling in risk management*, Risk Management Reloaded, Munich (Germany), 9–13 September 2013.

2013 *Semilinear copulas*, Conference on "Marshall-Olkin Distributions: Advances in Theory and Applications", Bologna (Italy), 2–3 October, 2013.

2013 *Patchwork copulas*, Workshop "Copulas and Extremes", INRIA, Grenoble (France), 19–20 October 2013.

2014 *Patchwork copulas with applications*, Workshop "Recent Developments in Dependence Modelling with Applications in Finance and Insurance", Vrije Universiteit Brussel, Bruxelles (Belgium), 23 May 2014.

2014 *What is the maximal probability of joint defaults?*, Workshop "Systemic Risk and Contagion", University of Bologna (Italy), 7 November 2014.

2015 *The multivariate probability integral transform*, Austrian Statistics Day, organized by Austrian Statistical Society, Vienna (Austria), 21–23 October, 2015.

2015 *Singular copulas*, Workshop "Dependence & Risk Measures", University of Milano-Bicocca, Milano (Italy), 12–13 November, 2015.

2016 *From subcopulas to copulas*, Dependence Modeling in Finance, Insurance and Environmental Science, Munich (Germany), 17–19 May 2016.

2016 *Copula models in Water Science: a personal sailing*, Leuven Statistics Days, Leuven (Belgium), 20–21 October 2016.

2018 *Copula-based clustering: a journey into time and space*, 2nd Workshop on Clustering methods and their applications, Free University of Bozen-Bolzano (Italy), 26 October 2018

2018 *Copula-based clustering of financial time series*, 5th Workshop on Dependence Modelling with Applications in Finance and Insurance, Aegina (Greece), 13-14 September 2018.

2019 *Conditional Value–at–Risk via copulas*, International Workshop on Stress Test and Risk Management, Paris (France), 28–29 May 2019.

2020 *Dissimilarity functions for rank-based hierarchical clustering of continuous variables*, Online Workshop "Learning Tools and Applied Quantitative Methods for Decision Making", Bolzano (Italy), 9–11 December 2020.

Professional services and activities

Professional committee

2014 - today Co-chair of the specialized team on *Dependence Models and Copulas* of the *ERCIM Working Group on Computational and Methodological Statistics* (CMStatistics).

Editorial committee

2019 - today Editorial Board of *Fuzzy Sets and Systems* by Elsevier.

2018 - today Editorial Board of *International Journal of Approximate Reasoning* by Elsevier.

2016 - today Associate Editor of *Statistical Methods & Applications* by Springer.

2015 - today Associate Editor of *Computational Statistics & Data Analysis* by Elsevier.

2013 - today Associate Editor of *Dependence Modeling* by De Gruyter.

Guest Editor

2019 Special issue of *Econometrics and Statistics* devoted to "Copulas", (volume 12, 2019). Co-editors: C. Genest and I. Kojadinovic.

2017 Special issue of *Dependence Modeling* devoted to Dependence Models & Copulas" (selected papers from Salzburg Workshop on Dependence Models & Copulas) (volume 5, issue 1, 2017). Co-editor: W. Trutschnig.

2009 Special issue of *Information Sciences* devoted to "Copulas, measures and integrals" (selected papers from the FSTA Conference 2008) (volume 179, issue 17, 2009). Co-editors: R. Mesiar and S. Saminger-Platz.

2008 Special issue of *Kybernetika (Prague)* devoted to "Random variables, joint distribution functions, and copulas" (volume 44, issue 6, 2008). Co-editors: R. Mesiar and C. Sempi.

Referee for various international journals, including:
Bernoulli, Computational Statistics & Data Analysis, Electronic Journal of Statistics, Extremes, European Journal of Operational Research, Fuzzy Sets and Systems, IEEE Transactions on Fuzzy Systems, Information Sciences, Insurance: Mathematics & Economics, International Journal of Approximate Reasoning, Journal of Mathematical Analysis and Applications, Journal of Multivariate Analysis, Journal of Statistical Planning and Inference, Journal of the American Statistical Association, Journal of the Royal Statistical Society: Series A, Journal of the Royal Statistical Society: Series B, Journal of the Royal Statistical Society: Series C, Journal of Theoretical Probability, Nonlinear Analysis: Theory & Methods, Scandinavian Journal of Statistics, The American Statistician.

Reviewers
Mathematical Reviews; Zentralblatt Math.

Fabrizio Durante - Selected Publications

Full list of publications is available here.

Book

[1] F. Durante and C. Sempi. *Principles of Copula Theory*. CRC/Chapman & Hall, Boca Raton, FL, 2016. ISBN: 978-1-439-88442-3. Link.

Edited Books

[1] M. Úbeda Flores, E. de Amo Artero, F. Durante, and J. Fernández Sánchez, editors. *Copulas and Dependence Models with Applications*. Springer International Publishing, 2017. ISBN: 978-3-319-64220-8. Link.

[2] U. Cherubini, F. Durante, and S. Mulinacci, editors. *Marshall–Olkin Distributions – Advances in Theory and Applications*, volume 141 of *Springer Proceedings in Mathematics & Statistics*. Springer International Publishing, 2015. ISBN: 978-3-319-19038-9. Link.

[3] P. Jaworski, F. Durante, and W. K. Härdle, editors. *Copulae in Mathematical and Quantitative Finance*, volume 213 of *Lecture Notes in Statistics - Proceedings*. Springer, Berlin Heidelberg, 2013. ISBN: 978-3-642-35406-9. Link.

[4] P. Jaworski, F. Durante, W. K. Härdle, and T. Rychlik, editors. *Copula Theory and its Applications*, volume 198 of *Lecture Notes in Statistics - Proceedings*. Springer, Berlin Heidelberg, 2010. ISBN: 978-3-642-12464-8. Link.

Publications in Peer-Reviewed Journals

[1] F. Durante, J. Fernández-Sánchez, and M. Úbeda-Flores. Extreme semilinear copulas. *Fuzzy Sets and Systems*, in press, 2021. doi:10.1016/j.fss.2020.12.009.

[2] F. Durante, J. Fernández-Sánchez, and C. Ignazzi. Operators invariant under finitely many input changes with applications to aggregation of sequences. *Inform. Sci.*, 560:271–282,, 2021. doi:10.1016/j.ins.2021.01.040.

[3] S. Fuchs, F. M. L. Di Lascio and F. Durante. Dissimilarity functions for rank-invariant hierarchical clustering of continuous variables. *Comput. Statist. Data Anal.*, 159:107201, 2021. doi:10.1016/j.csda.2021.107201.

[4] F. Durante, J. Fernández-Sánchez, and W. Trutschnig. Spatially homogeneous copulas. *Ann. Inst. Statist. Math.*, 72(2):607–626, 2020. doi:10.1007/s10463-018-0703-8.

[5] F. Durante, J. Fernández-Sánchez, and M. Úbeda-Flores. Extreme biconic copulas: characterization, properties and extensions to aggregation functions. *Inform. Sci.*, 487:128–141, 2019. doi:10.1016/j.ins.2019.03.010.

[6] E. de Amo, M. Díaz Carrillo, F. Durante and J. Fernández Sánchez. Extensions of subcopulas. *J. Math. Anal. Appl.*, 452(1):1–15, 2017. doi:10.1016/j.jmaa.2017.02.061.

[7] M. Disegna, P. D'Urso and F. Durante. Copula–based fuzzy clustering of spatial time series. *Spat. Stat.*, 21:209–225, 2017. doi:10.1016/j.spasta.2017.07.002.

[8] J. Navarro, F. Durante. Copula-based representations for the reliability of the residual lifetimes of coherent systems with dependent components. *J. Multivariate Anal.*, 158:87–102, 2017. doi:10.1016/j.jmva.2017.04.003.

[9] F. Durante, S. Girard, and G. Mazo. Marshall–Olkin type copulas generated by a global shock. *J. Comput. Appl. Math.*, 296:638–648, 2016. doi:10.1016/j.cam.2015.10.022.

[10] F. Durante, J. Fernández-Sánchez, J. J. Quesada-Molina, and M. Úbeda-Flores. Convergence results for patchwork copulas. *European J. Oper. Res.*, 247(2):525–531, 2015. doi:10.1016/j.ejor.2015.06.028.

[11] F. Durante, J. Fernández-Sánchez, and W. Trutschnig. A typical copula is singular. *J. Math. Anal. Appl.*, 430:517–527, 2015. doi:10.1016/j.jmaa.2015.05.009.

[12] F. Durante and O. Okhrin. Estimation procedures for exchangeable Marshall copulas with hydrological application. *Stoch. Environ. Res Risk Assess.*, 29:205–226, 2015. doi:10.1007/s00477-014-0866-7.

[13] F. Durante, R. Pappadà, and N. Torelli. Clustering of time series via non–parametric tail dependence estimation. *Statist. Papers*, 56(3):701–721, 2015. doi:10.1007/s00362-014-0605-7.

[14] F. Durante, J. Fernández-Sánchez, and W. Trutschnig. Multivariate copulas with hairpin support. *J. Multivariate Anal.*, 130:323–334, 2014. doi:10.1016/j.jmva.2014.06.009.

[15] F. Durante and R. Foschi. Dependence of exchangeable residual lifetimes subject to failure. *Appl. Math. Comput.*, 235:502–511, 2014. doi:10.1016/j.amc.2014.02.069.

[16] F. Durante, J. Fernández-Sánchez, and C. Sempi. Multivariate patchwork copulas: a unified approach with applications to partial comonotonicity. *Insurance Math. Econom.*, 53(3):897–905, 2013. doi:10.1016/j.insmatheco.2013.10.010.

[17] F. Durante, J. Fernández-Sánchez, and C. Sempi. Sklar's theorem obtained via regularization techniques. *Nonlinear Anal.*, 75(2):769–774, 2012. doi:10.1016/j.na.2011.09.006.

[18] F. Durante and P. Jaworski. Invariant dependence structure under univariate truncation. *Statistics*, 46(2):263–277, 2012. doi:10.1080/02331888.2010.512977

[19] F. Durante and P. Jaworski. Spatial contagion between financial markets: a copula-based approach. *Appl. Stoch. Models Bus. Ind.*, 26(5):551–564, 2010. doi:10.1002/asmb.799.

[20] F. Durante and G. Salvadori. On the construction of multivariate extreme value models via copulas. *Environmetrics*, 21(2):143–161, 2010. doi:10.1002/env.988.

[21] F. Durante, P. Sarkoci, and C. Sempi. Shuffles of copulas. *J. Math. Anal. Appl.*, 352(2):914–921, 2009. doi:10.1016/j.jmaa.2008.11.064.

[22] F. Durante, A. Kolesárová, R. Mesiar, and C. Sempi. Semilinear copulas. *Fuzzy Sets and Systems*, 159(1):63–76, 2008. doi:10.1016/j.fss.2007.09.001.

[23] F. Durante, J.J. Quesada-Molina, and M. Úbeda-Flores. On a family of multivariate copulas for aggregation processes. *Inform. Sci.*, 177(24):5715–5724, 2007. doi:10.1016/j.ins.2007.07.019.

[24] F. Durante. A new class of symmetric bivariate copulas. *J. Nonparametr. Stat.*, 18(7-8):499–510, 2006. doi:10.1080/10485250701262242.

[25] F. Durante and C. Sempi. Semicopulæ. *Kybernetika (Prague)*, 41(3):315–328, 2005. Link.