

UNIVERSITÀ DEGLI STUDI DI MILANO

Procedura di selezione per la chiamata a professore di I fascia da ricoprire ai sensi dell'art. 18, comma 1, della Legge n. 240/2010 per il settore concorsuale 01/A3 - Mathematical analysis, probability and statistics, (settore scientifico-disciplinare MAT/06 - Probability and statistics)

presso il Dipartimento di Matematica "Federigo Enriques",

(avviso bando pubblicato sulla G.U. n. 53 del 05/07/2019) - Codice concorso 4104

Enrico Scalas

CURRICULUM VITAE

INFORMAZIONI PERSONALI (NON INSERIRE INDIRIZZO PRIVATO E TELEFONO FISSO O CELLULARE)

COGNOME	SCALAS
NOME	ENRICO
DATA DI NASCITA	11 GENNAIO 1964

GENERAL INFORMATION

Enrico Scalas

Born: 11/01/1964

Italian citizen

Address:

University of Sussex

Department of Mathematics

School of Mathematical and Physical Sciences

Brighton,

BN1

9QH

United Kingdom

phone: +44 (0)1273 876641, fax: +44 (0)1273 678097

e-mail: e.scalas@sussex.ac.uk

confidential e-mail: enrico.scalas@gmail.com

web pages: www.sussex.ac.uk/mps/internal/people/mathematics/person/330303,

www.fracalmo.org

Google scholar page: http://scholar.google.com/citations?user=0_s5BPAAAAAJ&hl=en

Link to preprints and working papers: http://arxiv.org/find/grp_q-bio,grp_stat,grp_cs,grp_q-fin,grp_math,grp_nlin,grp_physics/1/au:+Scalas+Enrico/0/1/0/all/0/1

Education:

1994: PhD in Physics, Physics in 2d, diffusion and growth of aggregates. Advisors: Andrea C. Levi and Alessandra Gliozzi.

1989: Degree in Physics, Dynamics of the gel-to-liquid crystal phase transition in lipid systems. Advisors:

Andrea C. Levi and Alessandra Gliozzi.

Professional Experience:

Current positions

Since October 2013: Professor of Statistics and Probability at the University of Sussex, Brighton, UK.

2012-2019: External Scientific Member at the Basque Center for Applied Mathematics (BCAM), Bilbao, Spain.

Previous positions

August 2015-July 2018: Head of Department, Department of Mathematics, University of Sussex, Brighton UK.

August 2015-July 2018: Deputy Head of School, School of Mathematical and Physical Sciences, University of Sussex, Brighton UK

June 1998 to September 2013: Assistant Professor of Physics at Università del Piemonte Orientale, Italy.

Visiting professorships (awards/fellowships)

October/November 2018: Visiting JSPS Professor at Department of Economics and Business, International Christian University, Tokyo, Japan.

June 2011 - May 2012: Visiting Researcher at Basque Center for Applied Mathematics (BCAM), Bilbao, Spain.

October-November 2010: Visiting Scientist at Departament d'Economia, Universitat Jaume I, Castellón de la Plana, Spain.

November 2006: Visiting JSPS Professor at Division of Social Sciences, International Christian University, Tokyo, Japan.

2005 September to 2006 August: Senior researcher at the Multi-Agent Division of ISI, Turin, Italy.

November/December 2005: Visiting Professor at Department of Applied Mathematics, Research School for Physical Sciences and Engineering, Australian National University, Canberra, Australia.

Postdoctoral grants

1997-1998: Post-doc at INFN (Italian Institute for the Physics of Matter), Genoa, Italy.

1995-1997: Post-doc at the Physics Department, Genoa University, Italy.

1994-1995: Post-doc at the Institute of Physical Chemistry, Mainz University, Germany.

RESEARCH

Current research:

Probability, anomalous diffusion and their applications to complex systems. This includes the application of Fractional Calculus and Continuous-Time Random Walks in Finance. Started in 1999, this research line has been very successful in two respects: it has given rise to a series of papers on the waiting-time properties in financial markets by other independent authors and to a long series of theoretical and empirical work.

Foundations of Statistical Mechanics. This includes activity on the Ehrenfest Urn model and investigations on the role of statistical equilibrium in Physics, Finance and Economics

Agent-based simulations in Physics, Finance and Economics. This includes the application and validation of large-scale simulations to complex systems in different scientific fields.

Past research:

1990-1998:

Physical properties of surfactant monolayers at the air-water interface, with emphasis on phase transitions.

This included experimental work at synchrotron radiation facilities.

Theory of diffusion in lattice-gas models of solid surfaces.

1998-2002:

Heavy-ion physics. This included experimental work at CERN.

Highlights

A short description of some recent results obtained by Enrico Scalas is included below.

Quantitative finance

1. Agent based simulations: In 2007, with B. Toth, J. Huber and M. Kirchler, Enrico introduced an agent-based simulation of behavioural experiments on the continuous double auction. Relevant paper: TOTH B, SCALAS E, HUBER J, KIRCHLER M (2007). The value of information in a multi-agent market model - The luck of the uninformed. THE EUROPEAN PHYSICAL JOURNAL. B, CONDENSED MATTER PHYSICS, vol. 55, p. 115-120.

2. Random matrix theory: Within 2010 and 2012 Enrico published a trilogy on random matrix theory applied to finance. The idea was to assess the effect of fat-tailed distributions and non-stationarities on the spectrum of eigenvalues as well as correcting some common errors present in the applied literature. Relevant papers: POLITI M, SCALAS E, FULGER D, GERMANO G (2010). Spectral densities of Wishart-Levy free stable random matrices. THE EUROPEAN PHYSICAL JOURNAL. B, CONDENSED MATTER PHYSICS, vol. 73, p. 13-22. LIVAN G, ALFARANO S, SCALAS E (2011). Fine structure of spectral properties for random correlation matrices: An application to financial markets. PHYSICAL REVIEW E, STATISTICAL, NONLINEAR, AND SOFT MATTER PHYSICS, vol. 84. LIVAN G, INOUE J, SCALAS E (2012). On the non-stationarity of financial time series: impact on optimal portfolio selection. JOURNAL OF STATISTICAL MECHANICS: THEORY AND EXPERIMENT

3. Non-homogeneous processes: Inspired by the previous paper on non-stationarity of financial time series, by previous work on the Mittag-Leffler generalisation of the Poisson process described below and by his interest in high-frequency finance, Enrico has started a fruitful collaboration with N. Leonenko and M. Trinh on non-homogeneous processes. Relevant papers: LEONENKO N, SCALAS E, TRINH M (2017) The fractional non-homogeneous Poisson process. STATISTICS AND PROBABILITY LETTERS, vol. 120. pp. 147-156. LEONENKO N, SCALAS E, TRINH M Limit Theorems for the Fractional Non-homogeneous Poisson Process, arXiv:1711.08768 [math.PR].

General

1. In 1998, Enrico proposed the use of continuous-time random walks as a model for tick-by-tick financial data. Relevant paper: SCALAS E, GORENFLO R, MAINARDI F. (2000). Fractional calculus and continuous-time finance. PHYSICA. A. vol. 284, pp. 376-384.

2. In 2003, Enrico introduced a Mittag-Leffler generalization of the Poisson process. Relevant papers: SCALAS E, GORENFLO R, MAINARDI F. (2004). Uncoupled continuous-time random walks: Solution and limiting behavior of the master equation. PHYSICAL REVIEW E, STATISTICAL, NONLINEAR, AND SOFT MATTER PHYSICS. vol. 69, 011107. MAINARDI F., GORENFLO R. and SCALAS E. (2004): A fractional generalization of the Poisson process, Vietnam Journal of Mathematics 32 (SI), 53-64. E-print: arxiv.org/abs/math/0701454.

3. In 2007, Enrico showed that Markovianism is compatible with classical dynamics. Relevant paper: SCALAS E., MARTIN E, GERMANO G. (2007). Ehrenfest urn revisited: Playing the game on a realistic fluid model. PHYSICAL REVIEW E, STATISTICAL, NONLINEAR, AND SOFT MATTER PHYSICS. vol. 76, 011104.

4. In 2009, Enrico showed that the quadratic variation for an important class of continuous-time random walks (compound renewal processes) is related to the M-functions of Wright type. Relevant papers: GERMANO G, POLITI M, SCALAS E., SCHILLING R.L (2009). Stochastic calculus for uncoupled continuous-time random walks. PHYSICAL REVIEW E, STATISTICAL, NONLINEAR, AND SOFT MATTER PHYSICS, vol. 79, 066102. SCALAS E, VILES N (2014). A functional limit theorem for stochastic integrals driven by a time-changed

symmetric α -stable Lévy process. STOCHASTIC PROCESSES AND THEIR APPLICATIONS, vol. 124, p. 385-410.

5. In 2015, Enrico studied an exactly solvable non-Markovian model for random dynamics on graphs. Relevant papers: RABERTO M, RAPALLO F, SCALAS E (2011). Semi-Markov graph dynamics. PLOS ONE, vol. 6, doi: 10.1371/journal.pone.0023370. GEORGIOU N, KISS IZ, SCALAS E (2015) Solvable non-Markovian dynamic network PHYSICAL REVIEW E, STATISTICAL, NONLINEAR, AND SOFT MATTER PHYSICS, vol. 92, 042801.

Proposal evaluation:

Evaluator of research proposals for the following countries: Canada, Colombia, Croatia, Estonia, Finland, France, Israel, Kuwait, Italy, The Netherlands, Sweden, Switzerland and United Kingdom.

Research grants:

July 2003 - July 2007: Ultra-high frequency dynamics of financial markets

<http://ocs.unipa.it/sito-strategico/Risorse.htm>

http://ocs.unipa.it/sito-strategico/relazioni/RelazioneScientifica_finale20071219.pdf

Role: Principal investigator of the Alessandria unit

Budget: 40000 euros (approx.) (Alessandria unit)

Funded by: Italian Ministry for University and Scientific Research

January 2006 - December 2008: Information filtering in gene expression from DNA-microarray experiments

Role: Principal investigator of the UPO-DISTA unit

Budget: 43000 euros (UPO-DISTA unit)

Funded by: Italian Ministry for University and Scientific Research

December 2008 - December 2009: Biofuel production from the viewpoint of complex systems

Role: Principal investigator

Budget: 20000 euros

Funded by: Cassa di Risparmio di Alessandria and Azienda agricola "La Corsietta"

January 2011 - December 2013: Statistical equilibrium in economics (Mexican - Italian collaboration)

Role: Principal investigator of the Italian unit

Budget: 4000 euros (Italian unit)

Funded by: Italian Ministry of Foreign Affairs, CONACYT

October 2011 - October 2013: Finitary and non-finitary probabilistic models in economics

Role: Principal investigator of the UPO-DISTA unit

Budget: 93000 euros

Funded by: Italian Ministry for University and Scientific Research

October 2013 - September 2016: Devolved start-up fund

Role: Principal investigator

Budget: 70000 pounds

Funded by: University of Sussex

March 2015 - March 2016: Lyapunov Methods and Stochastic Stability

Role: Co-investigator

Budget 12552000 Icelandic kronar

Funded by: Icelandic Research Fund

December 2016 - February 2017: VOPA - Volatility markets and Agricultural Productions: interactions between climate variability and technological development of countries in the food price formation mechanisms

Role: Principal investigator of the Sussex unit

Budget: 14157 pounds

Funded by: CNR (Italian National Research Council)

November 2018 - December 2018: JSPS short-term invitational fellowship at the International Christian

University, Japan
Role: Visiting professor
Budget: 150000 Japanese Yen
Funded by: Japan Society for the Promotion of Science

June 2019 - July 2019: INdAM Visiting Professor at the University of Salerno, Italy
Role: Visiting professor
Budget: 2000 Euro
Funded by: Istituto Nazionale di Alta Matematica “Francesco Severi”

Some academic co-workers:

Elena Akhmatskaya at Basque Center for Applied Mathematics (BCAM), Bilbao, Spain.
Tomaso Aste at the Department of Computer Science, University College London, London, UK.
Jing (Maggie) Chen at the School of Mathematics, Cardiff University, Cardiff, UK.
Tiziana Di Matteo at the Department of Mathematics, King's College, London, UK.
Cheoljun Eom at the School of Business, Pusan National University, Pusan, Korea.
Guido Germano at the Department of Computer Science, University College London, London, UK.
Alan Hawkes at Swansea University, Swansea, UK.
Alejandro Raul Hernandez Montoya at Universidad Veracruzana, Xalapa, Mexico.
Taisei Kaizoji at International Christian University, Tokyo, Japan.
Nikolai Leonenko at the School of Mathematics, Cardiff University, Cardiff, UK.
Giacomo Livan at the Department of Computer Science, University College London, UK.
Francesco Mainardi at the Physics Department, Bologna University, Italy.
Mark M. Meerschaert at the Department of Statistics and Probability, Michigan State University, USA.
Fabio Rapallo at DISTA, East Piedmont University, Italy.
René Schilling at the Institute for Mathematical Stochastic, Technical University Dresden, Germany.

Former students

Among the students whom he has collaborated with, there are:
Gilles Daniel, Wealth Management Treasurer at UBS, Zurich, Switzerland.
Giancarlo Mosetti, Quantitative Analyst, Legal and General, London, UK
Marco Raberto, Associate Professor, University of Genoa, Genoa, Italy.
Bence Toth, Senior Research Manager at Capital Fund Management, Paris, France.

Enrico Scalas has been formal co-advisor of:
Daniel Fulger (Ph.D. at Marburg University, Germany)
Egar Martin (Ph.D. at Marburg University, Germany)
Mauro Politi (Ph.D. at Milan University, Italy)
Tijana Radivojević (Ph.D. at UPV/EHU (Basque Country University) and BCAM)
Mailan Trinh (Ph.D. at the University of Sussex)

Current students

Stephen Ashton (Ph.D. candidate at University of Sussex)

Former Postdocs

Noèlia Viles Cuadros (postdoctoral fellow at BCAM) now Data Scientist at Nestlé.

Editorial activity:

Journals:

He is a member of the editorial board of the Journal of Economic Interaction and Coordination:
<http://www.springer.com/economics/economic+theory/journal/11403>

He is an academic editor of the open access Journal PLoS ONE:
<http://www.plosone.org/home.action>

He is a member of the editorial board of Fractional Calculus and Applied Analysis:
<http://www.springer.com/mathematics/analysis/journal/13540>

He is an associate editor of Advances in Complex Systems:
<http://www.worldscinet.com/acs/>

He is a member of the editorial board of International Journal of Applied Nonlinear Science:
<http://www.inderscience.com/jhome.php?jcode=ijans>

In September 2004, in Alessandria, he has organized a conference devoted to young researchers: the *First Bonzenfreies Colloquium on Market Dynamics and Quantitative Economics*. He has been a guest editor of the special issue of Physica A devoted to this conference. The volume has been published as:

Physica A Volume 355, Issue 1, Pages 1-232 (1 September 2005)
Market Dynamics and Quantitative Economics; Selection of papers presented at the First Bonzenfreies Colloquium on Market Dynamics and Quantitative Economics, 09-10 September 2004 Edited by Enrico Scalas

He has been a guest editor of a second Physica A volume published in 2007:

Physica A Volume 383, Issue 1, Pages 1 - 169 (1 September 2007)
Proceedings of the 2006 edition of the Econophysics Colloquium and the Bonzenfreies Colloquium, 23-25 November 2006
Edited by Taisei Kaizoji, Akira Namatame and Enrico Scalas

Together with Taisei Kaizoji and Akira Namatame, he has been a guest editor of a special issue of the Journal of Economic Interaction and Coordination in which ten papers appear discussed at the 2006 Econophysics Colloquium which was held in Tokyo at the International Christian University (ICU) in November 2006.
The issue is available on-line:
<http://www.springerlink.com/content/1860-711x/3/1/>

Together with Gianni Pagnini, he has been a guest editor of two special issues of Communications in Applied and Industrial Mathematics: Volume 6, Issue 1 and Volume 6, Issue 2. They contain papers presented at the 2013 Workshop on Fractional Calculus, Probability and Non-local Operators: Applications and Recent Developments, held in Bilbao from 6 to 8 November 2013 to celebrate the retirement of Francesco Mainardi. The two issues are available on-line:
<http://caim.simai.eu/index.php/caim/issue/view/48>
<http://caim.simai.eu/index.php/caim/issue/view/49>

Referee:

He has served as a referee for the following journals: Physica A, Physical Review E, Physical Review Letters, International Journal of Physics A: Mathematical and Theoretical, European Journal of Physics B, Advances in Complex Systems, Journal of Economic Dynamics and Control, Journal of Economic Behavior and Organization, Quantitative Finance, Journal of Economic Interaction and Coordination, PLoS ONE, Economics e-journal, Journal of Evolutionary Economics, Journal of Statistical Mechanics: Theory and Experiments, Journal of Statistical Physics, International Journal of Theoretical and Applied Finance. He is a reviewer for

Mathematical Reviews.

Organization of conferences and workshops:

He has been a member of the Scientific and/or Organizing Committee of the following conferences:

Econophysics Colloquium, Canberra, Australia, 14 - 18 November 2005;
<http://www.rsphysse.anu.edu.au/econophysics/index.php>

Fractal 2006, Vienna, Austria, 12 - 15 February 2006;
<http://www.kingston.ac.uk/fractal/>

Econophysics Colloquium 2006 and Third Bonzenfreies Colloquium, Tokyo, Japan, 23 - 25 November 2006;
<http://subsite.icu.ac.jp/ssri/EconophysicsColloquium2006/EconophysicsColloquium.html>

ESHIA School on Agent Based Models for Spatial Systems in Social Sciences and Economic Science with Heterogeneous Interacting Agents, La Londe les Maures, Var, France. 17 - 22 September 2007.
<http://perso.univ-rennes1.fr/denis.phan/laLonde/>

Econophysics Colloquium 2007 and Beyond, Ancona, Italy, 27 - 29 September 2007;
<http://econophysics.econ.univpm.it/>

Artificial Economics 2008, Innsbruck, Austria, 12-13 September 2008;
<http://www.uibk.ac.at/ibf/ae08/>

New Trends in Science and Technology, Ankara, Turkey, 03-04 November 2008;
<http://ntst08.cankaya.edu.tr/index.html>

3rd IFAC Workshop on Fractional Differentiation and its Applications, Ankara, Turkey, 05-07 November, 2008; <http://fda08.cankaya.edu.tr/index.html>

Econophysics Colloquium 2009, Erice, Italy, 25-31 October 2009,
<http://pil.phys.uniroma1.it/~gcalda/EC2009/>

ESHIA/WEHIA 2010, Alessandria, Italy, 23-25 June 2010;
<http://sites.google.com/site/eshia2010/home>

MAFIN 2010, Reykjavik, Iceland, 23-25 September 2010;
<http://sites.google.com/site/mafin2010/>

4th IFAC Workshop on Fractional Differentiation and its Applications, Badajoz, Spain, 18-20 October 2010;
<http://web.tuke.sk/fda10/index.html>

First Unconventional Workshop on Quantitative Finance and Economics, International Christian University, Tokyo, Japan, 21-23 February, 2011.

Artificial Economics 2012, Universitat Jaume I, Castellón de la Plana, Spain, 6-7 September, 2012;
<http://lee.uji.es/ae2012/>

MAFIN 2012, Genoa, Italy, 19-21 September 2012;
<https://sites.google.com/site/mafin2012/>

ESHIA/WEHIA 2013, Reykjavik, Iceland, 20-22 June 2013;
<https://sites.google.com/site/wehia2013/>

Econophysics Colloquium 2013 (satellite meeting of STATPHYS 25), POSTECH (APCTP Headquarters), Pohang,

Korea, 29-31 July 2013;
http://www.ies.re.kr/bbs/program.php?bo_table=program&wr_id=7

Artificial Economics 2013, Klagenfurt, Austria, 29-30 August 2013;
<http://ae2013.aau.at/>

AMMCS-2013, Waterloo, Ontario, Canada, 26-30 August 2013; Special Session on Continuous-time random walks, fractional diffusion and non-local operators: Applications to physics, finance, and engineering.
<http://www.ammcs2013.wlu.ca/ss/SS-RWFDNO.html>

Fractional Calculus, Probability and Non-Linear Operators, Bilbao, Basque Country, Spain, 6-8 November 2013.
<https://sites.google.com/site/fcpnlo/>

Intensive Research Week on Calculus of Variations, Geometric Analysis and Partial Differential Equations, Brighton, UK, 24-28 March 2014.
<http://www.sussex.ac.uk/maths/research/intensive>

Artificial Economics 2014, Barcelona, Spain, 1-2 September 2014;
<http://www.irit.fr/AE2014/>

2nd Fractional Calculus, Probability and Non-local Operators: Applications and Recent Developments, Bilbao, Basque Country, Spain, 10-14 November 2014.
<http://www.bcamaath.org/en/workshops/2workshoponfcpnlo-courseonfk2014>

AMMCS-CAIMS 2015, Waterloo, Ontario, Canada, 7-12 June 2015; Special Session on Fractional Calculus and Probability
<http://www.ammcs-caims2015.wlu.ca/special-sessions/fcp/>
Special Session on Wealth Distribution and Statistical Equilibrium in Economics
<http://www.ammcs-caims2015.wlu.ca/special-sessions/wdsee/>

Intensive Research Week on New Perspectives in Analysis and Probability, Brighton, UK, 2-6 March 2015.
<http://www.sussex.ac.uk/maths/research/intensive2015>

3rd Fractional Calculus, Probability and Non-Linear Operators, Bilbao, Basque Country, Spain, 18-20 November 2015.
<http://www.bcamaath.org/en/workshops/3rd-fractional-calculus-probability-and-non-local-operators-applications-and-recent-developments>

Workshop on Probability, Non-Local Operators and Application, Department of Mathematics, University of Sussex, UK, 2-3 June 2016.
<http://www.sussex.ac.uk/maths/research/earlierevents>

4th Fractional Calculus, Probability and Non-Linear Operators, Bilbao, Basque Country, Spain, 23-25 November 2016.
<http://www.bcamaath.org/en/workshops/fcpnlo2016>

AMMCS 2017, Waterloo, Ontario, Canada, 20-25 August 2017; Special session on Fractional Calculus and Applications
<http://www.ammcs2017.wlu.ca/special-sessions/fca/>
Special Session on Modelling of socio economic dynamics
<http://www.ammcs2017.wlu.ca/special-sessions/msed/>

5th Fractional Calculus, Probability and Non-Linear Operators, Bilbao, Basque Country, Spain, 8-10 November 2017.
<http://www.bcamaath.org/en/workshops/fcpnlo2017>

Energy Systems Study Group with Industry, Falmer, Brighton, UK 8-10 January 2018.
<http://www.sussex.ac.uk/maths/research/essgi>

6th Fractional Calculus, Probability and Non-Linear Operators, Bilbao, Basque Country, Spain, 26-28

September 2018.

<https://wp.bcamath.org/fcpnlo2018/>

Invited talks

In the last 10 years, Enrico Scalas presented invited talks at the following international meetings:

Econophysics: Trends & Challenges, Niels Bohr Institute, Copenhagen, Denmark, 08-09 May 2008.

New Trends in Science and Technology, Çankaya University, Ankara, Turkey, 03-04 November 2008.

3rd IFAC Workshop on Fractional Differentiation and its Applications, Çankaya University, Ankara, Turkey, 05 - 07 November, 2008.

Workshop on kinetic and macroscopic modeling for socio-economic and related problems
Vigevano, Italy, 27-29 November 2008.

Workshop on Jump Processes - JUMPS 09, Technische Universität Dresden, Germany, 15-17 January 2009.

MAFIN '09 (First International Workshop on Managing Financial Instability in Capitalistic Economies),
Reykjavik, Iceland, 3-5 September 2009.

4th IFAC Workshop on Fractional Differentiation and its Applications, Special session on Fractional Calculus:
Basic Theory and Neighbouring Fields, dedicated to Professor emeritus Rudolf Gorenflo (FU Berlin) on the
occasion of his 80th anniversary. University of Extremadura, Badajoz, Spain, October 18-20, 2010.

First Unconventional Workshop on Quantitative Finance and Economics, International Christian University,
Tokyo, Japan, 21-23 February, 2011.

Nonlocal Operators: Analysis, Probability, Geometry and Applications, ZIF, Bielefeld, Germany, 9-14 July,
2012.

The first workshop on fractional calculus and its applications, UAE University, College of Science, Al Ain,
United Arab Emirates, 25-26 April 2013.

Fusion of Knowledge in Stochastic Modelling of Large Complex Systems, ZIF-Bielefeld, Germany 10-14 June,
2013.

Financial Networks and Systemic Risk Analysis, Kyoto University, Kyoto, Japan, 17-19 July 2013.

First Joint International Meeting RSME-SCM-SEMA-SIMAI-UMI 2014, special session on Mathematical Aspects
and Applications of Fractional Differential Equations, Basque Country University, Leioa, 30 June - 4 July
2014.

Econophysics Colloquium 2015, Prague, Czech Republic, 14-16 September 2015.

FISMAT 2015, Palermo, Italy, 1-3 October 2015.

Ergodicity Breaking and Anomalous Dynamics, University of Warwick, UK, 10-12 August 2016.

SIMAI 2016, Milan, Italy, 13-16 September 2016.

Future Directions in Fractional Calculus Research and Applications, Michigan State University, 17-21 October
2016.

Econophysics Colloquium 2017, Warsaw, Poland, 5-7 July 2017.

Fractional PDEs: Theory, Algorithms and Applications, ICERM, Providence, RI, USA, 18-22 June 2018.

Fractional calculus and applications, In honour of Profs Rudolf Gorenflo and Theo F.

Nonnenmacher, University of Potsdam, Germany, 6-7 September 2018.

Random dynamical systems and anomalous dynamics, Imperial College London, UK, 20-22 March 2019.

Hawkes processes in finance, Stevens Institute of Technology, NJ, USA, 7-8 June 2019.

List of publications

Enrico Scalas is the author of 137 publications listed below. His works received 7743 citations and his h-index is 37 (Raw Google Scholar data retrieved on 13 July 2019).

Web of Science Indicators for ASN

Number of papers in the last 10 years: 39 (threshold 10)

Citations in the last 15 years: 735 (threshold 84)

h-index for the last 15 years: 14 (threshold 10)

Papers in peer-reviewed journals

2019:

[137] LEONENKO N, SCALAS E, TRINH M Limit Theorems for the Fractional Non-homogeneous Poisson Process, Journal of Applied Probability. ISSN 0021-9002 (Accepted), arXiv:1711.08768 [math.PR].

[136] PONTA L, TRINH M, SCALAS E, RABERTO M, CINCOTTI S (2019) Modeling non-stationarities in high-frequency financial time series, Physica A Statistical Mechanics and its Applications, 526. p. 121055. ISSN 0378-4371.

[135] BJOERNSSON H, HAFSTEIN S, GIESL P, SCALAS E, GUDMUNDSSON S (2019) Computation of the stochastic basin of attraction by rigorous construction of a Lyapunov function. Discrete and Continuous Dynamical Systems - Series B, 24 (8). pp. 4247-4269. ISSN 1531-3492.

[134] EOM C, KAIZOJI T, SCALAS E (2019) Fat Tails in Financial Return Distributions Revisited: Evidence from the Korean Stock Market, Physica A, Statistical Mechanics and its Applications, 526. p. 121055. ISSN 0378-4371.

2018:

[133] ASHTON S, GEORGIOU N, KISS IZ (2018) The Mathematics of Human Contact: Developing a Model for Social Interaction in School Children, Acta Physica Polonica A, 133 (6). pp. 1421-1432. ISSN 0587-4246.

[132] EOM C, KAIZOJI T, PARK JW, SCALAS E (2018) Realized FX Volatility: Statistical Properties and Applications, KOREAN JOURNAL OF FUTURES AND OPTIONS, vol. 26, pp.1-25

[131] HAFSTEIN S, GUDMUNDSSON S, GIESL P, SCALAS E (2018) Lyapunov function computation for autonomous linear stochastic differential equations using sum-of-squares programming, DISCRETE AND CONTINUOUS DYNAMICAL SYSTEMS - SERIES B, vol. 23, pp. 939-956, ISSN: 1531-3492, doi: 10.3934/dcdsb.2018049

2017:

[130] SCALAS E (2017) Continuous-time statistics and generalized relaxation equations, EUROPEAN PHYSICAL JOURNAL B: CONDENSED MATTER AND COMPLEX SYSTEMS, vol. 90, pp. 209-214, ISSN: 1434-6028, doi: 10.1140/epjb/e2017-80311-5

[129] CHEN JM, HAWKES AG, SCALAS E, TRINH M (2017) Performance of information criteria used for model selection of Hawkes process models of financial data, QUANTITATIVE FINANCE, vol. 18, pp. 225-235, ISSN:

1469-7688, doi: 10.1080/14697688.2017.1403140

[128] AHLFELD R, MONTOMOLI F, SCALAS E, SHAHPAR S (2017) Uncertainty quantification for fat-tailed probability distributions in aircraft engine simulations, JOURNAL OF PROPULSION AND POWER, vol. 33, p. 881-890, ISSN: 0748-4658, doi: 10.2514/1.B36278

[127] SCALAS E, RAPALLO F, RADIVOJEVIĆ T (2017) Low-traffic limit and first-passage times for a simple model of the continuous double auction, PHYSICA A, vol. 485, p. 61-72, ISSN: 0378-4371, doi: 10.1016/j.physa.2017.05.020

[126] LEONENKO N, SCALAS E, TRINH M (2017) The fractional non-homogeneous Poisson process. STATISTICS AND PROBABILITY LETTERS, vol. 120. pp. 147-156. ISSN 0167-7152.

2016:

[125] SCALAS E (2016) Random exchange models and the distribution of wealth. EUROPEAN PHYSICAL JOURNAL - SPECIAL TOPICS, vol. 225. pp. 3293-3298. ISSN 1951-6355.

[124] POLITO F, SCALAS E (2016) A generalization of the space-fractional Poisson process and its connection to some Lévy processes. ELECTRONIC COMMUNICATIONS IN PROBABILITY, vol. 21. pp. 20-34. ISSN 1083-589X

2015:

[123] GEORGIU N, KISS IZ, SCALAS E (2015) Solvable non-Markovian dynamic network PHYSICAL REVIEW E, STATISTICAL, NONLINEAR, AND SOFT MATTER PHYSICS, vol. 92, 042801, ISSN: 1539-3755, doi: 10.1103/PhysRevE.92.042801.

[122] LIVAN G, ALFARANO S, MILAKOVIC M, SCALAS E (2015). A spectral perspective on excess volatility, APPLIED ECONOMICS LETTERS, vol. 22, p. 745-750, ISSN: 1350-4851, doi: 10.1080/13504851.2014.975324.

[121] SCALAS E, GABRIEL AT, MARTIN E, GERMANO G (2015). Velocity and energy distributions in microcanonical ensembles of hard spheres PHYSICAL REVIEW E, STATISTICAL, NONLINEAR, AND SOFT MATTER PHYSICS, vol. 92, 022140, ISSN: 1539-3755, doi: 10.1103/PhysRevE.92.022140.

[120] SCALAS E., RADIVOJEVIĆ T., GARIBALDI U. (2015). Wealth distribution and the Lorenz curve: A finitary approach, JOURNAL OF ECONOMIC INTERACTION AND COORDINATION, vol. 10, p. 79-89, ISSN: 1860-711X, doi: 10.1007/s11403-014-0136-2.

2014:

[119] GERARDO-GIORDA L, GERMANO G. SCALAS E (2014). Large scale simulation of synthetic markets, COMMUNICATIONS IN APPLIED AND INDUSTRIAL MATHEMATICS, vol. 6, ISSN: 2038-0909, doi: 10.1685/journal.caim.535.

[118] RADIVOJEVIĆ T, ANSELM J, SCALAS E (2014). Ergodic Transition in a Simple Model of the Continuous Double Auction. PLOS ONE, vol. 9, e88095, ISSN: 1932-6203, doi:10.1371/journal.pone.0088095.

[117] SCALAS E, VILES N (2014). A functional limit theorem for stochastic integrals driven by a time-changed symmetric α -stable Lévy process. STOCHASTIC PROCESSES AND THEIR APPLICATIONS, vol. 124, p. 385-410, ISSN: 0304-4149, doi: 10.1016/j.spa.2013.08.005.

2013:

[116] FULGER D, SCALAS E, GERMANO G (2013). Random numbers from the tails of probability distributions using the transformation method. FRACTIONAL CALCULUS & APPLIED ANALYSIS, vol. 16, p. 332-353, ISSN: 1311-0454, doi: 10.2478/s13540-013-0021-z

[115] SCALAS E, POLITI M (2013). A note on intraday option pricing. INTERNATIONAL JOURNAL OF APPLIED

2012:

[114] SCALAS E, VILES N (2012). On the convergence of quadratic variation for compound fractional Poisson processes. FRACTIONAL CALCULUS & APPLIED ANALYSIS, vol. 15, p. 314-331, ISSN: 1311-0454, doi: 10.2478/s13540-012-0023-2

[113] LIVAN G, INOUE J, SCALAS E (2012). On the non-stationarity of financial time series: impact on optimal portfolio selection. JOURNAL OF STATISTICAL MECHANICS: THEORY AND EXPERIMENT, ISSN: 1742-5468, doi: 10.1088/1742-5468/2012/07/P07025

[112] PONTA L, SCALAS E, RABERTO M, CINCOTTI S (2012). Statistical Analysis and Agent-Based Microstructure Modeling of High-Frequency Financial Trading. IEEE JOURNAL OF SELECTED TOPICS IN SIGNAL PROCESSING, vol. 6, p. 381-387, ISSN: 1932-4553, doi: 10.1109/JSTSP.2011.2174192

2011:

[111] HERNANDEZ-MONTOYA AR, CORONEL-BRIZIO HF, STEVENS-RAMIREZ GA, RODRIGUEZ-ACHACH M, POLITI M, SCALAS E (2011). Emerging properties of financial time series in the "Game of Life". PHYSICAL REVIEW E, STATISTICAL, NONLINEAR, AND SOFT MATTER PHYSICS, vol. 84, ISSN: 1539-3755, doi: 10.1103/PhysRevE.84.066104

[110] GNESI I, ANGELOV N, ARTONI M, BAGINYAN S, BALESTRA F, BATUSOV YU, BATYUK P, BELOLAPTIKOV I, BIANCONI A, BLOKHINTSEVA T, CHIOSSO M, COLANTONI M.L, CORRADINI M, DEM'YANOV A, DROZDOV V, FROLOV V, GARFAGNINI R, GRASSO A, GREBENYUK V, IVANOV V, KIRILOV A, KOVALENKO V, RIZZINI E.L, LYASHENKO V, MAGGIORA A, MOISEENKO A, PANYUSHKIN V, PANZIERI D, PARSAMYAN B, PIRAGINO G, PONTECORVO G, ROZHDESTVENSKY A, RUSSAKOVICH N, SCALAS E, SCHEPKIN M, TOSELLO F, VENTURELLI L, ZOSI, G.F (2011). Features of pi-induced collective resonances in nuclei A semi-empirical model for collective nuclear resonances in the Delta energy region. THE EUROPEAN PHYSICAL JOURNAL. A, HADRONS AND NUCLEI, vol. 47, ISSN: 1434-6001, doi: 10.1140/epja/i2011-11003-x

[109] LIVAN G, ALFARANO S, SCALAS E (2011). Fine structure of spectral properties for random correlation matrices: An application to financial markets. PHYSICAL REVIEW E, STATISTICAL, NONLINEAR, AND SOFT MATTER PHYSICS, vol. 84, ISSN: 1539-3755, doi: 10.1103/PhysRevE.84.016113

[108] POLITI M, KAIZOJI T, SCALAS E (2011). Full characterization of the fractional Poisson process. EUROPHYSICS LETTERS, vol. 96, ISSN: 0295-5075, doi: 10.1209/0295-5075/96/20004

[107] ANGELOV N, ARTONI M, BAGINYAN S, BALESTRA F, BATUSOV YU, BATYUK P, BELOLAPTIKOV I, BIANCONI A, BLOKHINTSEVA T, CHIOSSO M, COLANTONI M.L, CORRADINI M, DEM'YANOV A, DROZDOV V, FROLOV V, GARFAGNINI R, GNESI I, GRASSO A, GREBENYUK V, IVANOV V, KIRILOV A, KOVALENKO V, RIZZINI E.L, LYASHENKO V, MAGGIORA A, MOISEENKO A, PANYUSHKIN V, PANZIERI D, PARSAMYAN B, PIRAGINO G, PONTECORVO G, ROZHDESTVENSKY A, RUSSAKOVICH N, SCALAS E, SCHEPKIN M, TOSELLO F, VENTURELLI L, ZOSI, G.F (2011). PION INDUCED REACTIONS ON (4)He IN THE Delta RESONANCE ENERGY REGION. INTERNATIONAL JOURNAL OF MODERN PHYSICS A, vol. 26, p. 705-707, ISSN: 0217-751X, doi: 10.1142/S0217751X11052591

[106] RABERTO M, RAPALLO F, SCALAS E (2011). Semi-Markov graph dynamics. PLOS ONE, vol. 6, ISSN: 1932-6203, doi: 10.1371/journal.pone.0023370

2010:

[105] GERMANO G, POLITI M, SCALAS E, SCHILLING R.L (2010). Ito and Stratonovich integrals on compound renewal processes: the normal/Poisson case. COMMUNICATIONS IN NONLINEAR SCIENCE & NUMERICAL SIMULATION, vol. 15, p. 1583-1588, ISSN: 1007-5704, doi: 10.1016/j.cnsns.2009.06.010

[104] POLITI M, SCALAS E, FULGER D, GERMANO G (2010). Spectral densities of Wishart-Levy free stable random matrices. THE EUROPEAN PHYSICAL JOURNAL. B, CONDENSED MATTER PHYSICS, vol. 73, p. 13-22,

2009:

- [103] FERRARO S, MANZINI M, MASOERO A, SCALAS E (2009). A random telegraph signal of Mittag-Leffler type. *PHYSICA. A*, vol. 388, p. 3991-3999, ISSN: 0378-4371, doi: 10.1016/j.physa.2009.06.036
- [102] SCALAS E, SCHWEITZER F (2009). Complex Networks. *ADVANCES IN COMPLEX SYSTEM*, vol. 12, p. 1-2, ISSN: 0219-5259, doi: 10.1142/S0219525909002118
- [101] GERMANO G, POLITI M, SCALAS E, SCHILLING R.L (2009). Stochastic calculus for uncoupled continuous-time random walks. *PHYSICAL REVIEW E, STATISTICAL, NONLINEAR, AND SOFT MATTER PHYSICS*, vol. 79, ISSN: 1539-3755, doi: 10.1103/PhysRevE.79.066102
- [100] SAZUKA N, INOUE J, SCALAS E (2009). The distribution of first-passage times and durations in FOREX and future markets. *PHYSICA. A*, vol. 388, p. 2839-2853, ISSN: 0378-4371, doi: 10.1016/j.physa.2009.03.027

2008:

- [99] MINICOZZI P, RAPALLO F, SCALAS E, DONDERO F (2008). Accuracy and robustness of clustering algorithms for small-size applications in bioinformatics. *PHYSICA. A*, vol. 387, p. 6310-6318, ISSN: 0378-4371, doi: 10.1016/j.physa.2008.07.026
- [98] LIM G, KIM S, SCALAS E, KIM K, CHANG K.H (2008). Analysis of price fluctuations in futures exchange markets. *PHYSICA. A*, vol. 387, p. 2823-2830, ISSN: 0378-4371, doi: 10.1016/j.physa.2008.01.040
- [97] LIM G, KIM S, KIM K, LEE D.-I, SCALAS E (2008). Dynamical behaviors of inter-out-of-equilibrium state intervals in Korean futures exchange markets. *PHYSICA. A*, vol. 387, p. 2831-2836, ISSN: 0378-4371, doi: 10.1016/j.physa.2008.01.041
- [96] POLITI M, SCALAS E (2008). Fitting the empirical distribution of intertrade durations. *PHYSICA. A*, vol. 387, p. 2025-2034, ISSN: 0378-4371, doi: 10.1016/j.physa.2007.11.018
- [95] FULGER D, SCALAS E, GERMANO G (2008). Monte Carlo simulation of uncoupled continuous-time random walks yielding a stochastic solution of the space-time fractional diffusion equation. *PHYSICAL REVIEW E, STATISTICAL, NONLINEAR, AND SOFT MATTER PHYSICS*, vol. 77, ISSN: 1539-3755, doi: 10.1103/PhysRevE.77.021122
- [94] CORONEL-BRIZIO H.F, HERNANDEZ-MONTOYA A.R, RAPALLO F, SCALAS E (2008). Statistical auditing and randomness test of lotto k/N-type games. *PHYSICA. A*, vol. 387, p. 6385-6390, ISSN: 0378-4371, doi: 10.1016/j.physa.2008.07.017

2007:

- [93] POLITI M, SCALAS E (2007). Activity spectrum from waiting-time distribution. *PHYSICA. A*, vol. 383, p. 43-48, ISSN: 0378-4371, doi: 10.1016/j.physa.2007.04.086
- [92] KIM K, YOON S.M, KIM S.Y, LEE D.I, SCALAS E (2007). Dynamical mechanisms of the continuous-time random walk, multifractals, herd behaviors and minority games in financial markets. *JOURNAL OF THE KOREAN PHYSICAL SOCIETY*, vol. 50, p. 182-190, ISSN: 0374-4884
- [91] KIM C.H, PARK C.H, KIM S.Y, KIM K, SCALAS E (2007). Dynamics of avalanche activities in financial markets. *INTERNATIONAL JOURNAL OF MODERN PHYSICS C*, vol. 18, p. 119-127, ISSN: 0129-1831
- [90] SCALAS E, MARTIN E, GERMANO G (2007). Ehrenfest urn revisited: Playing the game on a realistic fluid model. *PHYSICAL REVIEW E, STATISTICAL, NONLINEAR, AND SOFT MATTER PHYSICS*, vol. 76, p. 011104(1)-011104(6), ISSN: 1539-3755, doi: 10.1103/PhysRevE.76.011104
- [89] SCALAS E (2007). Mixtures of compound Poisson processes as models of tick-by-tick financial data.

CHAOS, SOLITONS AND FRACTALS, vol. 34, p. 33-40, ISSN: 0960-0779, doi: 10.1016/j.chaos.2007.01.047

[88] MOSETTI G, JUG G, SCALAS E (2007). Power laws from randomly sampled continuous-time random walks. PHYSICA. A, vol. 375, p. 233-238, ISSN: 0378-4371, doi: 10.1016/j.physa.2006.08.065

[87] SCALAS E, GARIBALDI U, DONADIO S (2007). Statistical equilibrium in simple exchange games I (vol 53, pg 267, 2006). THE EUROPEAN PHYSICAL JOURNAL. B, CONDENSED MATTER PHYSICS, vol. 60, p. 271-272, ISSN: 1434-6028, doi: 10.1140/epjb/e2007-00345-6

[86] GARIBALDI U, SCALAS E, VIARENGO P (2007). Statistical equilibrium in simple exchange games II. The redistribution game. THE EUROPEAN PHYSICAL JOURNAL. B, CONDENSED MATTER PHYSICS, vol. 60, p. 241-246, ISSN: 1434-6028, doi: 10.1140/epjb/e2007-00338-5

[85] SCALAS E, KIM K (2007). The art of fitting financial time series with Levy stable distributions. JOURNAL OF THE KOREAN PHYSICAL SOCIETY, vol. 50, p. 105-111, ISSN: 0374-4884

[84] TOTH B, SCALAS E, HUBER J, KIRCHLER M (2007). The value of information in a multi-agent market model - The luck of the uninformed. THE EUROPEAN PHYSICAL JOURNAL. B, CONDENSED MATTER PHYSICS, vol. 55, p. 115-120, ISSN: 1434-6028, doi: 10.1140/epjb/e2007-00046-2

[83] LIM G, KIM S, SCALAS E, KIM K (2007). Volatilities, traded volumes, and the hypothesis of price increments in derivative securities. PHYSICA. A, vol. 382, p. 577-585, ISSN: 0378-4371, doi: 10.1016/j.physa.2007.03.019

2006:

[82] GALLEGATI M, PALESTRINI A, DELLI GATTI D, SCALAS E (2006). Aggregation of Heterogeneous Interacting Agents: The Variant Representative Agent Framework. JOURNAL OF ECONOMIC INTERACTION AND COORDINATION, vol. 1, p. 5-19, ISSN: 1860-711X, doi: 10.1007/s11403-006-0001-z

[81] MEERSCHAERT M.M, SCALAS E (2006). Coupled continuous time random walks in finance. PHYSICA. A, vol. 370, p. 114-118, ISSN: 0378-4371, doi: 10.1016/j.physa.2006.04.034

[80] SCALAS E, GALLEGATI M, GUERCI E, MAS D, TEDESCHI A (2006). Growth and allocation of resources in economics: The agent-based approach. PHYSICA. A, vol. 370, p. 86-90, ISSN: 0378-4371, doi: 10.1016/j.physa.2006.04.038

[79] SCALAS E, GARIBALDI U, DONADIO S (2006). Statistical equilibrium in simple exchange games I - Methods of solution and application to the Bennati-Dragulescu-Yakovenko (BDY) game. THE EUROPEAN PHYSICAL JOURNAL. B, CONDENSED MATTER PHYSICS, vol. 53, p. 267-272, ISSN: 1434-6028

[78] SCALAS E (2006). The application of continuous-time random walks in finance and economics. PHYSICA. A, vol. 362, p. 225-239, ISSN: 0378-4371, doi: 10.1016/j.physa.2005.11.024

[77] SCALAS E, KAIZOJI T, KIRCHLER M, HUBER J, TEDESCHI A (2006). Waiting times between orders and trades in double-auction markets. PHYSICA. A, vol. 366, p. 463-471, ISSN: 0378-4371, doi: 10.1016/j.physa.2005.09.047

2004:

[76] SCALAS E, GORENFLO R, LUCKOCK H, MAINARDI F, MANTELLI M, RABERTO M (2004). Anomalous waiting times in high-frequency financial data. QUANTITATIVE FINANCE, vol. 4, p. 695-702, ISSN: 1469-7688

[75] ARNALDI R, ALESSANDRO B, ALEXA C, ARNALDI R, ATAYAN M, BAGLIN C, BALDIT A, BEDJIDIAN M, BEOLE S, BOLDEA V, BORDALO P, BORENSTEIN SR, BORGES G, BUSSIÈRE A, CAPELLI L, CASTANIER C, CASTOR J, CHAURAND B, CHEYNIS B, CHIAVASSA E, CICALO C, CLAUDINO T, COMETS MP, CONSTANTINESCU S, CORTESE P, CRUZ J, DEFALCO A, DEMARCO N, DELLACASA G, DEVAUX A, DITA S, DRAPIER O, ESPAGNON B, FARGEIX J, FORCE P, GALLIO M, GAVRILOV YK, GERSCHEL C, GIUBELLINO P, GOLUBEVA MB, GONIN M, GRIGORIAN AA, GRIGORYAN S, GROSSIORD JY, GUBER FF, GUICHARD A, GULKANYAN H, HAKOBYAN R, HAROUTUNIAN R, IDZIK M, JOUAN D, KARAVITCHEVA TL, KLUBERG L, KUREPIN AB, LEBORNEC Y, LOURENCO C, MACCIOTTA P, CORMICK MM, MARZARI-CHIESA A, MASERA M, MASONI A, MONTENO M, MUSSO A, PETIAU P, PICCOTTI A, PIZZI

JR, PRADODASILVA W, PRINO F, PUDDU G, QUINTANS C, RAMELLO L, RAMOS S, RATOMENDES P, RICCATI L, ROMANA A, SANTOS H, SATURNINI P, SCALAS E, SCOMPARIN E, SERCI S, SIGAUDO F, SITTA M, SONDEREGGER P, TARRAGO X, TOPILSKAYA NS, USAI GL (2004). Charmonia suppression in nucleus-nucleus interactions at CERN SPS. ACTA PHYSICA HUNGARICA. HEAVY ION PHYSICS, vol. 19, p. 337-341, ISSN: 1219-7580

[74] ALESSANDRO B, ALEXA C, ARNALDI R, ATAYAN M, BAGLIN C, BALDIT A, BEDJIDIAN M, BEOLE S, BOLDEA V, BORDALO P, BORGES G, BUSSIERE A, CAPELLI L, CASTANIER C, CASTOR J, CHAURAND B, CHEYNIS B, CHIAVASSA E, CICALO C, COMETS MP, CONSTANTINESCU S, CORTESE P, DELLACASA G, DEVAUX A, DE FALCO A, MARCO ND, DITA S, ESPAGNON B, FARGEIX J, FERRETTI A, FORCE P, GALLIO M, GERSCHEL C, GIUBELLINO P, GOLUBEVA MB, GRIGORYAN AA, GRIGORYAN S, GUBER FF, GUICHARD A, GULKANYAN H, IDZIK M, JOUAN D, KARAVICHEVA TL, KLUBERG L, KUREPIN AB, LE BORNEC Y, MACCIOTTA P, MAC CORMICK M, MARZARI-CHIESA A, MASERA M, MASONI A, MONTENO M, MUSSO A, OPPEDISANO C, PICCOTTI A, PIZZI JR, PRINO F, PUDDU G, QUINTANS C, RAMELLO L, RAMOS S, MENDES PR, RICCATI L, SANTOS H, SATURNINI P, SCALAS E, SCOMPARIN E, SERCI S, SHAHOIAN R, SIGAUDO F, SITTA M, SONDEREGGER P, TARRAGO X, TOPILSKAYA NS, USAI GL, VERCELLIN E, VILLATTE L, WILLIS N (2004). Fission cross sections of lead projectiles in Pb-nucleus interactions at 40 and 158 GeV/c per nucleon. PHYSICAL REVIEW. C, NUCLEAR PHYSICS, vol. 69, ISSN: 0556-2813, doi: 10.1103/PhysRevC.69.034904

[73] DI MATTEO T, AIROLDI M, SCALAS E (2004). On pricing of interest rate derivatives. PHYSICA. A, vol. 339, p. 189-196, ISSN: 0378-4371, doi: 10.1016/j.physa.2004.03.042

[72] ARNALDI R, BALDIT A, BARRET V, BASTID N, BLANCHARD G, CHIAVASSA E, CORTESE P, CROCHET P, DELLACASA G, DE MARCO N, DRANCOURT C, DUPIEUX P, FERRETTI A, FORESTIER B, INSA C, JOUVE E, GALLIO M, GENOUX-LUBAIN A, LAMOINE L, MANSO F, MEREU P, MUSSO A, OPPEDISANO C, PICCOTTI A, POGGIO F, ROSNET R, ROYER L, SATURNINI P, SCALAS E, SCOMPARIN E, SIGAUDO F, TRAVAGLIA G, VERCELLIN E, YERMIA F (2004). Performances of a prototype for the ALICE Muon trigger at LHC. IEEE TRANSACTIONS ON NUCLEAR SCIENCE, vol. 51, p. 375-382, ISSN: 0018-9499

[71] ARNALDI R, CHIAVASSA E, COLLA A, CORTESE P, DELLACASA G, DE MARCO N, FERRETTI A, GALLIO M, MUSSO A, OPPEDISANO C, PICCOTTI A, POGGIO F, SCALAS E, SCOMPARIN E, SIGAUDO F, VERCELLIN E (2004). Resistive plate chamber for thermal neutron detection. NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH. SECTION B, BEAM INTERACTIONS WITH MATERIALS AND ATOMS, vol. 213, p. 284-288, ISSN: 0168-583X

[70] SCALAS E, GORENFLO R, MAINARDI F (2004). Uncoupled continuous-time random walks: Solution and limiting behavior of the master equation. PHYSICAL REVIEW E, STATISTICAL, NONLINEAR, AND SOFT MATTER PHYSICS, vol. 69, ISSN: 1539-3755, doi: 10.1103/PhysRevE.69.011107

2003:

[69] ARNALDI R, BALDIT A, BARRET V, BASTID N, BLANCHARD G, CHIAVASSA E, CORTESE P, CROCHET P, DELLACASA G, DE MARCO N, DRANCOURT C, DUPIEUX P, ESPAGNON B, FERRETTI A, FORESTIER B, GALLIO M, GENOUX-LUBAIN A, INSA C, JOUVE F, LAMOINE L, LEFEVRE F, MANSO F, MEREU P, MUSSO A, OPPEDISANO C, PICCOTTI A, POGGIO F, ROYER L, ROSNET P, SATURNINI P, SCALAS E, SCOMPARIN E, SIGAUDO F, TRAVAGLIA G, VERCELLIN E (2003). Ageing tests on the low-resistivity RPC for the ALICE dimuon arm. NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH. SECTION A, ACCELERATORS, SPECTROMETERS, DETECTORS AND ASSOCIATED EQUIPMENT, vol. 508, p. 106-109, ISSN: 0168-9002

[68] SCALAS E, GORENFLO R, MAINARDI F, RABERTO M (2003). Revisiting the derivation of the fractional diffusion equation. FRACTALS-COMPLEX GEOMETRY PATTERNS AND SCALING IN NATURE AND SOCIETY, vol. 11, p. 281-289, ISSN: 0218-348X

[67] ALESSANDRO B, ALEXA C, ARNALDI R, ASTRUC J, ATAYAN M, BAGLIN C, BALDIT A, BEOLE S, BOLDEA V, BORDALO P, BORGES G, BUSSIERE A, CAPELLI L, CAPONI V, CASTANIER C, CASTOR J, CHAURAND B, CHEVROT I, CHEYNIS B, CHIAVASSA E, CICALO C, CLAUDINO T, COMETS MP, CONSTANS N, CONSTANTINESCU S, CORTESE P, CRUZ J, DE FALCO A, DE MARCO N, DELLACASA G, DEVAUX A, DITA S, DRAPIER O, DUCROUX L, ESPAGNON B, FARGEIX J, FORCE P, GALLIO M, GAVRILOV YK, GERSCHEL C, GIUBELLINO P, GOLUBEVA MB, GONIN M, GRIGORIAN AA, GRIGORYAN S, GROSSIORD JY, GUBER FF, GUICHARD A, GULKANYAN H, HAKOBYAN R, IDZIK M, JOUAN D, KARAVICHEVA TL, KLUBERG L, KUREPIN AB, LE BORNEC Y, LOURENCO C, MACCIOTTA P, MAC CORMICK M, MARZARI-CHIESA A, MASERA M, MASONI A, MONTENO M, MUSSO A, PETIAU P, PICCOTTI A, PIZZI

JR, DA SILVA WP, PRINO F, PUDDU G, QUINTANS C, RAMELLO L, RAMOS S, MENDES PR, RICCATI L, ROMANA A, SANTOS H, SATURNINI P, SCALAS E, SCOMPARIN E, SERCI S, SHAHOYAN R, SIGAUDO F, SILVA S, SITTA M, SONDEREGGER P, TARRAGO X, TOPILSKAYA NS, USAI GL, VERCELLIN E, VILLATTE L, WILLIS N (2003). ϕ production in Pb-Pb collisions at 158 GeV/c per nucleon incident momentum. PHYSICS LETTERS. SECTION B, vol. 555, p. 147-154, ISSN: 0370-2693

2002:

[66] REVERBERI AP, SCALAS E, VEGLIO F (2002). Numerical solution of moving boundary problems in diffusion processes with attractive and repulsive interactions. JOURNAL OF PHYSICS. A, MATHEMATICAL AND GENERAL, vol. 35, p. 1575-1588, ISSN: 0305-4470

[65] ABREU MC, ALESSANDRO B, ALEXA C, ARNALDI R, ATAYAN M, BAGLIN C, BALDIT A, BEDJIDIAN M, BEOLE S, BOLDEA V, BORDALO P, BORGES G, BUSSIERE A, CAPELLI L, CASTANIER C, CASTOR J, CHAURAND B, CHEVROT I, CHEYNIS B, CHIAVASSA E, CICALO C, CLAUDINO T, COMETS MP, CONSTANS N, CONSTANTINESCU S, CORTESE P, DE FALCO A, DE MARCO N, DELLACASA G, DEVAUX A, DITA S, DRAPIER O, DUCROUX L, ESPAGNON B, FARGEIX J, FORCE P, GALLIO M, GAVRILOV YK, GERSCHEL C, GIUBELLINO P, GOLUBEVA MB, GONIN M, GRIGORIAN AA, GRIGORIAN S, GROSSIORD JY, GUBER FF, GUICHARD A, GULKANYAN H, HAKOBYAN R, HAROUTUNIAN R, IDZIK M, JOUAN D, KARAVITCHEVA TL, KLUBERG L, KUREPIN AB, LE BORNEC Y, LOURENCO C, MACCIOTTA P, MAC CORMICK M, MARZARI-CHEISA A, MASERA M, MASONI A, MONTENO M, MUSSO A, PETIAU P, PICCOTTI A, PIZZI JR, DA SILVA WLP, PRINO F, PUDDU G, QUINTANS C, RAMELLO L, RAMOS S, MENDES PR, RICCATI L, ROMANA A, SANTOS H, SATURNINI P, SCALAS E, SCOMPARIN E, SERCI S, SHAHOYAN R, SIGAUDO F, SILVA S, SITTA M, SONDEREGGER P, TARRAGO X, TOPILSKAYA NS, USAI GL, VERCELLIN E, VILLATTE L, WILLIS N (2002). Pseudorapidity distributions of charged particles as a function of centrality in Pb-Pb collisions at 158 and 40 GeV per nucleon incident energy. PHYSICS LETTERS. SECTION B, vol. 530, p. 33-42, ISSN: 0370-2693

[64] BORDALO P, ABREU MC, ALESSANDRO B, ALEXA C, ARNALDI R, ATAYAN M, BAGLIN C, BALDIT A, BEDJIDIAN M, BEOLE S, BOLDEA V, BORDALO P, BORENSTEIN SR, BORGES C, BUSSIERE A, CAPELLI L, CASTAGNER C, CASTOR J, CHAURAND B, CHEYNIS B, CHIAVASSA E, CICALO C, CLAUDINO T, COMETS MP, CONSTANS N, CONSTANTINESCU S, CORTESE P, CRUZ J, DE FALCO A, DELLACASA G, DE MARCO N, DEVAUX A, DITA S, DRAPIER O, ESPAGNON B, FARGEIX J, FORCE P, GALLIO M, GAVRILOV YK, GERSCHEL C, GIUBELLINO P, GOLUBEVA MB, GONIN M, GRIGORIAN AA, GROSSIORD JY, GUBER FF, GUICHARD A, GULKANYAN H, HAKOBYAN R, HAROUTUNIAN R, IDZIK M, JOUAN D, KARAVITCHEVA TL, KLUBERG L, KUREPIN AB, LE BORNEC Y, LOURENCO C, MACCIOTTA P, MAC CORMICK M, MARZARI-CHIESA A, MASERA M, MASONI A, MONTENO M, MUSSO A, PETIAU P, PICCOTTI A, PIZZI JR, DA SILVA WP, PRINO F, PUDDU G, QUINTANS C, RAMOS S, RAMELLO L, MENDES PR, RICCATI L, ROMANA A, SATURNINI P, SANTOS H, SCALAS E, SCOMPARIN E, SERCI S, SHAHOYAN R, SIGAUDO F, SILVA S, SITTA M, SONDEREGGER P, TARRAGO X, TOPILSKAYA NS, USAI GL, VERCELLIN E, VILLATTE L, WILLIS N (2002). Recent results on J/psi from experiment NA50. NUCLEAR PHYSICS. A, vol. 698, p. 127C-134C, ISSN: 0375-9474

[63] ABREU MC, ALESSANDRO B, ALEXA C, ARNALDI R, ATAYAN M, BAGLIN C, BALDIT A, BEDJIDIAN M, BEOLE S, BOLDEA V, BORDALO P, BORGES G, BUSSIERE A, CAPELLI L, CASTANIER C, CASTOR J, CHAURAND B, CHEVROT I, CHEYNIS B, CHIAVASSA E, CICALO C, CLAUDINO T, COMETS MP, CONSTANS N, CONSTANTINESCU S, CORTESE P, DE FALCO A, DE MARCO N, DELLACASA G, DEVAUX A, DITA S, DRAPIER O, DUCROUX L, ESPAGNON B, FARGEIX J, FORCE P, GALLIO M, GAVRILOV YK, GERSCHEL C, GIUBELLINO P, GOLUBEVA MB, GONIN M, GRIGORIAN AA, GRIGORIAN S, GROSSIORD JY, GUBER FF, GUICHARD A, GULKANYAN H, HAKOBYAN R, HAROUTUNIAN R, IDZIK M, JOUAN D, KARAVITCHEVA TL, KLUBERG L, KUREPIN AB, LE BORNEC Y, LOURENCO C, MACCIOTTA P, MAC CORMICK M, MARZARI-CHIESA A, MASERA M, MASONI A, MONTENO M, MUSSO A, PETIAU P, PICCOTTI A, PIZZI JR, DA SILVA WLP, PRINO F, PUDDU G, QUINTANS C, RAMELLO L, RAMOS S, MENDES PR, RICCATI L, ROMANA A, SANTOS H, SATURNINI P, SCALAS E, SCOMPARIN E, SERCI S, SHAHOYAN R, SIGAUDO F, SILVA S, SITTA M, SONDEREGGER P, TARRAGO X, TOPILSKAYA NS, USAI GL, VERCELLIN E, VILLATTE L, WILLIS N (2002). Scaling of charged particle multiplicity in Pb-Pb collisions at SPS energies. PHYSICS LETTERS. SECTION B, vol. 530, p. 43-55, ISSN: 0370-2693

[62] ARNALDI R, BALDIT A, BARRET V, BASTID N, BLANCHARD G, CHIAVASSA E, CORTESE P, CROCHET P, DELLACASA G, DE MARCO N, DRANCOURT C, DUPIEUX P, ESPAGNON B, FERRETTI A, FORESTIER B, INSA C, JOUVE F, GALLIO M, GENOUX-LUBAIN A, LAMOINE L, LEFEVRE F, MANSO F, MEREU P, MUSSO A, OPPEDISANO C, PICCOTTI A, ROIG O, ROSNET P, ROYER L, SATURNINI P, SCALAS E, SCOMPARIN E, SIGAUDO F, VERCELLIN E (2002). Spatial resolution of RPC in streamer mode. NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH. SECTION A, ACCELERATORS, SPECTROMETERS, DETECTORS AND ASSOCIATED EQUIPMENT, vol.

[61] RABERTO M, SCALAS E, MAINARDI F (2002). Waiting-times and returns in high-frequency financial data: an empirical study. *PHYSICA. A*, vol. 314, p. 749-755, ISSN: 0378-4371, doi: 10.1016/S0378-4371(02)01048-8

2001:

[60] ARNALDI R, BALDIT A, BARRET V, BASTID N, BLANCHARD G, CHAMBON T, CHIAVASSA E, CORTESE P, CROCHET P, DELLACASA G, DEMARCO N, DRANCOURT C, DUPIEUX P, ESPAGNON B, FARGEIX J, FERRETTI A, GALLIO M, GENOUX-LUBAIN A, LAMOINE L, LEFEVRE F, MANSO F, MUSSO A, OPPEDISANO C, PICCOTTI A, ROIG O, ROYER L, ROSNET P, SATURNINI P, SCALAS E, SCOMPARIN E, VERCELLIN E (2001). A dual threshold technique to improve the time resolution of resistive plate chambers in streamer mode. *NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH. SECTION A, ACCELERATORS, SPECTROMETERS, DETECTORS AND ASSOCIATED EQUIPMENT*, vol. 457, p. 117-125, ISSN: 0168-9002

[59] HAAS H, CAETANO W, BORISSEVITCH GP, TABAK M, SACHEZ MIM, OLIVEIRA ON, SCALAS E, GOLDMANN M (2001). Interaction of dipyrindamole with phospholipid monolayers at the air-water interface: Surface pressure and grazing incidence X-ray diffraction studies. *CHEMICAL PHYSICS LETTERS*, vol. 335, p. 510-516, ISSN: 0009-2614

[58] ARNALDI R, CHIAVASSA E, CICALO C, CORTESE P, DE FALCO A, DELLACASA G, DE MARCO N, FERRETTI A, GALLIO M, MACCIOTTA P, MASONI A, MUSSO A, OPPEDISANO C, PICCOTTI A, PUDDU G, SCALAS E, SCOMPARIN E, SERCI S, SIDDI E, SOAVE C, USAI G, VERCELLIN E (2001). Performances of zero degree calorimeters for the ALICE experiment. *NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH. SECTION A, ACCELERATORS, SPECTROMETERS, DETECTORS AND ASSOCIATED EQUIPMENT*, vol. 456, p. 248-258, ISSN: 0168-9002

[57] ABREU MC, ALESSANDRO B, ALEXA C, ARNALDI R, ATAYAN M, BAGLIN C, BALDIT A, BEDJIDIAN M, BEOLE S, BOLDEA V, BORDALO P, BORGES G, BUSSIERE A, CAPELLI L, CASTOR J, CASTANIER C, CHAURAND B, CHEVROT I, CHEYNIS B, CHIAVASSA E, CICALO C, CLAUDINO T, COMETS MP, CONSTANS N, CONSTANTINESCU S, CORTESE P, DE MARCO N, DE FALCO A, DELLACASA G, DEVAUX A, DITA S, DRAPIER O, DUCROUX L, ESPAGNON B, FARGEIX J, FORCE P, GRIGORIAN AA, GRIGORIAN S, GROSSIORD JY, GUBER FF, GUICHARD A, GULKANYAN H, HAKOBYAN R, HAROUTUNIAN R, IDZIK M, JOUAN D, KARAVITCHEVA TL, KLUBERG L, KUREPIN AB, LE BORNEC Y, LOURENCO C, MACCIOTTA P, MAC CORMICK M, MARZARI-CHIESA A, MASERA M, MASONI A, MONTENO M, MUSSO A, PETIAU P, PICCOTTI A, PIZZI JR, PRINO F, PUDDU G, QUINTANS C, RAMOS S, RAMELLO L, MENDES PR, RICCATI L, ROMANA A, SANTOS H, SATURNINI P, SCALAS E, SCOMPARIN E, SERCI S, SHAHOYAN R, SIGAUDO F, SILVA S, SITTA M, SONDEREGGER P, TARRAGO X, TOPILSKAYA NS, USAI GL, VERCELLIN E, VILLATTE L, WILLIS N (2001). The dependence of the anomalous J/psi suppression on the number of participant nucleons. *PHYSICS LETTERS. SECTION B*, vol. 521, p. 195-203, ISSN: 0370-2693

2000:

[56] ARNALDI R, BALDIT A, BARRET V, BASTID N, BLANCHARD G, CHIAVASSA E, CORTESE P, CROCHET P, DELLACASA G, DEMARCO N, DUPIEUX P, ESPAGNON B, FARGEIX J, FERRETTI A, GALLIO M, LAMOINE L, LUQUIN L, MANSO F, METIVIER V, MUSSO A, PICCOTTI A, RAHMANI A, ROIG O, ROYER L, SCALAS E, SCOMPARIN E, VERCELLIN E (2000). A low-resistivity RPC for the ALICE dimuon arm. *NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH. SECTION A, ACCELERATORS, SPECTROMETERS, DETECTORS AND ASSOCIATED EQUIPMENT*, vol. 451, p. 462-473, ISSN: 0168-9002

[55] SCALAS E, GORENFLO R, MAINARDI F (2000). Fractional calculus and continuous-time finance. *PHYSICA. A*, vol. 284, p. 376-384, ISSN: 0378-4371, doi: 10.1016/S0378-4371(00)00255-7

[54] MAINARDI F, RABERTO M, GORENFLO R, SCALAS E (2000). Fractional calculus and continuous-time finance II: the waiting-time distribution. *PHYSICA. A*, vol. 287, p. 468-481, ISSN: 0378-4371

[53] PELIZZOLA A, PRETTI M, SCALAS E (2000). Heterochirality in Langmuir monolayers and antiferromagnetic Blume-Emery-Griffiths model. *THE JOURNAL OF CHEMICAL PHYSICS*, vol. 112, p. 8126-8136, ISSN: 0021-9606

[52] ARNALDI R, BALDIT A, BARRET V, BASTID N, BLANCHARD G, CHIAVASSA E, CORTESE P, CROCHET P, DELLACASA G, DE MARCO N, DUPIEUX P, ESPAGNON B, FARGEIX J, FERRETTI A, GALLIO M, LAMOINE L, LUQUIN L, MANSO F, METIVIER V, MUSSO A, OPPEDISANO C, PICCOTTI A, RAHMANI A, ROYER L, ROIG O, SCALAS E,

SCOMPARIN E, VERCELLIN E (2000). Influence of temperature and humidity on bakelite resistivity. NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH. SECTION A, ACCELERATORS, SPECTROMETERS, DETECTORS AND ASSOCIATED EQUIPMENT, vol. 456, p. 140-142, ISSN: 0168-9002

[51] RIDI A, SCALAS E, GLIOZZI A (2000). Noise measurements in bilayer lipid membranes during electroporation. THE EUROPEAN PHYSICAL JOURNAL. E, SOFT MATTER, vol. 2, p. 161-168, ISSN: 1292-8941

[50] ARNALDI R, CHIAVASSA E, CICALO C, CORTESE P, DE FALCO A, DELLACASA G, DE MARCO N, FERRETTI A, GALLIO M, MACCIOTTA P, MASONI A, MEREU P, MUSSO A, OPPEDISANO C, PICCOTTI A, PUDDU G, SCALAS E, SCOMPARIN E, SERCI S, SIDDI E, USAI C, VERCELLIN E (2000). Performance of a forward neutron calorimeter for the ALICE experiment. IEEE TRANSACTIONS ON NUCLEAR SCIENCE, vol. 47, p. 1503-1505, ISSN: 0018-9499

[49] ARNALDI R, BALDIT A, BARRET V, BASTID N, BLANCHARD G, CHIAVASSA E, CORTESE P, CROCHET P, DELLACASA G, DE MARCO N, DUPIEUX P, ESPAGNON B, FARGEIX J, FERRETTI A, GALLIO M, LAMOINE L, LUQUIN L, MANSO F, MEREU P, METIVIER V, MUSSO A, OPPEDISANO C, PICCOTTI A, RAHMANI A, ROYER L, ROIG O, SCALAS E, SCOMPARIN E, VERCELLIN E (2000). Study of the resistive plate chambers for the ALICE Dimuon Arm. NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH. SECTION A, ACCELERATORS, SPECTROMETERS, DETECTORS AND ASSOCIATED EQUIPMENT, vol. 456, p. 73-76, ISSN: 0168-9002

[48] ARNALDI R, BALDIT A, BARRET V, BASTID N, BLANCHARD G, CHIAVASSA E, CORTESE P, CROCHET P, DELLACASA G, DE MARCO N, DRANCOURT C, DUPIEUX P, ESPAGNON B, FARGEIX J, FERRETTI A, GALLIO M, GENOUX-LUBAIN A, LAMOINE L, LEFEVRE F, LUQUIN L, MANSO F, METIVIER V, MUSSO A, OPPEDISANO C, PICCOTTI A, ROYER L, ROIG O, ROSNET P, SCALAS E, SCOMPARIN E, VERCELLIN E (2000). The ALICE dimuon trigger: overview and electronics prototypes. NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH. SECTION A, ACCELERATORS, SPECTROMETERS, DETECTORS AND ASSOCIATED EQUIPMENT, vol. 456, p. 126-131, ISSN: 0168-9002

1999:

[47] CUNIBERTI G, RABERTO M, SCALAS E (1999). Correlations in the bond-future market. PHYSICA. A, vol. 269, p. 90-97, ISSN: 0378-4371, doi: 10.1016/S0378-4371(99)00083-7

[46] ABREU MC, ALLESANDRO B, ALEXA C, ARNALDI R, ASTRUC J, ATAYAN M, BAGLIN C, BALDIT A, BEDJIDIAN M, BELLAICHE F, BEOLE S, BOLDEA V, BORDALO P, BUSSIERE A, CAPELLI L, CAPONI V, CASAGRANDE L, CASTOR J, CHAMBON T, CHAURAND B, CHEVROT I, CHEYNIS B, CHIAVASSA E, CICALO C, COMETS MP, CONSTANS N, DEVAUX A, DITA S, DRAPIER O, DUCROUX L, ESPAGNON B, FARGEIX J, FERRETTI A, FILIPPOV SN, FLEURET F, FORCE P, GALLIO M, GAVRILOV YK, GERSCHEL C, GIUBELLINO P, GOLUBEVA MB, GONIN M, GRIGORIAN AA, GROSSIORD JY, GUBER FF, GUICHARD A, GULKANYAN H, HAKOBYAN R, HAROUTUNIAN R, IDZIK M, JOUAN D, KARAVITCHEVA TL, KLUBERG L, KUREPIN AB, LE BORNEC Y, LOURENCO C, MACCIOTTA P, MACCORMICK M, MARZARI-CHIESA A, MASERA M, MASONI A, MEHRABYAN S, MONTENO M, MOURGUES S, MUSSO A, OHLSSON-MALEK F, OPPEDISANO C, PETIAU P, PICCOTTI A, PIZZI JR, DA SILVA WLP, PUDDU G, QUINTANS C, RACCA C, RAMELLO L, RAMOS S, RATO-MENDES P, RICCATI L, ROMANA A, ROPOTAR I, SATURNINI P, SCALAS E, SCOMPARIN E, SERCI S, SHAHOYAN R, SILVA S, SITTA M, SOAVE C, SONDEREGGER P, TARRAGO X, TOPILSKAYA NS, USAI GL, VERCELLIN E, VILLATTE L, WILLIS N (1999). Fission of lead projectiles in Pb-nucleus collisions at the SPS. NUCLEAR PHYSICS. A, vol. 661, p. 321C-324C, ISSN: 0375-9474

[45] INDIVERI G, SCALAS E, LEVI AC, GLIOZZI A (1999). Morphologies in two-dimensional growth with attractive long-range interactions. PHYSICA. A, vol. 273, p. 217-230, ISSN: 0378-4371, doi: 10.1016/S0378-4371(99)00231-9

[44] ARNALDI R, BALDIT A, BARRET V, BASTID N, BLANCHARD G, CHIAVASSA E, CORTESE P, CROCHET P, DELLACASA G, DE MARCO N, DUPIEUX P, ESPAGNON B, FARGEIX J, GALLIO M, LAMOINE L, LUQUIN L, MANSO F, METIVIER V, MUSSO A, PICCOTTI A, RAHMANI A, RAMILLEN V, ROYER L, ROIG O, SCALAS E, SCOMPARIN E, VERCELLIN E (1999). The trigger of the ALICE dimuon arm: Architecture and detectors. NUCLEAR PHYSICS. A, vol. 661, p. 712C-715C, ISSN: 0375-9474

[43] RABERTO M, SCALAS E, CUNIBERTI G, RIANI M (1999). Volatility in the Italian stock market: an empirical

study. PHYSICA. A, vol. 269, p. 148-155, ISSN: 0378-4371, doi: 10.1016/S0378-4371(99)00089-8

1998:

[42] DANANI A, FERRANDO R, SCALAS E, TORRI M (1998). Collective surface diffusion on a triangular lattice in presence of ordered phases. SURFACE SCIENCE, vol. 402, p. 281-285, ISSN: 0039-6028

[41] DANANI A, FERRANDO R, SCALAS E, TORRI M (1998). Collective surface diffusion on triangular and square interacting lattice gases. SURFACE SCIENCE, vol. 409, p. 117-129, ISSN: 0039-6028

[40] REVERBERI AP, SCALAS E (1998). Dynamic scaling of a reaction-limited decay process. PHYSICA. A, vol. 254, p. 348-357, ISSN: 0378-4371

[39] SCALAS E, BREZESINSKI G, KAGANER VM, MOHWALD H (1998). Effect of chiral interactions on the structure of Langmuir monolayers. PHYSICAL REVIEW E, vol. 58, p. 2172-2178, ISSN: 1063-651X

[38] SCALAS E, RIDI A, ROBELLO M, GLIOZZI A (1998). Flicker noise in bilayer lipid membranes. EUROPHYSICS LETTERS, vol. 43, p. 101-105, ISSN: 0295-5075

[37] PETERSON IR, BREZESINSKI G, STRUTH B, SCALAS E (1998). Grazing-incidence X-ray diffraction study of octadecanoic acid monolayers. JOURNAL OF PHYSICAL CHEMISTRY. B, CONDENSED MATTER, MATERIALS, SURFACES, INTERFACES & BIOPHYSICAL, vol. 102, p. 9437-9442, ISSN: 1520-6106

[36] RIDI A, SCALAS E, ROBELLO M, GLIOZZI A (1998). Linear response of a fluctuating lipid bilayer. THIN SOLID FILMS, vol. 327, p. 796-799, ISSN: 0040-6090

[35] SCALAS E (1998). Scaling in the market of futures. PHYSICA. A, vol. 253, p. 394-402, ISSN: 0378-4371, doi: 10.1016/S0378-4371(97)00652-3

1997:

[34] DANANI A, FERRANDO R, SCALAS E, TORRI M (1997). Lattice-gas theory of collective diffusion in adsorbed layers. INTERNATIONAL JOURNAL OF MODERN PHYSICS B, vol. 11, p. 2217-2279, ISSN: 0217-9792

[33] REVERBERI AP, SCALAS E (1997). Surface selective deconstruction: A Monte Carlo study. FRACTALS-COMPLEX GEOMETRY PATTERNS AND SCALING IN NATURE AND SOCIETY, vol. 5, p. 327-332, ISSN: 0218-348X

1996:

[32] SCALAS E, BREZESINSKI G, MOHWALD H, KAGANER VM, BOUWMAN WG, KJAER K (1996). Chirality effects on 2D phase transitions. THIN SOLID FILMS, vol. 285, p. 56-61, ISSN: 0040-6090

[31] INDIVERI G, LEVI AC, GLIOZZI A, SCALAS E, MOHWALD H (1996). Cluster growth with long-range interactions. THIN SOLID FILMS, vol. 285, p. 106-109, ISSN: 0040-6090

[30] DANANI A, FERRANDO R, SCALAS E, TORRI M (1996). Multi-site correlation functions in two-dimensional lattice gases. PHYSICA. A, vol. 223, p. 149-166, ISSN: 0378-4371, doi: 10.1016/0378-4371(95)00288-X

1995:

[29] DANANI A, FERRANDO R, SCALAS E, TORRI M, BRIVIO GP (1995). LATTICE-GAS MODEL OF DIFFUSION OF NH₃ ON RE(0001). CHEMICAL PHYSICS LETTERS, vol. 236, p. 533-537, ISSN: 0009-2614

[28] BREZESINSKI G, SCALAS E, STRUTH B, MOHWALD H, BRINGEZU F, GEHLERT U, WEIDEMANN G (1995). RELATING LATTICE AND DOMAIN-STRUCTURES OF MONOGLYCERIDE MONOLAYERS. THE JOURNAL OF PHYSICAL CHEMISTRY, vol. 99, p. 8758-8762, ISSN: 0022-3654

1994:

[27] TORRI M, FERRANDO R, SCALAS E, BRIVIO GP (1994). COLLECTIVE DIFFUSION IN A LATTICE-GAS -

APPLICATION TO O/W(110). SURFACE SCIENCE, vol. 307, p. 565-569, ISSN: 0039-6028

[26] TORRI M, FERRANDO R, SCALAS E, BRIVIO GP (1994). COLLECTIVE DIFFUSION IN A LATTICE-GAS - APPLICATION TO O/W(110). SURFACE SCIENCE, vol. 318, p. 443, ISSN: 0039-6028

[25] STRUTH B, SCALAS E, BREZESINSKI G, MOHWALD H, BRINGEZU F, BOUWMAN WG, KJAER K (1994). INFLUENCE OF A HYDROPHILIC SPACER ON THE STRUCTURE OF A PHOSPHOLIPID MONOLAYER. NUOVO CIMENTO DELLA SOCIETÀ ITALIANA DI FISICA. D CONDENSED MATTER, ATOMIC, MOLECULAR AND CHEMICAL PHYSICS, BIOPHYSICS, vol. 16, p. 1545-1550, ISSN: 0392-6737

[24] SCALAS E, FERRANDO R (1994). PAIR-CORRELATION FUNCTION IN 2-DIMENSIONAL LATTICE GASES. PHYSICAL REVIEW E, vol. 49, p. 513-520, ISSN: 1063-651X

[23] FERRANDO R, SCALAS E, TORRI M (1994). PROJECTION-OPERATOR ROUTE TO THE GENERALIZED DARKEN EQUATION. PHYSICS LETTERS A, vol. 186, p. 415-418, ISSN: 0375-9601

[22] GLIOZZI A, LEVI AC, MENESSINI M, SCALAS E (1994). TEMPERATURE AND DISEQUILIBRIUM DEPENDENCE OF CLUSTER GROWTH. PHYSICA. A, vol. 203, p. 347-358, ISSN: 0378-4371, doi: 10.1016/0378-4371(94)90003-5

1993:

[21] FERRANDO R, SCALAS E, TORRI M (1993). COLLECTIVE AND TRACER DIFFUSION IN LOW-COVERAGE ADSORBATES. JOURNAL OF ELECTRON SPECTROSCOPY AND RELATED PHENOMENA, vol. 64-5, p. 813-818, ISSN: 0368-2048

[20] GENCO I, GLIOZZI A, RELINI A, ROBELLO M, SCALAS E (1993). ELECTROPORATION IN SYMMETRICAL AND ASYMMETRIC MEMBRANES. BIOCHIMICA ET BIOPHYSICA ACTA, vol. 1149, p. 10-18, ISSN: 0006-3002

[19] SCALAS E, VIANO GA (1993). EPSILON-ENTROPY AND EPSILON-CAPACITY IN THE THEORY OF ILL-POSED PROBLEMS. INVERSE PROBLEMS, vol. 9, p. 545-550, ISSN: 0266-5611

[18] FERRANDO R, SCALAS E (1993). INCOHERENT-SCATTERING WIDTH IN 2D SYSTEMS WITH LATERAL INTERACTIONS. SURFACE SCIENCE, vol. 287, p. 907-910, ISSN: 0039-6028

[17] SCALAS E, VIANO GA (1993). RESOLVING POWER AND INFORMATION-THEORY IN SIGNAL RECOVERY. JOURNAL OF THE OPTICAL SOCIETY OF AMERICA. A, OPTICS AND IMAGE SCIENCE, vol. 10, p. 991-996, ISSN: 0740-3232

[16] FERRANDO R, SCALAS E (1993). SELF-DIFFUSION IN A 2D LATTICE GAS WITH LATERAL INTERACTIONS. SURFACE SCIENCE, vol. 281, p. 178-190, ISSN: 0039-6028

[15] SCALAS E, VIANO GA (1993). THE HAUSDORFF MOMENTS IN STATISTICAL-MECHANICS. JOURNAL OF MATHEMATICAL PHYSICS, vol. 34, p. 5781-5800, ISSN: 0022-2488

1990:

[14] SCALAS E, LEVI AC, GLIOZZI A (1990). A COMPUTER STUDY OF A SIMPLE STATISTICAL-MECHANICAL MODEL OF PHOSPHOLIPID MONOLAYERS AND BILAYERS. JOURNAL DE PHYSIQUE, vol. 51, p. C7333-C7338, ISSN: 0302-0738

Chapters in books

[13] DÜRING B, GEORGIU N, SCALAS E (2017). A stylised model for wealth distribution. In: Akura, Yuji and Kirman, Alan (eds.) Economic Foundations of Social Complexity Science. Springer Singapore, Singapore, pp. 95-117. ISBN 9789811057045.

[12] GARIBALDI U, RADIVOJEVIC T, SCALAS E (2013). Interplay of simple stochastic games as models for the economy. In: Proceedings of Applications of Mathematics 2013, Institute of Mathematics, Academy of

Sciences of the Czech Republic, Prague, 77-87.

[11] SCALAS E (2011). A class of CTRWs: Compound fractional Poisson processes. In: Fractional dynamics: Recent Advances. p. 353-374, SINGAPORE:World Scientific, ISBN: 9814340588

[10] SCALAS E, CINCOTTI S, DOSE C, RABERTO M (2005). Fraudulent agents in artificial financial markets. In: T. LUX, S. REITZ, E. SAMANIDOU. Nonlinear Dynamics And Heterogenous Interacting Agents. BERLIN:Springer, ISBN: 3540222375

[9] MAINARDI F, GORENFLO R, SCALAS E (2004). A renewal process of Mittag-Leffler type. In: M.M. NOVAK. Thinking in Pattern. p. 35-46, SINGAPORE:World Scientific, ISBN: 9812388222

[8] SCALAS E (2004). Five years of continuous-time random walks in Econophysics. In: AKIRA NAMATAME, TAISEI KAIZOUJI, YUUJI ARUKA. The Complex Networks of Economic Interactions. p. 3-16, BASEL:Birkhauser

[7] SCALAS E, GORENFLO R, MAINARDI F, RABERTO M (2002). Revisiting the derivation of the fractional diffusion equation. In: FERREYDOON FAMILY, MOHAMED DAOUD, HANS J. HERRMANN, H. EUGENE STANLEY. Scaling and Disordered Systems. p. 281-289, SINGAPORE:World Scientific

[6] GORENFLO R, MAINARDI F, SCALAS E, RABERTO M (2001). Fractional Calculus and Continuous-Time Finance III: the Diffusion Limit. In: M KOHLMANN, S TANG. Mathematical Finance. p. 171-180, BASEL: Birkhauser, ISBN: 3764365536

Books

[5] BALEANU D, DIETHELM K, SCALAS E, TRUJILLO J.J (2012). Fractional Calculus Models and Numerical Methods. p. 1-400, SINGAPORE: World Scientific, ISBN: 9814355208. BALEANU D, DIETHELM K, SCALAS E, TRUJILLO J.J (2016). Fractional Calculus Models and Numerical Methods (2nd Edition) p. 1-476, SINGAPORE: World Scientific, ISBN: 978-981-3140-03-5.

[4] GARIBALDI U, SCALAS E (2010). Finitary Probabilistic Methods in Econophysics. CAMBRIDGE: Cambridge University Press, ISBN: 9780521515597

Edited journal issues

[3] NAMATAME A, KAIZOUJI, T, SCALAS E (eds.) (2008). Journal of Economic Interaction and Coordination - Selection of papers presented at the Econophysics Colloquium, Tokyo, 2006. Di AA.VV.. vol. 3, p. 1-118, BERLIN:Springer

[2] KAIZOUJI T, NAMATAME A, SCALAS E (eds.) (2007). Physica A - Proceedings of the 2006 edition of the Econophysics Colloquium and the Bonzenfreies Colloquium. vol. 383, p. 1-169, Amsterdam:Elsevier

[1] SCALAS E (ed.) (2005). Physica A - Selection of papers presented at the First Bonzenfreies Colloquium on Market Dynamics and Quantitative Economics. vol. 355, p. 1-232, Amsterdam:Elsevier

TEACHING

Since 1998, he has introduced the elements of modern *Statistical Mechanics* in the curriculum of undergraduate Physics students at East Piedmont University.

From 1998 to 2002, he has taught a course of exercises on Condensed Matter Structure.

From 2003, he has taught an introductory course in modern Statistical Mechanics. Moreover, since 2002, he has taught other two courses: an introductory course on measurement theory, probability and statistics for Materials Science students and an introductory course in Physics for Computer Science students.

He used to teach courses in *Econophysics* where he usually presented an introduction to stochastic processes and the valuation of derivatives.

In 2013/14, he taught a course on *Random Processes*. For the University of Sussex, he has then designed a new course on *Monte Carlo Simulations* for MSc students and co-designed a new course on *Statistical*

Inference for MSc students.

Special courses:

In January 2003, he taught an introductory course on *Semiconductor Physics* to French students at the IUT in Montluçon, France.

In October 2008, he taught a course on *Probability for Economists* for the Ph.D students of the International Doctoral Program in Economics at Sant'Anna School of Advanced Studies in Pisa, Italy.

In February 2010, he taught a course on *Stochastic Processes in Finance* for physics Ph.D students at Pavia University, Italy.

In November 2011, he taught a course on *Semi-Markov models for high-frequency finance* for Master and Ph.D students at BCAM - Basque Center for Applied Mathematics, Bilbao, Spain.

In November 2011, he taught a course on *Semi-Markov models for high-frequency finance* for the students of the Master on Quantitative Finance (Máster en Banca y Finanzas Cuantitativas) at Universidad Complutense, Madrid, Spain.

In April 2013, he taught part of a course entitled *An introduction to Monte-Carlo Methods* for Master and Ph.D students at BCAM - Basque Center for Applied Mathematics, Bilbao, Spain.

Courses taught in the UK

2014/15

Random Processes at level 6 (year 3 of the BSc or MMath) and at level 7 (year 4 of the MMath and MSc),

2015/16

Monte Carlo Simulations (designed by Enrico Scalas) at level 7 (year 4 of the MMath and MSc)
Financial Portfolio Analysis at level 7 (MSc)

2016/17

Monte Carlo Simulations (designed by Enrico Scalas) at level 7 (year 4 of the MMath and MSc)

2017/18

Physics Methods in Finance (year 3 of the BSc or MPhys)

2018/19

Monte Carlo Simulations (designed by Enrico Scalas) at level 7 (year 4 of the MMath and MSc)
Financial Portfolio Analysis at level 7 (MSc)

Program Building

In Italy, Enrico was actively involved in shaping a full program on materials science (scienza dei materiali) for what concerns physics courses as well as an introductory statistics and probability course. This program is still active: <http://www.disit.uniupo.it/tutto-studenti/iscritti/laurea-triennale-scienza-dei-materiali-chimica>

In the UK, he designed a new *MSc in Data Science* that has been approved by the University of Sussex and started in 2016/17. The first cohort of the MSc has graduated in August 2017 and consisted of 10 students. The second cohort consists of 13 students. In 2018/19, we had more than 30 students. Please, see: <https://www.sussex.ac.uk/study/masters/courses/mathematical-and-physical-sciences/data-science-msc>

MSc Supervision

Since 2013/14, Enrico Scalas has supervised several MSc and MMath students for their final dissertation.

They belonged to the following programmes:

MSc Corporate and Financial Risk Management

MSc Financial Mathematics

MSc Data Science

MMath Mathematics

As an example, while Head of Department, in 2016/17, Enrico Scalas supervised 22 MSc dissertations: 19 in total for the MSc Financial Mathematics and MSc Corporate and Financial Risk Management, 2 for the MSc in Data Science and 1 for the MSc in Mathematics. All these dissertations deserved a mark above pass (in several cases well above pass).

Vision and mission

Enrico Scalas supports academic freedom.

He strongly believes in the quantitative effectiveness of probabilistic and statistical methods applied to exciting research fields that have often been the realm of qualitative, even if sophisticated, analyses and researches, including Physics, Biology, Economics, Finance and History. He has established an interdisciplinary and international research group working both empirically and theoretically on the full spectrum of complex systems.

Other activities

He has been a member of Amnesty International since 1982.

He is also a supporter of two Italian NGOs: Emergency (www.emergency.it) providing life support to civilian war victims through emergency surgery and CICAP (www.cicap.it), an Italian sceptical organization promoting science and rational thought.

Languages

Italian: mother tongue

English: good working knowledge;

French: he can speak and read French;

German: he can speak and read German;

Spanish: he can speak and read Spanish;

He can read and translate documents written in Catalan, Portuguese, Dutch, Swedish, Danish and Norwegian.

Data

13 Luglio 2019

Luogo

Salerno