Mirko D'Ovidio

Current Position

Associate Professor
Mathematical Statistics and Probability
Department of Statistical Sciences
Sapienza University of Rome

Fields of Interest

- *Non-Local Boundary Value Problems:* trace processes, diffusions on irregular domains versus anomalous diffusions on regular domains, trap domains, anomalous behaviour.
- *Non-Local Initial Value Problems:* partial differential equations of fractional and higher order (fractional calculus, fractional powers of operators), time changes and (local) boundary value problems, anomalous diffusion.
- *Diffusions and Fractals:* irregular domains, irregular interfaces, trace processes and time changes.
- *Diffusions on Metric Graphs: trap vertices, motions driven by non-local BVPs.*
- *Random Fields on manifolds:* applications to cosmological data (CMB radiation, Big Bang Theory).
- *Non linear equations:* fractional logistic equation, epidemiological models: probabilistic viewpoint and numerical solutions.

Referee for

International projects.

International Journals: Stochastics, International Journal of Stochastic Analysis, Statistical Methods and Applications, Journal of Multivariate Analysis, Sankhya A - The Indian Journal of Statistics, Physica A, Journal of Statistical Physics, Differential and Integral Equations, Probability Theory and Related Fields, Fractional Calculus and Applied Analysis, Stochastic Processes and their Applications, Journal of Theoretical Probability, Statistics and Probability Letters

Reviewer for

MathSciNet

Languages

Italian :	Mother Tongue
English :	Intermediate proficiency
French :	Intermediate proficiency

Computer Skills

Operating systems :	Linux/Unix, Windows
Programming Languages :	C, C++, Java, JavaScript, Php, Sql
Scientific Languages :	Matlab, Octave, R
Markup Languages :	Html, Latex

Education, Training and Achievements

2024, November 29.

Associate Professor in Mathematical Statistics and Probability,
Dpt. of Statistical Sciences, Sapienza University of Rome.

2020, March 1.

Associate Professor in Mathematical Statistics and Probability,
Dpt. of Basic and Applied Sciences for Engineering, Sapienza University of Rome.

2017, July 2 - 14.

Ecole d'Eté de Calcul des Probabilités de Saint-Flour (Saint-Flour, France):

- *Large scale dynamics of dilute gases*, Thierry Bodineau.
- *Stochastic processes on random graphs*, Remco Van Der Hofstad.
- *Elements of combinatorial statistics*, Gabor Lugosi .

2013, July 7 - 20.

Ecole d'Eté de Calcul des Probabilités de Saint-Flour (Saint-Flour, France):

- *Brownian motion and its applications to mathematical analysis*, Krzysztof Burdzy.
- *Aggregation and high-dimensional statistics*, Alexandre Tsybakov.
- *Statistical mechanics on random graphs*, Andrea Montanari.

2012, March 1.

Researcher in Mathematical Statistics and Probability (Assistant Professor),
Dpt. of Basic and Applied Sciences for Engineering, Sapienza University of Rome.

2011, March 1.

Postdoctoral fellow in Probability at Sapienza University of Rome

Title : "Anomalous diffusions and PDEs connections".
(Supervisor : Prof. Enzo Orsingher)

2011, April - May.

Contract: "IT support ", Department of Statistics, Sapienza University of Rome.

2011, January 21.

PhD in Methodological Statistics, Sapienza University of Rome

Ph.D. Thesis : Random times and partial differential equations (Supervisor: Enzo Orsingher).

2010, July 4 - 17.

Ecole d'Eté de Calcul des Probabilités de Saint-Flour (Saint-Flour, France):

- *Random perturbation of PDEs and fluid dynamic models*, Franco Flandoli.
- *Disorder and critical phenomena through basic probability models*, Giambattista Giacomin.
- *Random walks on disordered media and their scaling limits*, Takashi Kumagai.

2009, July 5 - 18.

Ecole d'Eté de Calcul des Probabilités de Saint-Flour (Saint-Flour, France):

- *Topological complexity of smooth random functions*, Robert Adler.
- *Some mathematical problems from population genetics*, Alison Etheridge.

2009, March 17 - 26.

PhD Lectures (*Sapienza University of Rome*):

- *Brownian motion in hyperbolic spaces*, Enzo Orsingher.

2008, June 11 - July 08.

PIMS 2008 Summer school in Probability at UBC (Vancouver, Canada):

- *Discrete Spatial Processes in Probability*, Geoffrey Grimmett.
- *Brownian Motion and Analysis*, Krzysztof Burdzy.

2007, October 1.

Ph.D. fellow (student position) in Methodological Statistics.

2007, May 23.

Degree in Statistics at Sapienza University of Rome

M.S. Thesis : Stima basata sulla trasformata wavelet discreta per serie temporali a memoria lunga. (Supervisor: Francesco Battaglia).

Teaching

I currently hold the following teachings:

B.S., Probabilità e Statistica (ICI/Ing. per l'Ambiante e il Territorio)

B.S., Calcolo delle Probabilità (I3S/Ing. Gestionale)

M.S., Mathematical Methods for Chemical Engineering II (ICI/Chemical Engineering)

PhD. Program, Fractional Calculus and Probability, SBAI dpt.

Academic Experiences

I held the following (English) courses at Sapienza University of Rome:

PhD Program, SBAI Dpt.

February, 2023 - a.y. 22-23

On the connection between non-local operators and probability, 15H

February, 2022 - a.y. 21-22

Fractional Calculus and Probability, 15H

January, 2021 - a.y. 20-21

Fractional Calculus and Probability, 12H

December, 2019 - a.y. 19-20

Introduction to Fractional Calculus, 4 seminars on Fractional Calculus and Probability

January, 2019 - a.y. 18-19

Fractional Calculus and Singular Equations, Reading course, 30H

M.S. courses, Faculties of Engineering

2023 - 2024

Mathematical Methods for Chemical Engineering II (Chemical Engineering), 30H

2022 - 2023

Mathematical Methods for Chemical Engineering II (Chemical Engineering), 30H

2021 - 2022

Mathematical Methods for Chemical Engineering II (Chemical Engineering), 30H

2020 - 2021

Mathematical Methods for Chemical Engineering II (Chemical Engineering), 30H

2019 - 2020

Mathematical Methods for Chemical Engineering II (Chemical Engineering), 30H

2018 - 2019

Mathematical Methods for Chemical Engineering II (Chemical Engineering), 30H

I held the following (Italian) courses at Sapienza University of Rome:

B.S. courses, Faculties of Engineering

2023 - 2024

Calcolo delle Probabilità (I3S / Ing. Gestionale)

Probabilità e Statistica (ICI / Ing. per l'Ambiente e il Territorio)

2022 - 2023

Calcolo delle Probabilità (I3S / Ing. Gestionale)

Probabilità e Statistica (ICI / Ing. per l'Ambiente e il Territorio)

2021 - 2022

Calcolo delle Probabilità (I3S / Ing. Gestionale)

Probabilità e Statistica (ICI / Ing. per l'Ambiente e il Territorio)

2020 - 2021

Calcolo delle Probabilità (I3S / Ing. Gestionale)

Probabilità e Statistica (ICI / Ing. per l'Ambiente e il Territorio)

2019 - 2020

Calcolo delle Probabilità (I3S / Ing. Gestionale)

Probabilità e Statistica (ICI / Ing. per l'Ambiente e il Territorio)

2018 - 2019

Calcolo delle Probabilità (I3S / Ing. Gestionale)

Probabilità e Statistica (ICI / Ing. per l'Ambiente e il Territorio)

2017 - 2018

Calcolo delle Probabilità (I3S / Ing. Gestionale)

Probabilità e Statistica (ICI / Ing. per l'Ambiente e il Territorio)

2016 - 2017,

Calcolo delle Probabilità (I3S / Ing. Gestionale)

Probabilità e Statistica (ICI / Ing. per l'Ambiente e il Territorio)

2015 - 2016,

Calcolo delle Probabilità (I3S / Ing. Gestionale)

Probabilità e Statistica (ICI / Ing. per l'Ambiente e il Territorio)

2014 - 2015,

Calcolo delle Probabilità (I3S / Ing. Gestionale)

Probabilità e Statistica (ICI / Ing. per l'Ambiente e il Territorio)

2013 - 2014,

Calcolo delle probabilità (I3S / Ing. Gestionale)

Probabilità e Statistica (ICI / Ing. per l'Ambiente e il Territorio)

2012 - 2013,

Calcolo delle probabilità (I3S / Ing. Gestionale)

Probabilità e Statistica (ICI / Ing. per l'Ambiente e il Territorio)

2011, Preparatory course of Mathematics, 2011 (ICI / I3S)

M.S. courses, Faculty of Medicine and Surgery

2009, Probabilità

Graduate, Faculty of Economics

2009, Master GFM (graduate students), Stochastic processes

Graduate-Undergraduate, Faculty of Statistics

2008, Introduction to R (The R Project for Statistical Computing)

I was teaching assistant for the following courses:

Department of Statistical Sciences

B.S., Mathematica 1, Enrico Casadio Tarabusi, Fall **2011**.

B.S., Mathematica 2, Peter Laurence, Summer **2011**.

B.S., Mathematica 3, Attilio Le Donne, Fall **2011**

B.S., Probabilità, Luisa Beghin, Fall **2011**.

Department of Statistics, Probability and Applied Statistics

B.S., Mathematica 1, Enrico Casadio Tarabusi, Fall **2010**.

B.S., Mathematica 2, Peter Laurence, Summer **2010**.

B.S., Mathematica 3, Lucia Gambardella, Fall **2010**.

Academic Activities

2021 - present,
Member of the Editorial Board for Fractional Calculus and Applied Analysis, Springer

2021 - present Member of a PhD Committee (External Evaluator); University People's Democratic Republic of Algeria, Faculty of Sciences, Algeria

2020 - 2021,
Guest Editor for the special issue "Fractional and Anomalous diffusions on regular and irregular domains"- Fractal and Fractional (ISSN 2504-3110)

2019 - present,
Member of UMI - Unione Matematica Italiana

2019, External evaluator for a PhD Thesis, contact person Gianni Pagnini, Research Line Leader in BCAM, Bilbao Basque Country - Spain.

2018 - 2019,
Thesis Adviser for a BS Student (I3S)

2017, Contact person for the visiting Professor Mohammud Foondun, University of Strathclyde, Glasgow, Scotland. Talk: "Some properties of space-time fractional stochastic partial differential equations".

2015 - present,
Member of REPRISE "Register of Expert Peer Reviewers for Italian Scientific Evaluation"

2014, External evaluator for a PhD Thesis, contact person Prof. María Dolores Ruiz Medina, Department of Statistics and Operation Research, University of Granada, Spain.

2014 - present,
Member of GNAMPA - INdAM, Gruppo Nazionale per l'Analisi Matematica, la Probabilità e le loro Applicazioni

2013 - 2016,
Member of the Editorial Board of International Journal of Statistics and Probability, ISSN 1927-7032(Print), ISSN 1927-7040(Online)

2012 - present,
Member of the PhD Board in "Mathematical Models for Engineering, Electromagnetism and Nanoscience", SBAI Dpt. - Sapienza University of Rome.

I (am) have been adviser and/or co-adviser for 5 PhD Students.

Other Academic Activities

2020 - 2024,
Member of Research Quality Assessment Dept. Committee "Commissione Valutazione (VQR)"

2013 - 2015,
Member of Dept. Commitee "Giunta di Dipartimento"

Principal Investigator for the following research projects/Grants

2023 PRIN 2022 (MUR: euro 257280):
"Anomalous Phenomena on Regular and Irregular Domains: Approximating Complexity for the Applied Sciences".

2021 Ricerca Universitaria (Ateneo : progetto medio, euro 11000):
"Memory and Mathematical Models in Applied Sciences".

2020 Ricerca Universitaria (progetto GNAMPA-INdAM, euro 3150):
"Fractional and anomalous diffusions on fractal domains with reflection and Yuima Project".

2018 Ricerca Universitaria (Ateneo : progetto medio, euro 12000):
"Fractional Derivatives in Science and Engineering".

2017 Ricerca Universitaria (progetto GNAMPA-INdAM, euro 1200):
"Diffusioni rallentate su domini irregolari".

2016 Ricerca Universitaria (Ateneo : progetto piccolo, euro 4000):
"Campi aleatori sulla sfera e applicazioni".

Participant for the following research projects

2019 Ricerca Universitaria (Ateneo: progetto medio):
"Trattamento dell'incertezza: identificabilita', campi aleatori".

2018 Grandi Attrezzature Scientifiche (progetto di Ateneo):
"A state-of-the art TEM-based platform for advanced Imaging and Diffraction Analyses - TEMIDA".

2017 Ricerca Universitaria (Ateneo: progetto piccolo):
"Modelli decisionali, processi inferenziali e loro applicazioni".

2016 Ricerca Universitaria (progetto GNAMPA-INdAM):
"Variational inequalities on fractal structures".

2015 Ricerca Universitaria (Ateneo : progetto piccolo):
"Numerical and probabilistic models for the management of information".

2014 Ricerca Universitaria (Ateneo : progetto piccolo):
"Fractional D'Alembert operators and random flights".

2014 Acquisizione di medie e grandi attrezzature scientifiche (progetto di Ateneo):
"Spettrometro ad assorbimento atomico con fiamma e fornetto di grafite con sorgente di emissione continua".

2012 Ricerca Universitaria (Ateneo : progetto piccolo):
"Interazione tra equazioni frazionarie e processi aleatori con subordinatori stabili".

Awards

2022 PI for the PRIN 2022, 6th in the national ranking with a score of 99/100.

2017 Fondo finanziamento delle attivita base di ricerca, FABBR-ANVUR (euro 3000).

Events

Member of the Scientific and Organizing Committee for the Conference - Mathematical models in applied sciences in honour of Paola Loreti (postponed for the Covid19)

Member of the Scientific and Organizing Committee for the Workshop - probability and non-local operators. October 29, 2021, Rome (in presence).

Member of the Organizing Committee for the event (Divulgazione) - Il fascino della Matematica e delle sue Applicazioni. Bando terza missione per l'anno 2020 di Sapienza Università di Roma.

Member of the Organizing Committee for the event (Convegno) - (NON) AZZARDIAMO CON LA MATEMATICA. Sapienza, Facoltà di Ingegneria Civile e Industriale, 2022.

Talks

Fractional boundary value problems.
Workshop on Fractional Differential Equations, Applications and Complex Networks, November 27-December 1, 2023. Lorentz Center, Leiden, The Netherlands. (**invited**)

Fractional boundary value problems.
The 4th International Symposium on Operational and Stochastic Methods in Fractional Dynamics, September 5-9, 2023. Krakow, Poland. (**invited**)

Fractional boundary value problems.
Workshop on Fractional Calculus, Special Functions and Applications, May 12, 2023. Roma, Italy.

On the non-local boundary value problem and the probabilistic viewpoint. (**invited**)
Workshop: Recent advances in direct and inverse problems for PDEs and applications, December 5-7, 2022. Roma, Italy.

On the non-local boundary value problem and the probabilistic viewpoint.
Workshop on probability and non-local operators, December 2, 2022. Torino, Italy.

On the non-local boundary value problem from the probabilistic viewpoint.
Trento Probability Seminar, November 8, 2022. Trento, Italy. (**invited**)

Fractional Boundary value problems.
Third Italian meeting on Probability and Mathematical statistics, June 13-16, 2022, Bologna, Italy

Fractional Boundary value problems.
Deterministic and stochastic fractional differential equations and jump processes, February 21-26, **2022**, Cambridge, UK. (**invited**).

Fractional Boundary value problems.
Workshop on probability and non-local operators, October 29, **2021** - Rome, Italy (**organizer**).

Delayed and Rushed motions, "time changes, parabolic and elliptic problems" (**invited**).
Modern Stochastics: Theory and Applications V, June 1-4, **2021**, Kyiv, Ukraine (online).

Delayed and Rushed motions, "time changes and elliptic problems".
Second Italian meeting on Probability and Mathematical statistics, June 17 - 20, 2019 - Vietri sul Mare, Salerno, Italy.

Delayed and Rushed motions (**invited**).
Nonlocal and Fractional Operators : In honour of Prof. Renato Spigler, April 12 -13, **2019**, Rome, Italy.

Random time changes: delayed and rushed motions (**invited**).
6th FCPNLO Workshop: Fractional Calculus, Probability and Non-Local Operators: Applications and Recent Developments, 26 - 28 September **2018**, Bilbao, Spain.

Fractional equations and time-changed processes.
Meeting on Fractional Derivatives: Fractional Calculus and its Applications, 15 Dec 2017 – La Sapienza, S.B.A.I. Department, Rome, Italy

Fractional equations and time-changed processes (**invited**).
5th FCPNLO Workshop: Fractional Calculus, Probability and Non-Local Operators, November 10, **2017**, Bilbao, Spain .

Skew diffusions across Koch interfaces.
First Italian meeting on Probability and Mathematical statistics, June 19, 2017- June 22, 2017, Torino, Italia (joint work with R. Capitanelli).

Delayed diffusions on random Koch domains (**invited**).
Recent Developments in Probability Theory and Stochastic Processes : A conference in honor of Enzo Orsingher, September 23, **2016**, Rome, Italy.

Delayed diffusions on random Koch domains (**invited**).
Stochastic Partial Differential Equations and Applications - X, May 30 - Jun 4, **2016**, Levico, Italy (joint work with R. Capitanelli).

Delayed diffusions on random Koch domains.
Fractality and Fractionality, May 17 - May 20, **2016**, Leiden, The Netherlands (joint work with R. Capitanelli).

Coordinates change and random fields (**invited**).
Ciclo di Seminari - Progetto ERC grant PASCAL, March 18, **2015**, Tor Vergata, Rome.

Transmission problems and trace processes on Koch domains (**invited**).

Special session "Fractals" at the 10th AIMS Conference on Dynamical Systems, Differential Equations and Applications, July 07 - 11, **2014** Madrid, Spain (joint work with R. Capitanelli).

Fractional Cauchy problems on $\mathbb{S}_1^2$ and coordinates changed random fields.
ICFDA'14 - International Conference on Fractional Differentiation and its Applications, June 23 - 25, **2014**, Catania, Italy (joint work with E. Nane).

Transmission problems and time-changed diffusions on irregular domains.
Minisymposia "Degeneracies and Singularities in PDEs" at the 8th European Conference on Elliptic and Parabolic Problems, May 26 -30, **2014**, Gaeta, Italy (joint work with R. Capitanelli).

Fractional Cauchy problems on compact manifolds and coordinates changed random fields (**invited**).
Department of Mathematics "G. Peano", 17 January **2014**, Torino, Italy (joint work with E. Nane).

Time dependent Random fields on spherical non-homogeneous surfaces.
Contributed session "Gaussian and Related Processes and Random Fields" at Modern Stochastics: Theory and Applications III, September 10-14, **2012**, Kyiv, Ukraine (joint work with E. Nane).

Time dependent Random fields on spherical non-homogeneous surfaces (**invited**).
Contributed session "Anomalous Diffusion in Porous Media" at the 8th World Congress in Probability and Statistics, July 9-14, **2012**, Istanbul, Turkey (Bernoulli Society).

Partial differential equations of fractional order and processes with randomly varying time.
Dipartimento di Scienze di Base ed Applicate per l'ingegneria **2012**, Rome, Italy.

Time Dependent Random Fields on porous spheres.
Department of Mathematics, Tor Vergata University of Rome, December **2011**, Rome, Italy.

Vibrations and fractional vibrations of rods, plates and Fresnel pseudo-processes.
Workshop on Fractional Calculus and its Applications. Department of Statistical Sciences, Sapienza University of Rome, May **2011**, Rome, Italy (joint work with E. Orsingher).

Pseudo-processi di Fresnel ed equazioni di ordine superiore.
I Riunione Scientifica, Department of Statistical Sciences, Sapienza University of Rome, February **2011**, Rome, Italy (joint work with E. Orsingher).

Sulle rappresentazioni esplicite delle leggi stabili.
Comunicazione e ricerca - I giovani si incontrano, Department of Statistics, Probability and Applied Statistics, Sapienza University of Rome, June **2010**, Rome, Italy.

Explicit solutions of fractional diffusion equations via Mellin convolution of generalized gamma densities.
From Markov Processes to Brownian Motion and Beyond: An International Conference in Memory of Kai Lai Chung, June **2010**, Peking University, Beijing, China.

Processi di Bessel e del moto Browniano arrestati a differenti tempi aleatori.
XIV Riunione Scientifica, Department of Statistics, Probability and Applied Statistics, Sapienza University of Rome, February **2010**, Rome, Italy.

Processi iterati e collegamenti tra equazioni a derivate parziali di ordine frazionario ed intero.
XXIII Riunione Scientifica, Department of Statistics, Probability and Applied Statistics, Sapienza University of Rome, February **2009**, Rome, Italy.

Other Conferences, Workshops and Schools

Workshop dedicated to the memory of Professor Yuriy Kozachenk, 1 December **2020**, from 14:00 to 19:00 Kyiv time, Zoom meeting.

Recent Advances in Random Processes: A conference in honour of Paolo Baldi's 70-th birthday, September 10 - 11, **2018**, Rome, Italy.

6th FCPNLO Workshop: Fractional Calculus, Probability and Non-Local Operators: Applications and Recent Developments, Basque Center for Applied Mathematics: BCAM, September 26-28, **2018**, Bilbao, Spain.

5th FCPNLO Workshop: Fractional Calculus, Probability and Non-Local Operators, Basque Center for Applied Mathematics: BCAM, November 8-10, **2017**, Bilbao, Spain

Spring school on nonlinear PDEs, courses by S. Le Coz, A. Malchiodi, L. Rossi, E. Valdinoci. Department of

Mathematics, Sapienza University of Rome, 24 - 28 April **2014**, Rome, Italy.

Homogenization: Flows in collapsing domains and composite materials. Department of Basic and Applied Sciences for Engineering, Sapienza University of Rome, 25-27 June **2012**, Rome, Italy.

Workshop on Fractional Calculus and its Applications. Department of Statistical Sciences, Sapienza University of Rome, 20 - 21 May **2011**, Rome, Italy.

Publications and Preprints

1. M. D'Ovidio.
   Explicit solutions to fractional diffusion equations via Generalized Gamma Convolution.
   Electronic Communications in Probability **15** (2010) 457 - 474.

2. M. D'Ovidio, E. Orsingher.
   Compositions of processes and related partial differential equations.
   Journal of Theoretical Probability **24** (2011) 342 - 375.

3. M. D'Ovidio, E. Orsingher.
   Bessel processes and hyperbolic Brownian motions stopped at different random times.
   Stochastic Processes and their Applications **121** (2011) 441 - 465.

4. M. D'Ovidio.
   On the fractional counterpart of the higher-order equations.
   Statistics and Probability Letters **81** (2011) 1929 - 1939.

5. E. Orsingher, M. D'Ovidio.
   Vibrations and fractional vibrations of rods, plates and Fresnel pseudo-processes.
   Journal of Statistical Physics **145** (2011) 143 - 174.

6. M. D'Ovidio.
   From Sturm-Liouville problems to fractional and anomalous diffusions.
   Stochastic Processes and their Applications **122** (2012) 3513 - 3544.

7. E. Orsingher, M. D'Ovidio.
   Probabilistic representation of fundamental solutions to $\frac{\partial u}{\partial t} = \kappa_m \frac{\partial^m u}{\partial x^m}$.
   Electronic Communications in Probability **17** (2012) 1-12.

8. E. Orsingher, M. D'Ovidio.
   Higher-order Laplace equations and hyper-Cauchy distributions.
   Journal of Theoretical Probability (Published on line: 28 February 2013).

9. M. D'Ovidio.
   Continuous random walks and fractional powers of operators.
   Journal of Mathematical Analysis and Applications **411** (2014) 362-371.

10. M. D'Ovidio.
    Coordinates changed random fields on the sphere.
    Journal of Statistical Physics **164** (2014) 1153-1176.

11. M. D'Ovidio, E. Nane.
    Time dependent random fields on spherical non-homogeneous surfaces.
    Stochastic Processes and their Applications **124** (2014) 2098 - 2131.

12. M. D'Ovidio, B. Toaldo, E. Orsingher.
    Fractional telegraph-type equations and hyperbolic Brownian motion.
    Statistics and Probability Letters **89** (2014) 131 - 137.

13. M. D'Ovidio, R. Garra.
    Multidimensional fractional advection-dispersion equations and related stochastic processes.
    (Fractional gradient and its application to the fractional advection equation).
    Electronic Journal of Probability **19** (2014) 1-31.

14. M. D'Ovidio, B. Toaldo, E. Orsingher.
Time changed processes governed by space-time fractional telegraph equations.
Stochastic Analysis and Applications **32** (2014) 1009 - 1045.

15. M. D'Ovidio, F. Polito.
Discussion on the paper "On simulation and properties of the stable law" by L. Devroye and L. James.
Stat. Methods Appl. **23** (2014) 359-363.

16. L. Beghin, M. D'Ovidio.
Fractional Poisson process with random drift.
Electronic Journal of Probability **19** (2014) 1-26.

17. M. D'Ovidio.
Wright functions governed by fractional directional derivatives and fractional advection diffusion equations.
Methods and Applications of Analysis **22** (2015) 1-36.

18. M. D'Ovidio, E. Nane.
Fractional Cauchy problems on compact manifolds.
(Coordinate changed random fields on manifolds).
Stochastic Analysis and Applications **34** (2016) 232 – 257.

19. M. D'Ovidio, E. Orsingher, L. Sakhno.
Spectral densities related to some fractional stochastic differential equations
Electronic Communications in Probability **21** (2016) 1-15.

20. M. D'Ovidio, N. Leonenko, E. Orsingher.
Fractional spherical random fields.
Statistics and Probability Letters **116** (2016) 146 – 156.

21. R. Capitanelli, M. D'Ovidio.
Skew Brownian diffusions across Koch interfaces.
Potential Analysis **46** (2017) 431– 461.

22. R. Capitanelli, M. D'Ovidio.
Asymptotics for time-changed diffusions.
Probability Theory and Mathematical Statistics **95** (2017) 37– 54.

23. M. D'Ovidio, F. Polito.
Fractional Diffusion-Telegraph Equations and their Associated Stochastic Solutions.
Theory of Probability and its Applications **62** (2017) 692 – 718.

24. M. D'Ovidio, P. Loreti, S. S. Ahrabi.
Modified Fractional Logistic Equation.
Physica A: Statistical Mechanics and its Applications **505** (2018) 818 – 824.

25. M. D'Ovidio, P. Loreti.
Solutions of fractional logistic equations by Euler's numbers.
Physica A: Statistical Mechanics and its Applications, **506** (2018) 1081 – 1092.

26. M. D'Ovidio, P. Loreti, A. Momenzadeh, S. S. Ahrabi.
Determination of order in linear fractional differential equations.
Fractional Calculus and Applied Analysis **21** (2018) 937 - 948.

27. M. D'Ovidio, F. Iafrate, E. Orsingher.
Drifted Brownian motions governed by fractional tempered derivatives.
Modern Stochastics: Theory and Applications **5** (2018) 445– 456.

28. M. D'Ovidio, S. Vitali, V. Sposini, O. Sliusarenko, P. Paradisi, G. Castellani, G. Pagnini.
Centre-of-mass like superposition of Ornstein-Uhlenbeck processes: a pathway to non-autonomous stochastic differential equations and to fractional diffusion.
Fractional Calculus and Applied Analysis **21** (2018) 1420–1435.

29. S. Bonaccorsi, M. D'Ovidio, S. Mazzucchi.
Probabilistic representation formula for the solution of fractional high order heat-type equations.
Journal of Evolution Equations **19** (2019) 523–558.

30. R. Capitanelli, M. D'Ovidio.
Fractional equations via convergence of forms.
Fractional Calculus and Applied Analysis **22** (2019) 844 - 870.

31. M. Giona, M. D'Ovidio, D. Cocco, A. Cairoli, R. Klages.
Age representation of Lévy Walks: partial density waves, relaxation and first passage time statistics.
Journal of Physics A: Mathematical and Theoretical 2019 **52** 384001.

32. R. Capitanelli, M. D'Ovidio.
Delayed and Rushed motions through time change.
ALEA, Lat. Am. J. Probab. Math. Stat. **17** 183–204 (2020).

33. C. Balzotti, M. D'Ovidio, P. Loreti.
Fractional SIS epidemic models.
Fractal and Fractional **4** (2020) 44.

34. R. Capitanelli, M. D'Ovidio
Fractional Cauchy problem on random snowflakes.
Journal of Evolution Equations **21** (2021) 2123 - 2140.

35. M. D'Ovidio, A. C. Lai, P. Loreti.
Solutions of Bernoulli equations in the fractional setting.
Fractal and Fractional **5** (2021) 57.

36. R. Capitanelli, M. D'Ovidio
Approximation of space-time fractional equations.
Fractal and Fractional **5** (2021) 71.

37. C. Balzotti, M. D'Ovidio, A. C. Lai, P. Loreti.
Effects of fractional derivatives with different orders in SIS epidemic models.
Computation **9** (2021) 89.

38. M. D'Ovidio.
Non-local logistic equations from the probability viewpoint.
Probability Theory and Mathematical Statistics, **104** (2021) 77-87.

39. M. D'Ovidio.
Fractional Boundary Value Problems.
Fractional Calculus and Applied Analysis **25** (2022) 29-59.

40. M. D'Ovidio, E. Orsingher, L. Sakhno.
Models of space-time random fields on the sphere.
Modern Stochastics Theory and Applications DOI: 10.15559/22-VMSTA200.

41. M. D'Ovidio, A.C. Lai, P. Loreti.
Generalized binomials in fractional calculus.
Publicationes Mathematicae Debrecen **101** (2022). To appear

42. C. Alberini, R. Capitanelli, M. D'Ovidio, S. Finzi Vita.
On the time fractional heat equation with obstacle.
Journal of Computational and Applied Mathematics **415** (2022) 114470.

43. M. D'Ovidio.
On the non-local boundary value problem from the probabilistic viewpoint.
Mathematics, **10** (2022), 4122.

44. F. Colantoni, M. D'Ovidio.
On the inverse Gamma subordinator.
Stochastic Analysis and Applications (2022) 1-26.

45. M. D'Ovidio, F. Iafrate.
Elastic drifted Brownian motions and non-local boundary conditions.
Stochastic Processes and their Applications, **167** (2024), 104228.

46. M. D'Ovidio.
Fractional Boundary Value Problems and Elastic Sticky Brownian Motions
Fractional Calculus and Applied Analysis **27** (2024) 2162–2202.

47. S. Bonaccorsi, M. D'Ovidio.
Sticky Brownian motions on star graphs.
Fractional Calculus and Applied Analysis (2024). https://doi.org/10.1007/s13540-024-00336-7