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Position

November 2019– **Associate Professor of Mathematical Physics** , *University of Naples Federico II, Naples, Italy*.

Education

1991–1997 **A.Di.S.U. grants.**
(Regional authority for the Right to University Education).

October 1997 **M.Sc. Mathematics** (cum laude), *University of Naples Federico II.*

1997–1998 **C.N.R. grant.**
(National Research Council).

April 2001 **Teacher training in Mathematics** (A047), Italy.

January 2003 **Ph.D. in Applied Mathematics and Informatics**, *University of Naples Federico II.*

February 2001–October 2019 **Permanent Researcher in Mathematical Physics**. *University of Naples Federico II*.

Fields of Interest

- **Continuum mechanics**
- **Dynamical systems**
- **Mathematical models, analytic and computational methods for nonlinear problems in applied sciences**
- **Mathematical models and computational Neurosciences**

Scientific associations

1997–2015, 2017–current **National Group for Mathematical Physics (GNFM) of INdAM.**

2011–current **International Research Center for Mathematics & Mechanics of Complex System (M&MoCS).**

2017–current **Italian Society of Naturalists.**

Research Group *Multidisciplinary Approach to Natural & Anthropized Systems* (MANAS).

2018 –current **The Interuniversity Consortium "Istituto Nazionale Biostrutture e Biosistemi" (INBB – Biostructures and Biosystems National Institute)**

2022 –current **Institute of Biophysics of the Italian National Research Council (CNR-IBF, Palermo, Italy)**

Institutional and academic activity

Evaluation boards for Academic positions

- 2007 — Member of the Jury for a position of University Researcher in Mathematical Physics (MAT/07), University of Udine.
- 2011 — Member of the Jury for a position of University Researcher in Mathematical Physics (by transfer), University of Naples Federico II.
- 2017 — Member of the Jury for a position of University Researcher in Mathematical Physics (TIP. A L 240/2010, two-year extension of the contract), Universita' degli Studi dell'Insubria.
- 2021 — Member of the Jury for a position of University Researcher in Mathematical Physics (TIP. B ART. 24, COMMA 3 L. 240/2010), Universita' degli Studi di Torino.
- 2023 — Member of the Jury for a position of Associate Professor in Mathematical Physics, Universita' La Sapienza di Roma.
- Member of the Jury for a position of University Researcher in Mathematical Physics (TIP. A ART. 24, COMMA 3 L. 240/2010), Universita' degli Studi di Napoli Fedeico II.

Academic roles and appointments

- 2008–2013 — Representative of the Researchers in the Council of Faculty of Sciences MM.FF.NN, University of Naples.
- 2012–2014 — **Member of the Scientific Council** of *Master in Environmental Risk: Analysis and monitoring for polluted sites remediation*. Faculty of Sciences MM.FF.NN- University of Naples Federico II.
- 2012–2013 — **Member of the Scientific Council** of *Specialization Course in "Didactics of Natural Sciences"*. Faculty of Sciences MM.FF.NN- University of Naples Federico II.
- 2019–2020 — Representative of the Researchers in the Council of Scuola Politecnica e delle Scienze di base, University of Naples.
- 2018–2024 — Member of the Teaching Staff-Student Joint Committee (Department of Mathematics and Applications), University of Naples.

Scientific projects

Coordinator or Principal Investigator

- 2002–2003 — **Scientific Project for Young Researchers** (Italian Ministry of Research and University), *"Nonlinear effects on wave propagation in elastic media: theory and applications to seismology"*. **[Coordinator]**
- 2009–2012 — **Scientific Project in Neuroscience** (Multicentre Research Project funded by Compagnia di San Paolo), *"Molecular Mechanisms of Memory: Identification and Modeling"*. **[Principal Investigator]**
- 2020–2023 — **The HBP Calls for Expression of Interest for SGA3 "Rodent microcircuits"** (Human Brain Project), *"whole-bRaIn rodent SpikING neural NETworks" (RisingNet)*. **[Principal Investigator]**
- **The HBP Research Infrastructure Voucher Programme Call 2019** (Human Brain Project), *"Multiscale Mathematical Modeling: from Neurons to Networks" (M3N2)*. **[Principal Investigator]**
- 2022–current — **Rafforzamento e creazione di IR nell'ambito del Piano Nazionale di Ripresa e Resilienza** (PNRR), *"European Brain ReseArch INfrastructureS-Italy" (EBRAINS-Italy)*. **[Principal Investigator]**

Scientific projects (continued)

Participant

2000-2002 **PRIN 2000** (Italian Ministry of Research and University) *"Modeling and Mathematical Methods to Support Cancer Researh"* (Modelli e Metodi della Fisica-Matematica a Sostegno della Ricerca contro i Tumori).

2003-2004 **Scientific Project L.R. 5/2002** (Regional authority) *"Nonlinear effects on waves propagation in elastic media: theory and ideal experiments for constitutive equations"* (Effetti non lineari sulla propagazione delle onde nei mezzi elastici: teoria e progettazione di esperimenti per le equazioni costitutive).

2002-2005 **PON 2002** Misura 2.1.a PON Nazionale Pia Innovazione I/2002 (Italian Ministry of Economic Development) *"A mathematical model for the management of a Service Center"*.

2004-2005 **Campania Start Up 2004** (Regional authority) *"Optimath: Ottica teorica ed applicata"* (Optimath: theoretical and applied Optics, awarded project (third position)).

2009-2010 **Research Project D.L. 21/2008** (Italian Ministry of Research and University) *"The Bridge..." Orientation and connection path with the Instruction system of University* ("Il Ponte..." Percorso di orientamento e di raccordo con l'Università nel sistema di istruzione).

2009-2011 **FARO 2009** (Research Project funded by Compagnia di San Paolo) *"Analytical and computational methods for advanced mathematical problem"* (Metodi analitici e computazionali per problemi matematici avanzati a carattere intra ed interdisciplinari).

2010-2011 **Research Project D.L. 21/2008** (Italian Ministry of Research and University) *"The Bridge..." Orientation and connection path with the Instruction system of University* ("Il Ponte..." Percorso di orientamento e di raccordo con l'Università nel sistema di istruzione).

2011-2013 **FARO 2011** (Research Project funded by Compagnia di San Paolo) *"Mathematical Methods for modeling natural phenomena"* (Metodi Matematici per la modellizzazione di fenomeni naturali).

2015-2016 Local Grant *"Analysis of Complex Biological Systems"*. [Partecipant]

2015-2017 **STAR 2014** (Research Project funded by Compagnia di San Paolo) *"Variational Analysis and Equilibrium Models in Physical and Socio-Economic Phenomena"*.

2020–2023 **The HBP Research Infrastructure Voucher Programme Call 2019** (Human Brain Project), *"Multiscale Mathematical Modeling: from Neurons to Networks" (M3N2)*.

Editorial Activities

Editorial Board Member

November 2012–current Member of the Editorial Board of *Applied Mathematics* (Scientific Research Publishing); ISSN (Print): 2152-7385; ISSN (Online): 2152-7393.

March 2013–current Member of the Editorial Board of *American Journal of Applied Mathematics and Statistics* (Science and Education Publishing); ISSN (Print): 2328-7306; ISSN (Online): 2328-7292.

January 2014–December 2017 Member of the Editorial Board of *Journal of Advanced Research in Applied Mathematics and Statistics* (Advance Research Publications).

May 2016–current Review Editor of *Dynamical Systems (Frontiers in Applied Mathematics and Statistics)* (Frontiers).

May 2020–February 2023

Editorial Activities (continued)

June 2023-current — Associate Editor of *Dynamical Systems* (*Frontiers in Applied Mathematics and Statistics*) (Frontiers).

August 2020–current — Topic Editor of *Symmetry* (MDPI).

April 2022–current — Advisory Board Member of *Computer Sciences & Mathematics Forum* (MDPI).

May 2023–current — Review Editor of *Frontiers in Computational Neuroscience* (Frontiers).

Guest Editor of Special Issues

2013 — *Special Issue–Mathematical Modeling*, Applied Mathematics (Scientific Research Publishing).

Special Issue–Advances in Mathematical Physics, Applied Mathematics (Scientific Research Publishing).

2021-22 — *Special Issue–Mathematical and Data-Driven Computational Modelling in Neuroscience*, Mathematical Biosciences and Engineering (AIMS Press).

Scientific & Organizing Committees

2015 — Member of the scientific committee *Mathematica Italia, 7° User Group Meeting*, (Naples, Italy).

2017 — Member of local organizing committee *Variational Analysis and Equilibrium Models in Physical and Socio-Economics Phenomena*, (Naples, Italy).

2019 — Member of the scientific committee *International Workshop on Mathematical Modeling for Science and Engineering*, (Naples, Italy).

2024 — Member of the scientific committee *Workshop: The EBRAINS-Italy Research Infrastructure for Neuroscience challenges*, (Naples, Italy).

Journals, Books & Research Projects Reviewer

Journals Reviewer

- **Applied Mathematical Modeling** , Elsevier.
- **Journal of Computational and Applied Mathematics**, Elsevier.
- **Mathematical and Computer Modelling**, Elsevier.
- **Applied Mathematics and Computation**, Elsevier.
- **Transportation Research Part A: Policy and Practice**, Elsevier.
- **Communications in Nonlinear Science and Numerical Simulation**, Elsevier.
- **Utilities Policy**, Elsevier.
- **Technological Forecasting and Social Change**, Elsevier.
- **Journal of Computational Neuroscience**, Springer.
- **Physica A**, Springer.
- **International Journal for Computational Methods in Engineering Science & Mechanics**, Taylor & Francis.
- **Mathematical and Computer Modelling of Dynamical Systems**, Taylor & Francis.
- **Journal of Applied Mathematics**, Hindawi.
- **Biophysical Reviews and Letters**, World Scientific.
- **Frontiers in Applied Mathematics and Statistics** (section Dynamical Systems), Frontiers.

Journals, Books & Research Projects Reviewer (continued)

- **Mathematics** (section Computational and Applied Mathematics), MDPI.
- **Mathematical Reviews**, American Mathematical Society.
- **Heliyon**, Cell Press.

Books Reviewer

- **Birkhauser Science**, Springer Publisher.

Research Projects Reviewer

- Research programs funded by the Romanian Government through the National Council for Scientific Research.
- Research programs funded by the Free University of Bozen.

Oral Presentations & Posters

2024 EBRAINS Brain Simulation Workshop 2024 , Invited Speaker, June 3-7, Bizkaia Aretoa Conference Hall, Bilbao, Spain.

2022 Neuroscience 2022 (Society for Neuroscience) *An adaptive GLIF model for hippocampal CA1 pyramidal neurons and interneurons* (with E. Spera, V. De falco, A. Iuorio, C.A. Lupascu, and M. Migliore), Poster Session: Intrinsic Membrane Properties, Electrical Synapses, and Signal Integration - Session number: B.06 - Abstract Control Number: 363.19 - San Diego Convention Center: November 14, Halls B-H, San Diego CA.

2019 DSABNS 2019 (10th International Conference Dynamical System Applied to Biology and Natural Science), Invited Speaker, February 3-6, Naples.

2018 Workshop of MANAS Group, Oral presentation, February 28, Società dei Naturalisti in Napoli, Naples.

2017 Workshop "Metodi e modelli matematici per la Biologia, la Medicina e l'Ambiente", Oral presentation, December 4, Portici, Naples.

2016 Neuroscience 2016 (Society for Neuroscience) *A mathematical model for the response of olfactory sensory neurons to odor mixtures* (with A. De Paris and M. Migliore), Poster Session: Primary Olfactory Signal Transduction(N.325) - Session number: 325 - Abstract Control Number: 3472 - San Diego Convention Center: Halls B-H, San Diego CA.

2014 9^{th} Forum of Neuroscience FENS (Federation of European Neuroscience Societies), *A Fast and Accurate Method to reduce the computational complexity of biophysically accurate models of neurons and synaptic inputs* (with M. Migliore), Session: G08 - Abstract Number: FENS-0689 - Poster Board Number: G022, Milan, Italy.

2013 Seminar FARO 2012, Dept Mathematics and Applications, University of Naples Federico II, *Verso modelli a larga scala di sistemi celebrali: un nuovo metodo per ridurre la complessità dei neuroni* (with M. Migliore), Naples.

2009 Conference SIMAI 2009 (Italian Society of Applied and Industrial Mathematics), *Second-order effects on the wave propagation in finite elasticity*, Rome.

2007 Workshop: New frontiers of Mathematics in Applied Sciences, *Hadamard's theory of wave propagation in second–order elasticity*, University of Ferrara.

Seminar Wolfram Research 2007, *Research of periodic solutions of autonomous planar system with Mathematica*, University of Naples.

Oral Presentations & Posters (continued)

2006 Workshop: Methods and Models of Mathematical Physic in Applied Sciences II, *Periodic solutions of a planar autonomous system by Mathematica*, University of Naples.

2005 Workshop: Kinetic Theory and Continuum Mechanics, *Fermat's principle and optical aberrations*, University of Ferrara.

2004 Seminar Wolfram Research 2004, *The critical case and Hopf's bifurcation, The principle gyroscopic effect in any solid*, University of Naples.

2000 Workshop: Methods and Models of Mathematical Physic in Applied Sciences I, *New proposal for a hydrodynamic scalar traffic model*, University of Naples.

Teaching Activities

Ph.D., second level master, and specialization programmes

1998–1999 **Probability**, *Ph.D. in Applied Mathematics and Informatics and Students with INdAM scholarships*, (assistant to the course of Prof. G. Salinetti).

2004–2008 **Simulations in the Science and the virtual laboratory**, *Postgraduate School of Teacher Training in Natural Science*.

2011 **Mathematical methods and models in Natural Science**, *Specialization Course in "Didactics of Natural Sciences"*.

2011–2014 **Introduction to mathematical model in lake ecology**, *Master (second level) in Environmental Risk: Analysis and monitoring for polluted sites remediation*.

Bachelor and Master courses

2001–2010 **Introduction to the software Mathematica** , *Bachelor and Master in Mathematics*.

2005–2006 **Preliminary Mathematics Course**, *Bachelor in Biology*.

2005–2009 **Mathematics and Statistics**, *Bachelor in Biology*.

2006–2008 **Preliminary Mathematics Course**, *Bachelor in Mathematics and Physics*.

2008–2010 **Methods and mathematical models**, *Master in Biology*.

2009–2018 **Advanced Mathematical Physics** (mod. II), *Master in Mathematics*.

2010–2012 **Mathematical Physics**, *Bachelor in Science and Engineering of Materials*.

2013–2020 **Analytical Mechanics**, *Bachelor in Physics*.

2019–current **Continuum Mechanics**, *Master in Mathematics*.

Rational Mechanics, *Master in Architectural Engineering*.

2020–current **Rational Mechanics**, *Bachelor in Building Engineering*.

2021–2022 **Rational Mechanics**, *Bachelor in Civil Engineering*.

Scientific project, third mission, web learning

2006 **Fluidodynamics** (Prof. A. Romano), *ARPA (Regional Environmental Protection Agency)*.

2009–2011 **Mathematical models**, *Research Project D.L. 21/2008 (Italian Ministry of Research and University)*.

2009 **Methods and mathematical models** (Italian), *Federica Web Learning* (http://www.federica.unina.it/corsi/metodi-e-modelli-matematici/).

2014 **Measure of distances and heights using the similarity of triangles** (Italian), *Research Project LOGIMAT, D.G.R. 794*.

Teaching Activities (continued)

Assistant to the courses

2001–2002 **Rational Mechanics** (Prof. A. Romano), *Master in Physics*.

2002–2010 **Analytical Mechanics** (Prof. A. Romano), *Bachelor in Physics*.

2004–2006 **Mathematical Physics** (Prof. C. Tenneriello), *Bachelor in Mathematics*.

2004–2009 **Advanced Mathematical Physics** (Prof. A. Romano), *Master in Mathematics*.

Training responsibilities

Postdoctoral researchers and Ph.D. students

2010–2012 **A. Limongiello**, *"Molecular Mechanism of memory: Mathematical models and computer simulations of the neural networks with NEURON and other scientific softwares".*

2012–2019 **T. Drammatico**, *"Conseguenze di un approccio geometrico al paradosso dei gemelli" (Italian), Ph.D Thesis in Mathematics.*

2020–2021 **V. De Falco**, *"Sviluppo di un framework matematico per la riduzione di complessita' di reti di neuroni realistici - HBP voucher 63".*

2022–2023 **C. Tribuzi**, *"Mathematical, statistical and computational models and methods for the reduction of the complexity of neurons and neuronal networks" - HBP RisingNet.*

2023–current **M. Naseer**, *Ph.D student 38th cycle of Doctoral School in Mathematics and Applications (funded by EBrains-Italy, PNRR Project)*

R. Shah, *Ph.D student 38th cycle of Doctoral School in Mathematics and Applications(funded by EBrains-Italy, PNRR Project)*

Master Students Supervised

2007 A. Picucci, **Metodo delle differenze finite per le equazioni ellittiche lineari e applicazioni alla Fisica Matematica** (Italian), *Master in Mathematics*.

2013 A. Iuorio, **Mathematical models for vegetation pattern formation** (English), *Master in Mathematics*.

A. Fuggi, **Modelli matematici per l'eutrofizzazione di laghi e lagune** (Italian), *Master in Mathematics*.

2014 R. Di Rosa, **Modelli matematici per la crescita dei biofilm negli impianti di trattamento delle acque reflue** (Italian), *Master in Mathematics*.

S. Nocerino, **Mathematical and computational models of biofilm formation in cultural heritage** (English), *Master in Mathematics*.

G. Ascione, **Modelli matematici di vegetazione con feedback negativo pianta-suolo** (Italian), *Master in Mathematics*.

S. Fiengo, **Modelli fisico-matematici per i corpi idrici superficiali e indici di qualita' ambientale** (Italian), *Master in Mathematics*.

2016 M. Mottola, **Modelli matematici dei Kite Wind Generator** (Italian), *Master in Mathematics*.

2017 I. Carannante, **Mathematical modeling to predict the response of ORNs to odor mixtures from single odor response** (English), *Master in Mathematics*.

C. Di Costanzo, **Modelli matematici per l'eutrofizzazione e per la contaminazione da metalli pesanti dei bacini lacustri** (Italian), *Master in Mathematics*.

A. Abate, **Modelli matematici deterministici ed individual-based di dinamica della vegetazione** (Italian), *Master in Mathematics*.

Training responsibilities (continued)

- F. Fontana, **Modelli di previsione deterministici e stocastici: teoria e applicazioni** (Italian), *Master in Mathematics*.

2018
- G. Savio, **La dinamica del replicatore e le equazioni di Lotka-Volterra** (Italian), *Master in Mathematics*.

2020
- R. Onzo, **Modelli di struttura per le stelle di sequenza principale** (Italian), *Master in Mathematics*.
- M. Montefusco, **Mathematical models of vegetation dynamics** (English), *Master in Mathematics*.
- S. Barba, **Modelli matematici per la dinamica virale** (Italian), *Master in Mathematics*.

2021
- G. D'Abundo, **Modelli idrodinamici per la meteorologia** (Italian), *Master in Mathematics*.

2022
- Martina Ianniello, **Elastostatica e propagazione ondosa in elasticita' lineare** (Italian), *Master in Mathematics*.

2023
- Stefano Pastore, **Phase Transition in Continuum Mechanics: Theory and Engineering Applications** (English), *Master in Mathematical Engineerings*.

Bachelor Students Supervised

2011
- C. Battagliese, **Modelli epidemiologici e applicazioni con Mathematica** (Italian), *Bachelor in Mathematics*.

2014
- F. Alessio, **Modelli epidemiologici SIR, SIS e SI: teoria ed applicazioni** (Italian), *Bachelor in Physics*.

2016
- R. Esposito, **Moti piani di un fluido perfetto** (Italian), *Bachelor in Mathematics*.

2017
- F. Di Napoli, **Modello matematico per laghi eutrofizzati ottenuto da leggi integrali di bilancio** (Italian), *Bachelor in Physics*.

2018
- L. Scala, **Propagazione ondosa in continui elastici lineari** (Italian), *Bachelor in Physics*.

2019
- A. Schiano di Colella, **Sulle formulazioni geometriche della meccanica classica** (Italian), *Bachelor in Physics*.
- V. Busillo, **Equazioni dell'idrodinamica per stelle di sequenza principale** (Italian), *Bachelor in Physics*.

Research Publications

Journal Articles

1. Marasco, A., Lupascu, C., & Tribuzi, C. (2025). STSimM: A new tool for evaluating neuron model performance and detecting spike trains similarity. *Journal of Neuroscience Methods*, *415*, 110324. https://doi.org/https://doi.org/10.1016/j.jneumeth.2024.110324

2. Dura-Bernal, S., Herrera, B., Lupascu, C., Marsh, B. M., Gandolfi, D., Marasco, A., Neymotin, S., Romani, A., Solinas, S., Bazhenov, M., Hay, E., Migliore, M., Reinmann, M., & Arkhipov, A. (2024). Large-scale mechanistic models of brain circuits with biophysically and morphologically detailed neurons. *J. Neurosci.*, *44*(40), e1236242024. https://doi.org/10.1523/JNEUROSCI.1236-24.2024

3. Marasco, A., Tribuzi, C., Iuorio, A., & Migliore, M. (2024). Mathematical generation of data-driven hippocampal CA1 pyramidal neurons and interneurons copies via A-GLIF models for large-scale networks covering the experimental variability range. *MATHEMATICAL BIOSCIENCES*, *371*, 109179. https://doi.org/https://doi.org/10.1016/j.mbs.2024.109179

4. Marasco, A., Tribuzi, C., Lupascu, C., & Migliore, M. (2024). Modeling realistic synaptic inputs of CA1 hippocampal pyramidal neurons and interneurons via Adaptive Generalized Leaky Integrate-and-Fire models. *MATHEMATICAL BIOSCIENCES*, *372*, 109192. https://doi.org/https://doi.org/10.1016/j.mbs.2024.109192

5. Marasco, A., Romano, A., & Sotis, C. (2023). Interactions between concerns for the environment and other sources of concern in 31 european countries. *ENVIRONMENTAL RESEARCH LETTERS*, *18*(1), 014018. https://doi.org/10.1088/1748-9326/aca6fd

6. Marasco, A., Spera, E., De Falco, V., Iuorio, A., Lupascu, C. A., Solinas, S., & Migliore, M. (2023). An adaptive generalized leaky integrate-and-fire model for hippocampal CA1 pyramidal neurons and interneurons. *BULLETIN OF MATHEMATICAL BIOLOGY*, *85 (109)*. https://doi.org/10.1007/s11538-023-01206-8

7. Marasco, A., Giannino, F., & Iuorio, A. (2020). Modelling competitive interactions and plant–soil feedback in vegetation dynamics. *RICERCHE DI MATEMATICA*, *69*, 553–577. https://doi.org/10.1007/s11587-020-00497-6

8. Marasco, A., & Romano, A. (2020). A critical overview of stationary solar models based on polytropic gases. *INTERNATIONAL JOURNAL OF GEOMETRIC METHODS IN MODERN PHYSICS*, *17*, 2050084-1–2050084-11. https://doi.org/10.1142/S021988782050084X

9. Marasco, A., & Romano, A. (2019). An analytical solution of stationary hydrodynamic equations of a main-sequence star. *INTERNATIONAL JOURNAL OF GEOMETRIC METHODS IN MODERN PHYSICS*, *16*, 1950120-1–1950120-21. https://doi.org/10.1142/S0219887819501202

10. Dominioni, G., Marasco, A., & Romano, A. (2018). A mathematical approach to study and forecast racial groups interactions: Deterministic modeling and scenario method. *QUALITY & QUANTITY*. https://doi.org/10.1007/s11135-017-0581-9

11. Marasco, A., & Romano, A. (2018). Inter-port interactions in the le Havre-Hamburg range: A scenario analysis using a nonautonomous Lotka-Volterra model. *JOURNAL OF TRANSPORT GEOGRAPHY*, *69*, 207–220. https://doi.org/10.1016/j.jtrangeo.2018.04.018

12. Marasco, A., Ferrara, L., & Romano, A. (2017). Modeling eutrophic lakes: From mass balance laws to ordinary differential equations. *INTERNATIONAL JOURNAL OF GEOMETRIC METHODS IN MODERN PHYSICS*, *14*, 1750151-1–1750151-46. https://doi.org/10.1142/S0219887817501511

13. Marasco, A., & Romano, A. (2017). Deterministic modeling in scenario forecasting: Estimating the effects of two public policies on intergenerational conflict. *QUALITY & QUANTITY*, 1–27. https://doi.org/10.1007/s11135-017-0670-9

14. Cavarretta, F., Marasco, A., Hines, M. L., Shepherd, G. M., & Migliore, M. (2016). Glomerular and mitral-granule cell microcircuits coordinate temporal and spatial information processing in the olfactory bulb. *FRONTIERS IN COMPUTATIONAL NEUROSCIENCE*, *10*. https://doi.org/10.3389/fncom.2016.00067

15. Marasco, A., Picucci, A., & Romano, A. (2016a). Determining firms' utility functions and competitive roles from data on market shares using Lotka-Volterra models. *DATA IN BRIEF*, *7*, 709–713. https://doi.org/10.1016/j.dib.2016.03.020

16. Marasco, A., De Paris, A., & Migliore, M. (2016c). Predicting the response of olfactory sensory neurons to odor mixtures from single odor response. *SCIENTIFIC REPORTS*, *6*. https://doi.org/10.1038/srep24091

17. Marasco, A., Nocerino, S., Pinto, G., Pollio, A., Trojsi, G., & De Natale, A. (2016). Weathering of a roman mosaic-a biological and quantitative study on in vitro colonization of calcareous tesserae by phototrophic microorganisms. *PLOS ONE*, *11*. https://doi.org/10.1371/journal.pone.0164487

18 Marasco, A., Picucci, A., & Romano, A. (2016b). Market share dynamics using Lotka-Volterra models. *TECHNOLOGICAL FORECASTING AND SOCIAL CHANGE*, *105*, 49–62. https://doi.org/10.1016/j.techfore.2016.01.017

19 Migliore, M., Cavarretta, F., Marasco, A., Tulumello, E., Hines, M. L., & Shepherd, G. M. (2015). Synaptic clusters function as odor operators in the olfactory bulb. *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*, *112*, 8499–8504. https://doi.org/10.1073/pnas.1502513112

20 Marasco, A., Iuorio, A., Cartenì, F., Bonanomi, G., Tartakovsky, D. M., Mazzoleni, S., & Giannino, F. (2014). Vegetation pattern formation due to interactions between water availability and toxicity in plant-soil feedback. *BULLETIN OF MATHEMATICAL BIOLOGY*, *76*, 2866–2883. https://doi.org/10.1007/s11538-014-0036-6

21 Marasco, A., Iuorio, A., Carteni, F., Bonanomi, G., Giannino, F., & Mazzoleni, S. (2013). Water limitation and negative plant-soil feedback explain vegetation patterns along rainfall gradient. *PROCEDIA ENVIRONMENTAL SCIENCES*, *19*, 139–147. https://doi.org/10.1016/j.proenv.2013.06.016

22 Marasco, A., & Romano, A. (2013). Wavefront in second-order elasticity determined by perturbation method applied to the eikonal equation. *CONTINUUM MECHANICS AND THERMODYNAMICS*, *25*, 229–242. https://doi.org/10.1007/s00161-012-0243-z

23 Marasco, A., Limongiello, A., & Migliore, M. (2013). Using Strahler's analysis to reduce up to 200-fold the run time of realistic neuron models. *SCIENTIFIC REPORTS*, *3*, 1–7. https://doi.org/10.1038/srep02934

24 Bianchi, D., Marasco, A., Limongiello, A., Marchetti, C., Marie, H., Tirozzi, B., & Migliore, M. (2012). On the mechanisms underlying the depolarization block in the spiking dynamics of CA1 pyramidal neurons. *JOURNAL OF COMPUTATIONAL NEUROSCIENCE*, *33*, 207–225. https://doi.org/10.1007/s10827-012-0383-y

25 Cartení, F., Marasco, A., Bonanomi, G., Mazzoleni, S., Rietkerk, M., & Giannino, F. (2012). Negative plant soil feedback explaining ring formation in clonal plants. *JOURNAL OF THEORETICAL BIOLOGY*, *313*, 153–161. https://doi.org/10.1016/j.jtbi.2012.08.008

26 Di Costanzo, E., & Marasco, A. (2012). Approximate analytic solution of Dirichlet's problems for Laplace's equation in planar domains by a perturbation method. *COMPUTERS & MATHEMATICS WITH APPLICATIONS*, *63*, 60–67. https://doi.org/10.1016/j.camwa.2011.10.072

27 Marasco, A., Limongiello, A., & Migliore, M. (2012). Fast and accurate low-dimensional reduction of biophysically accurate neuron models. *SCIENTIFIC REPORTS*, *2*, 1–7. https://doi.org/10.1038/srep00928

28 Marasco, A., & Romano, A. (2011). A mathematical model for the management of a service center. *MATHEMATICAL AND COMPUTER MODELLING*, *53*, 2005–2014. https://doi.org/10.1016/j.mcm.2011.01.032

29 Marasco, A. (2010). Second-order effects on the wave propagation in finite elasticity. *COMMUNICATIONS IN APPLIED AND INDUSTRIAL MATHEMATICS*, *1*, 148–166. https://doi.org/10.1685/2010CAIM489

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Last update: April, 2025