



Silvia Frassu

Personal Information

Name **Silvia Frassu.**
Surname
Nationality **Italian.**
Date of birth **04/11/1989.**
Place of birth **Cagliari, Italy.**
Gender **Female.**
E-mail **silvia.frassu@unica.it, silvia.frassu@gmail.com.**
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Website **[https://web.unica.it/unica/page/it/silvia_frassu.](https://web.unica.it/unica/page/it/silvia_frassu)**

Academic Position

01/10/2025– **Tenure Track Researcher (RTT).**
ongoing GSD: 01/MATH-03, SSD: MATH-03/A - Mathematical Analysis.
Affiliation: Department of Mathematics and Computer Science, University of Cagliari (Italy).

03/03/2025– **Research Fellow.**
30/09/2025 Research Fellowship Title: Theoretical analysis on certain partial derivative equations related to biomathematics.
Research project: FIATLUCS - 'Fostering Inclusion and Accessibility for Local Urban Transfers in Cagliari and Suburbs', as part of the pursuit of the objectives of the RAISE Innovation Ecosystem Research Program funded by the European Union - Next Generation EU on PNRR MUR funds - M4C2 -Investment 1.5, with specific reference to the activities envisaged within SPOKE 1 'Accessible and Inclusive Urban Environments and Services'.
GSD: 01/INFO-01, SSD: INFO-01/A.
Affiliation: Department of Mathematics and Computer Science, University of Cagliari (Italy).
Principal Investigator: Dr. Gianmarco Cherchi.

01/03/2022– **Assistant Professor (Tenure Track).**
28/02/2025 GSD: 01/MATH-03, SSD: MATH-03/A - Mathematical Analysis.
Affiliation: Department of Mathematics and Computer Science, University of Cagliari (Italy).

09/04/2021– **Research Fellow.**
28/02/2022 Title of research grant: Qualitative properties of differential problem solutions from biomathematics.
Research project: Evolutive and stationary Partial Differential Equations with a focus on biomathematics (Fondazione di Sardegna 2019).
GSD: 01/MATH-03, SSD: MATH-03/A - Mathematical Analysis.
Affiliation: Department of Mathematics and Computer Science, University of Cagliari (Italy).
Principal Investigator: Prof. Giuseppe Vigliani.

04/01/2021– **Research Fellow.**
04/04/2021 Research Fellowship Title: Theoretical analysis on certain partial derivative equations related to biomathematics.
Research project: Evolutive and stationary Partial Differential Equations with a focus on biomathematics (Fondazione di Sardegna 2019).
GSD: 01/MATH-03, SSD: MATH-03/A - Mathematical Analysis.
Affiliation: Department of Mathematics and Computer Science, University of Cagliari (Italy).
Principal Investigator: Prof. Giuseppe Vigliani.

Institutional Assignments

18/09/2024– **Member of the Regulation Committee of the Department of Mathematics**
28/02/2025 **and Computer Science, University of Cagliari..**

01/07/2024– **Member of the Board of the Department of Mathematics and Computer**
28/02/2025 **Science, University of Cagliari..**

01/07/2024– **Member of the Faculty Council of Engineering and Architecture, University**
28/02/2025 **of Cagliari..**

Education

Educational qualifications

26/02/2021 **PhD in Mathematics and Computer Science (33rd cycle),** *University of Cagliari, Italy.* PhD with a three-year fellowship (2017-2020).
Thesis title: Dirichlet problems for several nonlocal operators via variational and topological methods (SSD MATH-03/A - Mathematical Analysis).
Supervisor: Prof. Antonio Iannizzotto.
Vote: laude.

05/10/2015 **Master Degree in Mathematics,** *University of Cagliari, Italy.*
Thesis title: Rearrangements and inequalities.
Supervisor: Dr. Claudia Anedda.
Vote: 110/110 cum laude.

27/04/2012 **Bachelor Degree in Mathematics,** *University of Cagliari, Italy.*
Thesis title: Solutions in series of ordinary differential equations.
Supervisor: Dr. Claudia Anedda.
Vote: 108/110.

01/07/2008 **Classical High School Diploma,** *State High School G. Siotto Pintor, Cagliari.*
Vote: 100/100.

Experience abroad

- 23/06/2024–27/06/2024 **Departamento de Matemáticas, Universidad de Cádiz, Cádiz, (Spain).**
Winner of the mobility fellowship **Erasmus+ Staff Mobility for Teaching Assignment (MOSTA)** from University of Cagliari.
Contact person: Prof. María Victoria Redondo Neble.
- 24/09/2023–28/09/2023 **Departamento de Matemáticas, Universidad de Cádiz, Cádiz, (Spain).**
Winner of the mobility fellowship **Erasmus+ Staff Mobility for Teaching Assignment (MOSTA)** from University of Cagliari.
Contact person: Prof. María Victoria Redondo Neble.
- 01/03/2020–14/03/2020 **The Graduate Center of CUNY, New York, (USA).**
Collaboration with Prof. Marcello Lucia on the maximum strong principle for non-local operators, initially planned to last two months (01/03/2020-01/05/2020), but discontinued due to the Covid-19 pandemic.
- 20/09/2018–20/12/2018 **Departamento de Matematica, Universidade de Aveiro, Aveiro, (Portugal).**
Winner of the mobility fellowship **Erasmus+ Placedoc** from University of Cagliari of three months duration for a.y. 2017/2018.
Collaboration with Prof. Vasile Staicu and Prof. Eugenio Rocha on pseudo-differential inclusions driven by non-local operators.

Participation in summer schools and PhD courses

- 2019 **Summer School in Mathematical Analysis**, Cagliari (Italia), June 3–14, 2019.
- 2018 **Advanced Topics in Analysis and Optimization (Prof. Vasile Staicu)**, Aveiro (Portugal), 2018.
- 2018 **Calculus of variations, isoperimetric inequalities, and eigenvalue problems (Prof. Marcello Lucia)**, Cagliari (Italy), 2018.
- 2018 **An introduction to Mathematical Theory of Control (Prof. Vasile Staicu)**, Cagliari (Italy), 2018.
- 2018 **Training course anthro-psycho-pedagogical disciplines and teaching methodologies and technologies (24 CFU)**, Cagliari (Italy), 2018.
- 2017 **Summer Course (SMI)**, Perugia (Italy), August 2017.

Language skills

- Italian **Mother tongue**
- English **Level B2 (Certified by the University Language Center on 30/07/2018)**

Computer skills

Microsoft Windows, Microsoft Office, LaTeX

Scientific activity

Research interests

- Qualitative analysis of problems related to various partial differential equations, both evolution and stationary;
- Existence and multiplicity of solutions of nonlinear Dirichlet problems and pseudo-differential inclusions driven by nonlocal operators, optimization results, and symmetry for such operators;

- Existence and uniqueness of solutions of the Keller-Segel model. Blow-up for solutions of such models.

Scientific Communications

- 2024 **The 14th AIMS Conference on Dynamical Systems, Differential Equations and Applications**, Abu Dhabi, December 16–20, 2024.
Special Session SS1: Analysis of parabolic models for chemotaxis. Properties of given and detected unbounded solutions to a class of chemotaxis models.
- 2024 **The 14th AIMS Conference on Dynamical Systems, Differential Equations and Applications**, Abu Dhabi, December 16–20, 2024.
Special Session SS95: Nonlinear analysis and elliptic boundary value problems. Dissipation through combinations of nonlocal and gradient nonlinearities in chemotaxis models.
- 2024 **Seminar in the framework of the cyclo Maln Colloquium**, Cagliari, March 19, 2024.
Basic concepts on chemotaxis models from biomathematics.
- 2024 **The 7th International Workshop on Mathematical Analysis of Chemotaxis (iWMAC 7)**, Kyoto (Japan), March 4–8, 2024.
Boundedness through nonlocal dampening effects in a fully parabolic chemotaxis model with sub and superquadratic growth.
- 2023 **The 13th AIMS Conference on Dynamical Systems, Differential Equations and Applications**, Wilmington (USA), May 31–June 4, 2023.
Special Session 56: Variational methods for nonlinear PDEs. On a class of indirect and direct chemotaxis-consumption models in high dimensions.
- 2023 **The 13th AIMS Conference on Dynamical Systems, Differential Equations and Applications**, Wilmington (USA), May 31–June 4, 2023.
Special Session 34: Variational, Topological and Set-Valued Methods for Nonlinear Differential Problems. Nonlinear Dirichlet problem for the fractional p -Laplacian with jumping reactions.
- 2023 **Day of mathematical discussions, In honor of the 70th birthday of colleague and friend Cornelis Van Der Mee**, Cagliari (Italy), May 12, 2023.
Global and bounded solutions for an attraction-repulsion Keller–Segel model.
- 2023 **The 6th International Workshop on Mathematical Analysis of Chemotaxis (iWMAC 6)**, Hannover (Germany), February 13–17, 2023.
Boundedness criteria for a class of indirect (and direct) chemotaxis-consumption models in high dimensions.
- 2022 **Seminar in the framework of the research project Fondazione di Sardegna 2021 Analysis of Partial Differential Equations in connection with real phenomena**, Cagliari, November 16, 2022.
Chemorepellent vs chemoattractant: which of these productions supplies higher smoothing effects ?
- 2022 **Variational methods and evolution equations (second edition)**, online, September 1–2, 2022.
Five solutions for the fractional p -Laplacian with noncoercive energy.
- 2022 **XXVII Congress of Differential Equations and Applications - XVI Congress of Applied Mathematics (CEDYA CMA)**, Zaragoza (Spain), July 18–22, 2022.
Criteria towards boundedness for attraction–repulsion Keller–Segel systems.

- 2022 **100 Years Unione Matematica Italiana - 800 years Università di Padova**, Padova (Italy), May 23–27, 2022.
Multiple constant sign and nodal solutions for the fractional p -Laplacian.
- 2022 **Seminar organized by Grupo de Análise Funcional e Aplicações**, Universidade de Aveiro (Portugal), Online, April 21, 2022.
Multiple solutions for the fractional p -Laplacian with jumping reactions.
- 2022 **The 2nd International Workshop on Mathematical Analysis of Chemotaxis mini (iWMAC mini 2)**, Tokyo (Japan), Online, March 7–9, 2022.
Boundedness in a nonlinear attraction-repulsion Keller–Segel system with production and consumption.
- 2021 **Seminar in the framework of the Programa de Doctorado en Matemáticas (UCA)**, Cádiz (Spain), November 19, 2021.
On two attraction-repulsion chemotaxis models from mathematical biology.
- 2019 **VI Weekend on Variational Methods and Differential Equations**, Catania (Italy), December 13–14, 2019.
Extremal constant sign solutions and nodal solutions for the fractional p -Laplacian.
- 2019 **Partial Differential Equations in Analysis and Mathematical Physics**, Santa Margherita di Pula (Italy), May 30–June 1, 2019.
Fractional weighted eigenvalue problems: monotonicity and optimization (poster)
- 2018 **Nonlinear Analysis and PDEs in Caserta**, Caserta (Italy), September 10–14, 2018.
Weighted eigenvalue problems for L_K : monotonicity and u.c.p (poster).
- 2018 **Bicocca-Urbino Days in Nonlinear Analysis**, Milan (Italy), May 24–25, 2018.
Nonlinear Dirichlet problem for the nonlocal anisotropic operator L_K .
- 2017 **Seminars in Mathematics**, Cagliari (Italy), December 14, 2017.
Nonlinear Dirichlet problem for the nonlocal anisotropic operator L_K .
- [Organization of conferences](#)
- 2022 **IV Workshop on Trends in Nonlinear Analysis**, Cagliari (Italy), September 13–14, 2022.
- 2024 **Mini-Symposia *Nonlinear PDE's of Stationary and Evolutive Types (MS-21)* in International Conference on Elliptic and Parabolic Problems: GAETA 2024**, Gaeta (Italy), May 20–24, 2024.
- 2024 **V Workshop on Trends in Nonlinear Analysis**, Cagliari (Italy), September 9–10, 2024.
- 2025 **The 8th International Workshop on Mathematical Analysis of Chemotaxis (iWMAC 8)**, Cagliari (Italy), May 12–16, 2025.
- [Participation in conferences](#)
- 2024 **Models in the life sciences**, Cagliari (Italy), September 23–24, 2024.
- 2024 **III Workshop on Differential Equations and Applications on the occasion of 60^{circ} birthday of professors Gabriele Bonanno and Salvatore Angelo Marano**, Roccalumera (Sicily), July 4–5, 2024.

- 2019 **Workshop - Summer School - VIII Partial differential equations, optimal design and numerics**, Centro de Ciencias de Benasque Pedro Pascual (Spain), August 19–29, 2019.
- 2018 **9th Annual Workshop Functional Analysis and Applications Group**, Aveiro (Portugal), October 24, 2018.
- 2018 **International Workshop on Analysis and Numerical Approximation of Singular Problems**, Cagliari (Italy), September 4–6, 2018.
- 2018 **Two nonlinear days in Urbino 2018**, Urbino (Italy), July 12–13, 2018.
- 2017 **III Workshop on Trends in Nonlinear Analysis**, Cagliari (Italy), September 7–9, 2017.

Projects and Research Groups

- 2017-ongoing **Member of the research group Mathematical Analysis of the Department of Mathematics and Computer Science, University of Cagliari**, as PhD student from 2017 to 2020, as fellow from 04/01/2021 to 04/04/2021, as research fellow from 09/04/2021 to 28/02/2022, as assistant professor (tenure track) from 01/03/2022 to 28/02/2025, as fellow from 03/03/2025 to 30/09/2025 and as tenure track researcher from 01/10/2025 (ongoing).
https://web.unica.it/unica/it/mathematical_analysis.page
- 2017 **Project Fondazione di Sardegna 2017**.
Research project: Integro-differential Equations and Non-local Problems.
Principal Investigator: Prof. Antonio Iannizzotto.
Role: Participant.
- 2018-2019, 2021-ongoing **GNAMPA**.
National Group for Mathematical Analysis, Probability and their Applications
Role: affiliate.
- 2019 **Project Fondazione di Sardegna 2019**.
Research project: Evolutive and stationary Partial Differential Equations with a focus on biomathematics.
Principal Investigator: Prof. Giuseppe Viglialoro.
Role: Participant first as fellow and later as research fellow.
- 2021 **Project Fondazione di Sardegna 2021**.
Research project: Analysis of Partial Differential Equations in connection with real phenomena.
Principal Investigator: Prof. Antonio Greco.
Role: Participant.
- 2021-ongoing **Prin 2022 Nonlinear differential problems with applications to real phenomena (Grant Number: 2022ZXZTN2)**.
MIUR (Ministry of University and Research).
Head of Cagliari local unit: Prof. Giuseppe Viglialoro.
Role: Participant.
- 2024 **GNAMPA Research projects 2024**.
Research project: Stationary and evolution nonlinear problems.
Principal Investigator: Prof. Antonio Iannizzotto.
Role: Participant.

2024 - 2025 **Project FIATLUCS - Fostering Inclusion and Accessibility for Local Urban Transfers in Cagliari and Suburbs.**

Innovation Ecosystem PNRR (RAISE Liguria, Spoke 1).

Principal Investigator: Dr. Gianmarco Cherchi.

Role: Participant.

[Contributions to conferences](#)

2024 **GNAMPA contribution 2024.**

[Referral activities](#)

Acta Applicandae Mathematicae.

AIMS Mathematics.

AppliedMath.

Applied Mathematics in Science and Engineering.

Applied Mathematics Letters.

Annales Academiae Scientiarum Fennicae Mathematica.

Axioms.

Discrete and Continuous Dynamical Systems Series S.

Electronic Journal of Qualitative Theory of Differential Equations.

Electronic Research Archive.

Evolution Equations and Control Theory.

Funkcialaj Ekvacioj.

Journal of Nonlinear Mathematical Physics.

Journal of Mathematical Analysis and Applications.

Journal of Elliptic and Parabolic Equations.

Le Matematiche.

Mathematics.

Mathematical Biosciences and Engineering.

Mathematical and Computer Modelling of Dynamical Systems.

Mathematical Methods in the Applied Sciences.

Nonlinear Analysis: Real World Applications.

Quaestiones Mathematicae.

Ricerche di Matematica.

Studies in Applied Mathematics.

Taiwanese Journal of Mathematics.

Teaching experience

2025–2026 **Lecturer, 80 hours, 8 CFU.**

Mathematical Analysis II for the Course of Study in Biomedical Engineering, University of Cagliari (Italy). SSD: MATH-03/A - Mathematical Analysis.

23/05/2025– **Subject matter expert.**

ongoing Mathematical Analysis II, University of Cagliari (Italy). SSD: MATH-03/A - Mathematical Analysis.

- 2024–2025 **Teaching tutor, 40 hours.**
Mathematical Analysis 3 for the Course of Study in Mathematics, University of Cagliari (Italy). SSD: MATH-03/A - Mathematical Analysis.
- 2024–2025 **Lecturer, 80 hours, 8 CFU.**
Mathematical Analysis II for the Course of Study in Biomedical Engineering, University of Cagliari (Italy). SSD: MATH-03/A - Mathematical Analysis.
- 16/09/2024–
30/09/2024 **Lecturer, 33 hours.**
Mathematics, Realignment course intended for students with incoming educational debts a.y. 2024–2025, University of Cagliari (Italy).
- 23/06/2024–
27/06/2024 **Lecturer, 4 hours.**
Nonlinear reaction-diffusion problems with nonlocal terms arising in biomathematics, course on partial derivative equations from biomathematics addressed to doctoral students and young researchers at the Departamento de Matemáticas, Universidad de Cádiz, (Spain).
- 2023–2024 **Lecturer, 80 hours, 8 CFU.**
Mathematical Analysis II for the Course of Study in Biomedical Engineering, University of Cagliari (Italy). SSD: MATH-03/A - Mathematical Analysis.
- 24/09/2023–
28/09/2023 **Lecturer, 4 hours.**
Nonlinear reaction-diffusion problems arising in biomathematics, course on partial derivative equations from biomathematics addressed to doctoral students and young researchers at the Departamento de Matemáticas, Universidad de Cádiz, (Spain).
- 2022–2023 **Lecturer, 80 hours, 8 CFU.**
Mathematical Analysis II for the Course of Study in Biomedical Engineering, University of Cagliari (Italy). SSD: MATH-03/A - Mathematical Analysis.
- 2021–2022 **Contract Lecturer, 80 hours, 8 CFU.**
Mathematical Analysis II for the Course of Study in Biomedical Engineering, University of Cagliari (Italy). SSD: MATH-03/A - Mathematical Analysis.
- 2017–2018 **Contract Lecturer, 30 hours.**
Mathematics, Realignment course for the Course of Study in Biology, University of Cagliari (Italy).
- 2021–2022 **Teaching tutor, 32 hours.**
Mathematical Analysis 3 for the Course of Study in Mathematics, University of Cagliari (Italy). SSD: MATH-03/A - Mathematical Analysis.
- 2020–2021 **Teaching Tutor, 40 hours.**
Mathematical Analysis I for Courses in Environmental and Land Use Engineering, Civil Engineering, Chemical Engineering, University of Cagliari (Italy). SSD: MATH-03/A - Mathematical Analysis.
- 2020–2021 **Teaching tutor, 20 hours.**
Mathematical Analysis II for the Course of Study in Physics, University of Cagliari (Italy). SSD: MATH-03/A - Mathematical Analysis.
- 2019–2020 **Teaching tutor, 20 hours.**
Mathematical Analysis II for the Course of Study in Physics, University of Cagliari (Italy). SSD: MATH-03/A - Mathematical Analysis.
- 2018–2019 **Teaching tutor, 20 hours.**
Mathematics 2 for the Course of Study in Chemistry, University of Cagliari (Italy). SSD: MATH-04/A - Mathematical Physics.

- 2016–2017 **Teaching Tutor**, 30 hours.
Mathematical Analysis II for the Course of Study in Electrical and Electronic Engineering, University of Cagliari (Italy). SSD: MATH-03/A - Mathematical Analysis.
- 2016–2017 **Teaching tutor**, 30 hours.
Mathematical Analysis II for the Course of Study in Mechanical Engineering, Chemical Engineering, University of Cagliari (Italy). SSD: MATH-03/A - Mathematical Analysis.
- 2016–2017 **Teaching tutor**, 40 hours.
Laboratory of Mathematics for the Department of Mathematics and Computer Science, University of Cagliari (Italy).
- 2016–2017 **Teaching tutor**, 40 hours.
Realignment for the Course of Study in Mathematics, University of Cagliari (Italy).
- 2016–2017 **Teaching tutor**, 25 hours.
Mathematics and Statistics for the Course of Study in Biology, University of Cagliari (Italy). SSD: MATH-04/A - Mathematical Physics.
- 2015–2016 **Teaching Tutor**, 30 hours.
Mathematical Analysis II for the Course of Study in Electrical and Electronic Engineering, University of Cagliari (Italy). SSD: MATH-03/A - Mathematical Analysis.
- 2015–2016 **Teaching tutor**, 30 hours.
Mathematical Analysis II for the Course of Study in Mechanical Engineering, Chemical Engineering, University of Cagliari (Italy). SSD: MATH-03/A - Mathematical Analysis.

PhD Students

- 2023 – **Cosupervisor**, PhD student: Dr. Filippo Cassanello.
ongoing PhD in Mathematics and Computer Science, 39th cycle, University of Cagliari (Italy). Supervisor: Prof. Antonio Iannizzotto. SSD MATH-03/A - Mathematical Analysis.

Degree committees, fellowships and scholarships

- 2024 **Scholarship committee (INdAM 2024)**.
Competition for 30 scholarships for enrollment in mathematics degree programs a.y. 2023-24. University of Cagliari.
- 2022 **Degree committee**.
Bachelor's Degree in Biomedical Engineering seat on 25/11/2022, University of Cagliari, Role: Full member.
- 2022 **Degree committee**.
Bachelor's Degree in Biomedical Engineering seat on 30/09/2022, University of Cagliari, Role: Full member.
- 2022 **Research fellowships committee**.
Selection for n 1 research fellowship, D.D. n 251/2022, title *Scalable exploration of complex objects and environments beyond simple visual replication*, Principal Investigator: Dr. Gianmarco Cherchi, Funding: research project TDM - Tessuto Digitale Metropolitan, Role: Expert component.

Publications

Number of papers published: 25

Number of papers submitted for publication: 1

Papers

- [1] S. Frassu

- Nonlinear Dirichlet problem for the nonlocal anisotropic operator L_K .*
 Communications on Pure and Applied Analysis **18**: 1847–1867, 2019.
 doi:10.3934/cpaa.2019086
- [2] S. Frassu, E.M. Rocha, V. Staicu
Three nontrivial solutions for nonlocal anisotropic inclusions under nonresonance.
 Electronic Journal of Differential Equations **2019**: 1–16, Paper No. 75, 2019.
- [3] S. Frassu, A. Iannizzotto
Strict monotonicity and unique continuation for general non-local eigenvalue problems.
 Taiwanese Journal of Mathematics **24**: 681–694, 2020. doi:10.11650/tjm/190709
- [4] S. Frassu, A. Iannizzotto
Existence and multiplicity of positive solutions for the fractional Laplacian under subcritical or critical growth.
 Complex Variables and Elliptic Equations **66**: 1642–1663, 2020.
 doi:10.1080/17476933.2020.1772766
- [5] C. Anedda, F. Cuccu, S. Frassu
Steiner symmetry in the minimization of the first eigenvalue of a fractional eigenvalue problem with indefinite weight.
 Canadian Journal of Mathematics **73**: 970–992, 2021.
 doi:10.4153/S0008414X20000267
- [6] S. Frassu, A. Iannizzotto
Extremal constant sign solutions and nodal solutions for the fractional p -Laplacian.
 Journal of Mathematical Analysis and Application **501**, Paper No. 124205, 2021.
 doi:10.1016/j.jmaa.2020.124205
- [7] S. Frassu, G. Viglialoro
Boundedness for a fully parabolic Keller-Segel model with sublinear segregation and superlinear aggregation.
 Acta Applicandae Mathematicae **171**, Paper No. 19, 2021. doi:10.1007/s10440-021-00386-6
- [8] S. Frassu, G. Viglialoro
Boundedness in a chemotaxis system with consumed chemoattractant and produced chemorepellent.
 Nonlinear Analysis, Theory, Methods and Applications **213**, Paper No. 112505, 2021. doi:10.1016/j.na.2021.112505
- [9] S. Frassu, C. Van der Mee, G. Viglialoro
Boundedness in a nonlinear attraction-repulsion Keller-Segel system with production and consumption.
 Journal of Mathematical Analysis and Applications **504**, Paper No. 125428, 2021.
 doi:10.1016/j.jmaa.2021.125428
- [10] S. Frassu

Dirichlet problems for several nonlocal operators via variational and topological methods.

PhD Thesis, 2021.

https://iris.unica.it/handle/11584/309589?mode=simple.1236#.YZ_EIC9aZQI

- [11] S. Frassu, E.M. Rocha, V. Staicu
The Obstacle Problem at Zero for the fractional p -Laplacian.
Set-Valued and Variational Analysis **30**: 207–231, 2022. doi:10.1007/s11228-020-00562-0
- [12] S. Frassu, T. Li, G. Viglialoro
Improvements and generalizations of results concerning attraction-repulsion chemotaxis models.
Mathematical Methods in the Applied Sciences, **45**: 11067–11078, 2022. doi:10.1002/mma.8437
- [13] S. Frassu, G. Viglialoro
Boundedness criteria for a class of indirect (and direct) chemotaxis-consumption models in high dimensions.
Applied Mathematics Letters **132**, Paper No. 108108, 2022. doi:10.1016/j.aml.2022.108108
- [14] S. Frassu, A. Iannizzotto
Five solutions for the fractional p -Laplacian with noncoercive energy.
Nonlinear Differential Equations and Applications, **29**, Paper No. 43, 2022. doi:10.1007/s00030-022-00777-0
- [15] S. Frassu, R. Rodríguez Galván, G. Viglialoro
Uniform in time L^∞ -estimates for an attraction-repulsion chemotaxis model with double saturation.
Discrete and Continuous Dynamical Systems - Series B **28**: 1886–1904, 2023. doi:10.3934/dcdsb.2022151
- [16] S. Frassu, A. Iannizzotto
Multiple solutions for the fractional p -Laplacian with jumping reactions.
Journal of Fixed Point Theory and Applications **25**, Paper No. 25, 2023. doi:10.1007/s11784-022-01019-7
- [17] Y. Chiyo, S. Frassu, G. Viglialoro
A nonlinear attraction-repulsion Keller–Segel model with double sublinear absorptions: criteria toward boundedness.
Communications on Pure and Applied Analysis **22**: 1783–1809, 2023. doi.org/10.3934/cpaa.2023047
- [18] S. Frassu, T. Li, G. Viglialoro
Combining effects ensuring boundedness in an attraction-repulsion chemotaxis model with production and consumption.

- Zeitschrift für Angewandte Mathematik und Physik **74**, Paper No. 109, 2023.
doi.org/10.1007/s00033-023-01976-0
- [19] S. Frassu, A. Iannizzotto
Bifurcation-type results for the fractional p -Laplacian with parametric nonlinear reaction.
Mathematics **11**, Paper No. 491, 2023. doi.org/10.3390/math11020491
- [20] A. Columbu, S. Frassu, G. Viglialoro
Properties of given and detected unbounded solutions to a class of chemotaxis models.
Studies in Applied Mathematics **151**: 1349–1379, 2023.
doi.org/10.1111/sapm.12627
- [21] A. Columbu, S. Frassu, G. Viglialoro
Refined criteria toward boundedness in an attraction-repulsion chemotaxis system with nonlinear productions.
Applicable Analysis **103**: 415–431, 2024. doi.org/10.1080/00036811.2023.2187789
- [22] Y. Chiyo, F. G. Düzgün, S. Frassu, G. Viglialoro
Boundedness through nonlocal dampening effects in a fully parabolic chemotaxis model with sub and superquadratic growth.
Applied Mathematics and Optimization **89**, Paper No. 9, 2024.
doi.org/10.1007/s00245-023-10077-3
- [23] A. Columbu, R. Díaz Fuentes, S. Frassu
Uniform-in-time boundedness in a class of local and nonlocal nonlinear attraction-repulsion chemotaxis models with logistics.
Nonlinear Analysis: Real World Applications **79**, 104135, 2024.
doi.org/10.1016/j.nonrwa.2024.104135
- [24] S. Frassu, G. Viglialoro
Addendum to the paper "Refined criteria toward boundedness in an attraction-repulsion chemotaxis system with nonlinear productions".
Discrete and Continuous Dynamical Systems Series S, 2024.
doi:10.3934/dcdss.2024080
- [25] R. Díaz Fuentes, S. Frassu, G. Viglialoro
Dissipation through combinations of nonlocal and gradient nonlinearities in chemotaxis models.
Acta Applicandae Mathematicae **195**, 2025. doi:10.1007/s10440-025-00714-0
- [26] K. Baghaei, S. Frassu, Y. Tanaka, G. Viglialoro
To what extent does the consideration of positive total flux influence the dynamics of Keller Segel-type models?.
Journal of Differential Equations, 2025 (to appear) doi:10.1016/j.jde.2025.113808
- [27] T. Li, S. Frassu, G. Viglialoro

Chemotaxis models with mixed mechanisms: boundedness in growth-dominated regimes.

preprint ArXiv

Silvia Frassu
Cagliari, 01/10/2025