

EUGENIA FRANCO

Institute for Applied Mathematics, University of Bonn

CURRICULUM VITAE

Current position

15.09.22-current Postdoctoral researcher, Hausdorff Center for Mathematics, Bonn, Germany

Previous work experience

05.22- 09.22 Postdoctoral researcher, University of Helsinki, Helsinki, Finland

Scientific education

- 09.17-05.22 PHD IN MATHEMATICS,
University of Helsinki, Department of Mathematics and Statistics
Thesis: Integral and integro-differential equations with measure-valued solutions describing the evolution of structured populations
Supervisors: Prof. M. Gyllenberg, Prof. O. Diekmann, Dr. M. A. Ferreira
Grade: passed with distinction
- 09.14-03.17 M. SC. IN MATHEMATICS,
Università degli studi Trento
Grade: 110/110 cum laude
Thesis: Measures in infinite dimensional spaces
Supervisor: Prof. L. Tubaro
- 09.15 -02.16 ERASMUS
Utrecht University
- 09.11-09.14 B.SC IN MATHEMATICS,
Università degli studi di Trento
Grade: 107/110
Thesis: Le superfici di Hirzebruch
Supervisor: Prof. R. Pignatelli

Publications and preprints

- E. Franco, M. Gyllenberg, O. Diekmann, *One dimensional reduction of a renewal equation for a measure-valued function of time describing population dynamics*, Acta Applicandae Mathematicae, Volume 175, Number 12, 2021
- M. A. Ferreira, E. Franco, J. J. L. Velázquez, *On the self-similar behaviour of coagulation systems with injection*, Annales de l'Institut Henri Poincaré C, Volume 40, Number 4, 2022
- E. Franco, O. Diekmann, M. Gyllenberg, *Modelling physiologically structured populations: renewal equations and partial differential equations*, Journal of Evolution Equations, Volume 23, Number 46, 2023
- I. Cristian, M. A. Ferreira, E. Franco, J. J. L. Velázquez *Long-time asymptotics for coagulation equations with injection that do not have stationary solutions*, Archive for Rational Mechanics and Analysis, Volume 247, Number 103, 2023
- M. A. Ferreira, E. Franco, J. Lukkarinen, A. Nota and J. J. L. Velázquez *Coagulation equations with source leading to anomalous self-similarity*, Journal of Physics A: Mathematical and Theoretical, Volume 56, Number 48, 2023

- E. Franco, B. Kepka and J. J. L. Velázquez, *Description of chemical systems by means of response functions*, submitted, arXiv:2309.02021
- E. Franco, B. Kepka and J. J. L. Velázquez, *Characterizing the detailed balance property by means of measurements in chemical networks*, submitted, arXiv:2402.12935
- E. Franco and J. J. L. Velázquez, *A stochastic version of the Hopfield-Ninio kinetic proofreading model*, submitted, arXiv:2405.10580

Visiting experience

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| 13.11.23-17.11.24 | Visiting research at the University of Coimbra, Portugal. |
| 03.06.19-14.06.19 | Visiting research at the Hausdorff institute during the "Kinetic Theory Trimester Program", Bonn, Germany. |
| 05.05.19-23.05.19 | Visiting research at the Utrecht University, Netherlands. |
| 22.10.18-30.11.18 | Visiting research at the Mittag Leffler institute, Sweden. |

Scholarships

- 2015: Merit prize awarded by the University of Trento.
 2017: Merit prize awarded by the University of Trento.

Teaching experience

- Graduate seminar on PDEs in the Science: Non-local equations modelling physiologically structured populations, University of Bonn, Spring 2023.

Supervision of students

- Supervisor (together with J. J. L. Velázquez, B. Kepka) for the Master thesis of Alexander Braun (expected graduation date: July 2024)
- Supervisor (together with J. J. L. Velázquez, T. Dolmaire) for the Master thesis of Daniel Happ (expected graduation date: September 2024)

Teaching assistance

- Combinatorics (KOMBINATORIIKKA), Spring 2018, undergraduate course (MAT21018) at University of Helsinki, Lecturer: M. Moreno.
- Spatial models in ecology and evolution, Spring 2019, master course at University of Helsinki, Lecturer: E. Kisdi.
- Coagulation dynamics, Spring 2020, master course at University of Helsinki, Lecturer: M. A. Ferreira.
- Operator semigroups with applications in biology, Spring 2020, master course at University of Helsinki, Lecturer: B. Boldin.

Schools

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| 2024 | Attendee at the School "From Cells to Tissues: Models, Analysis and Applications", Lake Como school for Advanced studies 2024. |
| 2022 | Attendee at the School "Trials in Wave Turbulence: from random waves to kinetic equations", L' Aquila 2022. |
| 2019 | Attendee at the School "Scaling limits in Kinetic theory", Lyon 2019. |
| 2018 | Attendee at the "Helsinki Summer School on Mathematical Ecology and Evolution", Helsinki, 2018. |

Conferences and workshops

- 2023 Attendee at the workshop: "Cell Dynamics and Mathematical Modeling", Münster.
- 2023 Poster presentation at the conference: "Particle Systems and PDEs", Lisbon.
- 2023 Conference presentation at the conference: "Bonn Conference on Mathematical Life Sciences", Bonn.
- 2022 Conference presentation at the conference: "Models in Population Dynamics, Ecology and Evolution", Torino.
- 2022 Poster presentation at the Conference: "Probability and Mathematical Physics", Helsinki.
- 2019 Attendee at the workshop: "Qualitative behaviour of kinetic equations and related problems: numerical and theoretical aspects", Bonn
- 2020 Attendee at the workshop: "Mathematics for atmospheric-biospheric science", Himos.
- 2018 Poster presentation at the conference: "European Conference on Mathematical and Theoretical Biology", Lisbon.
- 2018 Conference presentation at the workshop: "Mathematics for atmospheric-biospheric science", Hyytiälä Forestry Field Station.
- 2017 Attendee at the conference: "Mathematics for atmospheric-biospheric science", Levi.
- 2018-2019 Attendee at the following Helsinki Biomathematics days: Biomathematics Day 21, Biomathematics Day 20, Biomathematics Day 19, Biomathematics Day 18.

Talks

- 07.06.24 "A stochastic version of the Hopfield-Ninio kinetic proofreading model", Hausdorff Center for Mathematics, Bonn.
- 17.05.24 "Characterizing the detailed balance property by means of measurements in chemical networks", Hausdorff Center for Mathematics, Bonn.
- 14.03.24 "Coagulation equations with source leading to anomalous self-similarity", Imperial College
- 17.11.23 "Coagulation equations with source leading to anomalous self-similarity", University of Coimbra.
- 13.10.23 "Description of Chemical Systems by means of Response Functions", Hausdorff Center for Mathematics, Bonn.
- 20.04.22 "Renewal equations for measure-valued functions of time describing physiologically structured populations", talk given at the "Bonn Conference on Mathematical Life Sciences", Bonn.
- 09.12.22 "Long-term behavior of the solutions of the coagulation equations with injection that do not have stationary solutions", Hausdorff Center for Mathematics, Bonn.
- 18.05.21 "Self-similar solutions to coagulation equations with a source", University of Helsinki (remotely).
- 30.04.21 "Self-similar solutions to a coagulation equations with source", Hausdorff Center for Mathematics (remotely).
- 22.01.21 "One dimensional reduction of an abstract renewal equation describing population dynamics", University of Helsinki (remotely).
- 09.18 "Coagulation fragmentation models for aerosol dynamics", talk given at the workshop "Mathematics for atmospheric-biospheric science", Finland.
- 21.06.18 "Coagulation fragmentation model for aerosol dynamics", University of Trento.
- 17.10.18 "Coagulation fragmentation model for aerosol dynamics", University of Helsinki.
- 21.02.18 "Reformulating a PDE model for droplet dynamics as a delay equation", University of Helsinki.

Other relevant skills

LANGUAGES	Italian (Mother tongue), English (Fluent), Finnish (Basic), German (A1)
COMPUTER SKILLS	Matlab (Basic knowledge), L ^A T _E X (Intermediate knowledge)
GENERAL COMPETENCE STUDIES	Open science (1 ects), Research Ethics (1 ects), Conference Presentation (2 ects), Working abroad (3 ects)
RESPONSIBILITIES	PhD representative from December 2019 to December 2021 (University of Helsinki)

26.06.2024 Bonn

Enrique Franco