

Curriculum Vitae

ETH Zurich
Department of Mathematics
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Personal Data

Name Stefano Rossi

Place of birth Alatri (Italy)

Current Position

- Sept. 2024 – **Postdoctoral researcher**, *ETH Zürich*, Switzerland
Topics: Kinetic theory, Analysis of PDE. Supervisor: Prof. M. Iacobelli
- Sept. 2023 – **Postdoctoral researcher**, *UZH Zürich*, Switzerland
Aug. 2024 Topics: Analysis of PDE. Supervisor: Prof. K. Widmayer

Education

- Nov. 2019 – **Ph.D. student in Mathematics**, *University of Rome “La Sapienza”*, Italy
Jan. 2023 Thesis title: “Asymptotic and validity problems for Vlasov-type equations”
Advisors: Prof. D. Benedetto and Prof. E. Caglioti
Defense: 3rd May 2023. **Grade:** Excellent (Ottimo)
- July 2019 **Master degree in Mathematics**, *University of Rome “La Sapienza”*, Italy
Thesis title: “Metodo di scattering per il Landau Damping” (Scattering approach to the Landau damping)
Supervisors: Prof. D. Benedetto and Prof. E. Caglioti
Final mark: 110/110 *cum laude*
- July 2016 **Bachelor degree in Mathematics**, *University of Rome “La Sapienza”*, Italy
Thesis title: “Dinamica di sistemi di infinite particelle in una dimensione” (Dynamics of infinitely many particle systems in 1d)
Supervisor: Prof. P. Buttà
Final mark: 110/110 *cum laude*
- July 2014 **Diploma in Classical Guitar**, *Conservatoire of music “Licinio Refice”*, Frosinone (Italy). Final mark: 10/10

Publications and preprints

10. A. Gagnebin, M. Iacobelli, A. Rege, S. Rossi, **From relativistic Vlasov-Maxwell to electron-MHD in the quasineutral regime**, arXiv:2505.11428, (2025).
9. M. Menci, T. Paul, S. Rossi, T. Tenna, **Numerical modeling of flocking dynamics with topological interactions**, arXiv:2503.12980, (2025).
8. T. Paul, S. Rossi, E. Trélat, **Multi-agent systems with multiple-wise interaction: Propagation of chaos and macroscopic limit**, arXiv:2502.09098, (2025).

7. M. Iacobelli, S. Rossi, K. Widmayer, **On the stability of vacuum in the screened Vlasov-Poisson equation**, arXiv:2410.17978, (2024).
6. M. Menci, T. Paul, S. Rossi, **Propagation of chaos for topological models without regularity**, to appear on *EMS Series of Congress Reports*, hal:04855448, (2025).
5. D. Benedetto, E. Caglioti, A. Gagnebin, M. Iacobelli, S. Rossi, **Scattering problem for Vlasov-type equations on the d -dimensional torus with Gevrey data**, *Ann. Inst. H. Poincaré C Anal. Non Linéaire*, published online first, doi 10.4171/AIHPC/159 (2025).
4. D. Benedetto, T. Paul, S. Rossi, **Propagation of chaos and hydrodynamic description for topological models**, *Kinetic and Related models*, Vol. 18, No. 1, 19–34, (2025).
3. P. Degond, M. Pulvirenti, S. Rossi, **Propagation of chaos for topological interactions by a coupling technique**, *Rendiconti Lincei. Matematica e applicazioni*, Vol. 34, No. 3, 641–655, (2023).
2. D. Benedetto, E. Caglioti, S. Rossi, **Comparison between the Cauchy problem and the scattering problem for the Landau damping in the Vlasov HMF equation**, *Asymptotic Analysis*, Vol. 129, No. 2, 215–238, (2022).
1. D. Benedetto, E. Caglioti, S. Rossi, **Mean-field limit for particle-systems with topological interactions**, *Mathematics and Mechanics of Complex Systems*, Vol. 9, No. 4, 423–440, (2021).

Teaching experiences

- Febr. 2024 **Teaching Assistant for “Harmonic Analysis”**, *Universität Zürich UZH*, Zürich
- Sept. 2023 **Teaching Assistant for “Probability II”**, *Universität Zürich UZH*, Zürich
- Oct. 2020 **Tutoring in “Probability”**, *Department of Economics*, LUISS Guido Carli, Rome
- Oct. 2019 **Tutoring in “Analysis I”**, *Department of Civil and Industrial Engineering*, University of Rome “La Sapienza”, Italy

Mentoring activity

- 2025 **Debora Cirulli**, Bachelor student jointly with Prof. M. Iacobelli, ETH Zürich

Other job experiences

- Sept. 2022 **Maths and Physics High School teacher**, *Liceo Scientifico Augusto Righi*, Rome, (currently on leave for research activities)
Winner of the national competition for the role of tenured teacher in high schools.
- March 2019 **Substitute Music Teacher**, *Middle School IC Maria Capozzi*, Rome
- May 2018 **Substitute Guitar Teacher**, *Middle School IC Regina Elena*, Rome

Invitations to talks and seminars

- Oct. 2025 Invited speaker at the workshop “Round meanfield IV: N -body sul Canal Grande”, Venice (Italy).

- June 2025 Invited speaker at the workshop “Dynamics in large dimension: agent systems, biology, social sciences, dynamical systems, PDEs, numerics”, Allumiere (Italy).
- May 2025 Invited talk at the “Applied Analysis, Complex Systems & Dynamics” seminar, Graz (Austria).
- Feb. 2025 Contributed talk at the winter school on Statistical Mechanics, Nonequilibrium Processes and Probability, Sapienza University of Rome (Italy).
- Dec. 2024 Invited short talk at the workshop “Mathematical Physics and PDEs”, Herrsching (Germany).
- Nov. 2024 Invited speaker at the winter school “Arpilysm: Application of mathematics to mathematics”, Arpino (Italy).
- Sept. 2024 Invited speaker at the workshop “Meanlysm: Round meanfield III, new phenomenology”, CNR Rome (Italy).
- July 2024 Invited speaker at the research school “Mathematical Biology: Collective Behavior and Pattern Formation”, CIRM Luminy (France).
- April 2024 Invited speaker at the minisymposium on PDE and Mathematical Physics, ETH Zurich (Switzerland).
- Jan. 2024 Invited speaker at the workshop “Modeling, analysis, and control of multi-agent systems across scales”, CRM de Giorgi Pisa (Italy).
- Nov. 2023 Invited speaker at the winter school “Sound and fury of modeling”, Arpino (Italy).
- Feb. 2023 Invited talk at the LMU Probability seminars, Munich (Germany).
- Sept. 2022 Invited speaker at the workshop “Round meanfield: crowd-opinion-cells”, CNR Rome (Italy).

Visiting periods

- Dec. 2022 Visiting period at FIM Institute for Mathematical Research - ETH Zürich, invited by A. Gagnebin and M. Iacobelli.

Posters and student talks

- Sept. 2022 Talk for “XLV Summer school on Mathematical Physics”, Ravello (Italy). Title: *Landau damping in Vlasov-type equations*.
- July 2022 Poster given during the workshop “When kinetic theory meets fluid mechanics” in Zürich. Title: *Mean-field limit for particle-systems with topological interactions*.
- June 2022 Poster given during “M&MKT22” in Pesaro. Title: *Mean-field limit for particle-systems with topological interactions*.
- May 2022 Talk for “GIM Seminars”(online). Title: *Two examples of mean-field limit for particle systems*.
- June 2021 Talk for “GIM Seminars”(online). Title: *Landau damping in Vlasov-type equations: an exposition of some mathematical results*.
- Sept. 2020 Talk for “XLV Summer school on Mathematical Physics”, Ravello (Italy). Title: *On the equivalence between Lax condition and entropy growth condition*.

Partecipation to conferences and workshops

- June 2025 Conference 60 years of FIM, ETH Zürich (Switzerland)
- Feb. 2025 Winter school on Statistical Mechanics, Nonequilibrium Processes and Probability, Sapienza University of Rome (Italy).
- Sept. 2024 SwissMAP annual general meeting, Les Diablerets (Switzerland).
- July 2024 Current topics in Mathematical Physics, UZH University of Zurich (Switzerland).
- Feb. 2024 Phase mixing, kinetic theory and fluid mechanics, Les Diablerets (Switzerland).
- Jan. 2024 Kinetic and hydrodynamic PDEs, ETH Zürich (Switzerland).
- June 2023 Round Meanfield II, crowd-opinion-cells and more, CNR Rome (Italy).
- Mar. 2023 Scaling limits and generalized hydrodynamics (online), L'Aquila (Italy).
- Dec. 2022 Guerra-80, celebrating the Eightieth Birthday of Francesco Guerra, Rome (Italy).
- Nov. 2022 Boltzmann equation and Irreversibility, Centro Ennio De Giorgi, Pisa (Italy).
- Nov. 2022 CIRM research school on Kinetic Theory, Marseille (France).
- Sept. 2022 CNR workshop "Round meanfield: crowd-opinion-cells", Rome (Italy).
- Sept. 2022 XLVII summer school on mathematical physics, Ravello (Italy).
- July 2022 When kinetic theory meets fluid mechanics, ETH Zürich (Switzerland).
- June 2022 Summer school on methods & models of kinetic theory (M&MKT22), Pesaro (Italy).
- May 2022 Cross fertilization between physics and mathematics, Rome (Italy).
- May 2022 Advances in classical, quantum and statistical mechanics, Rome (Italy).
- Aug. 2021 XX International congress on mathematical physics, Geneva (Switzerland).
- Feb. 2021 CIRM research school "Scaling limits from microscopic to macroscopic physics", (online).
- Sept. 2020 XLV summer school on mathematical physics, Ravello (Italy).
- Nov. 2019 Recent advances in kinetic equations and applications, Indam Rome (Italy).

Projects and research groups

- 2023-24 **Member of the SNSF research project**, *Stable Structures in Fluid Flow and Kinetic Theory*, PI: Klaus Widmayer
- 2022 **Member of the Sapienza research project**, *Scaling limits for microscopic dynamics*, PI: Dario Benedetto
- 2021 **Member of the Sapienza research project**, *Rigorous approaches to the study of collective behaviors*, PI: Elena Agliari
- 2020 **Member of the Sapienza research project**, *Mathematical models and methods for complex systems*, PI: Elena Agliari

Scholarships

- 2017 "Borsa di collaborazione - Biblioteca Guido Castelnuovo" scholarship at University of Roma "La Sapienza".
- 2014-2015 "Percorso d'eccellenza" (excellence courses) for the bachelor degree in Mathematics at University of Roma 'La Sapienza'.

Spoken languages

Italian Native
English Fluent
German Basic

Level: C1 Cambridge FCE

Level: A2

Computer Skills

Languages C/C++, Fortran
Software Matlab, Mathematica
Typography L^AT_EX