Curriculum Vitae

ETH Zurich
Department of Mathematics
Ramistrasse 101, 8092 Zürich
stefano.rossi@math.ethz.ch

Personal Data

Name Stefano Rossi
Date of birth April 7th 1993 Place of birth Alatri (Italy)

Current Position

Sept. 2023 – Aug. 2025 **Postdoctoral researcher**, *joint position between UZH/ETH Zürich*, Switzerland
Topics: Kinetic theory, Analysis of PDE
Supervisors: Prof. M. Iacobelli and Prod. K. Widmayer

Publications and preprints

M. Iacobelli, S. Rossi, K. Widmayer, **On the stability of vacuum in the screened Vlasov-Poisson equation**, arXiv:2410.17978 (2024).

D. Benedetto, E. Caglioti, A. Gagnebin, M. Iacobelli, S. Rossi, **Scattering problem for Vlasov-type equations on the d-dimensional torus with Gevrey data**, arXiv:2405.10182, (2024).

D. Benedetto, T. Paul, S. Rossi, **Propagation of chaos and hydrodynamic description for topological models**, *Kinetic and Related models*, Doi: 10.3934/krm.2024010, (2024).

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).

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).

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).

Education

Nov. 2019 – Jan. 2023 **Ph.D. student in Mathematics**, *University of Rome "La Sapienza"*, Italy
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

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

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

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 speaker at LMU Probability seminars, Munich (Germany). Title: *Mean-field limit and propagation of chaos for particle systems with topological interaction* .

Sept. 2022 Invited speaker at the workshop "Round meanfield: crowd-opinion-cells", CNR Rome (Italy). Title: *Mean-field limit for particle systems with topological interaction*.

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

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, 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 Mother tongue

English Good *Level: C1 Cambridge FCE*

German Basic *Level: A2*

Computer Skills

Languages C/C++, Fortran

Software Matlab, Mathematica

Typography LaTeX