Andrea Tosin

Professor of Mathematical Physics

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Born 22nd September 1980 in Torino, Italy
Languages: Italian (native), English, French

Research statement

My research consists in revisiting classical methods of kinetic theory, such as e.g., Boltzmann-type collisional equations, Fokker-Planck asymptotics, hydrodynamic limits, to investigate emerging mathematical problems in the modelling of interacting multi-agent systems. Applications include vehicular traffic, social dynamics and population dynamics.

Academic appointments

04/2020 – today	Full Professor of Mathematical Physics, Politecnico di Torino, Italy
10/2015 – 03/2020	Associate Professor of Mathematical Physics, Politecnico di Torino, Italy
10/2011 – 10/2015	Permanent Researcher in Applied Mathematics, IAC-CNR, Rome, Italy

Education

2008	PhD in Applied Mathematics, Politecnico di Torino, Italy
2004	MSc in Mathematical Engineering, Politecnico di Torino, Italy
2002	BSc in Mathematics for Engineering Sciences, Politecnico di Torino, Italy

Institutional responsibilities (selected)

11/2023 – today	Coordinator of the PhD Programme in Mathematical Sciences, Politecnico di Torino, Italy
07/2021 – 12/2023	Member of the Committee of the National Scientific Habilitation (ASN) for the Scientific Sector 01/A4 - Mathematical Physics
11/2020 – today	Vice-Coordinator of the PhD Programme in Pure and Applied Mathematics, Politecnico di Torino and University of Turin and INdAM, Italy

Prizes

2017	National Grant for Fundamental Research (FAABR)
2013	SIMAI 2013 prize for young scientists in Applied Mathematics
2011	INdAM-SIMAI 2010 prize for the best Italian PhD theses in Applied Mathematics

Grants (as PI)

2022 – 2025	PRIN 2020 (Research Projects of Relevant National Interest) Project: Integrated Mathematical Approaches to Socio-Epidemiological Dynamics Amount awarded: 464 759 € Funding body: Italian Ministry of University and Research (MUR)
2016 – 2020	Starting Grant "Attracting Excellent Professors" Project: Vehicular and Pedestrian Traffic Models: From Flow Forecast to Safety Management Amount awarded: 100 000 € Funding body: Compagnia di San Paolo, Torino

Invited research visits (selected)

2023	Florida Institute of Technology, Melbourne FL, USA

2017	Imperial College London, UK
2015	Johann Radon Institute for Computational and Applied Mathematics, Linz, Austria
2011	Eindhoven University of Technology, Eindhoven, the Netherlands
2010	Rutgers University, Camden NJ, USA
	Institute of Applied Mathematics and Mechanics, Warsaw, Poland
2007	University of Minnesota, Minneapolis MN, USA

Editorial board roles

2025 – today	Editor of *European Journal of Applied Mathematics* (Cambridge University Press)
2018 – today	Editor of *Mathematics and Computers in Simulation* (Elsevier)
2013 – 2015	Editor of *Modeling and Simulation in Science, Engineering and Technology* (Springer-Birkhäuser Series)
2012 – 2022	Editor of *SEMA-SIMAI Springer Series* (Springer)

Lecturer at international PhD and advanced courses (selected)

2024	SMI Summer School, Perugia, Italy
2021	XLVI Summer School on Mathematical Physics, Ravello, Italy
2018	Lake Como School of Advanced Studies, Como, Italy
2012	CISM – International Centre for Mechanical Sciences, Udine, Italy

Invited academic presentations (selected)

2024	European-Asian Webinar on Kinetic and Fluid Equations for Collective Behavior
2023	21st IMACS World Congress 2023, Rome, Italy (plenary)
2021	Mean-Field Models for Interacting Agents, IMSI, Chicago IL, USA
2019	Hausdorff Research Institute for Mathematics, Bonn, Germany
2017	IperPV2017 – 17th Italian Meeting on Hyperbolic Equations, Pavia, Italy (plenary)
2016	X Forum of Partial Differential Equations, Institute of Mathematics of the Polish Academy of Sciences, Będlewo, Poland
2015	Applied PDEs Seminar, Imperial College London, UK

Peer-review activity (selected)

Reviewer for scientific journals	• Acta Appl. Math. • Appl. Math. Model. • Appl. Math. Comput. • Commun. Contemp. Math. • Commun. Math. Sci. • C. R. Mécanique • Comput. Math. Appl. • Discrete Contin. Dyn. Syst. Ser. B • IMA J. Appl. Math. • Internat. J. Non-Linear Mech. • J. Comput. Appl. Math. • J. Comput. Phys. • J. Differential Equations • J. Math. Anal. Appl. • J. Math. Biol. • J. Phys. A • J. Theoret. Biol. • Kinet. Relat. Models • Matematiche (Catania) • Math. Models Methods Appl. Sci. • Multiscale Model. Simul. • Netw. Heterog. Media • New J. Phys. • Philos. Trans. Roy. Soc. A • Phys. A • Riv. Math. Univ. Parma (N.S.) • SIAM J. Appl. Dyn. Syst. • SIAM J. Appl. Math. • SIAM J. Control Optim. • Transport. Res. C - Emer. • Vietnam J. Math.
Evaluator for research institutions	• Libera Università di Bolzano (Italy) • PALM Laboratory, University of Paris-Saclay (France) • Royal Society University Research Fellowship Scheme (UK)

Students

2006 – today	40+ BSc students, 13 MSc students, 7 PhD students, 8 postdocs

Publications

2006 – today	60+ journal papers, 3 books, 8 book chapters, 2 conference papers
Full list and preprints	Personal website: https://staff.polito.it/andrea.tosin/publications.html ResearchGate: https://www.researchgate.net/profile/Andrea-Tosin arXiv: http://arxiv.org/a/tosin_a_1

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