

Simone Rusconi

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EMPLOYMENT

Assistant Professor on Tenure Track, Dept. of Mathematics, CUNEF Universidad, Madrid, Spain, 2022 – Present

EDUCATION

Doctor of Philosophy in Mathematics and Statistics, UPV/EHU - University of the Basque Country, Leioa, Spain, 2018

FIELDS OF INTEREST

Mathematical models and simulation algorithms for physico-chemical systems

PUBLICATIONS

- [1] Rusconi, Simone; Schenk, Christina; Zarnescu, Arghir; Akhmatskaya, Elena: "Reducing model complexity by means of the optimal scaling: Population balance model for latex particles morphology formation", *Applied Mathematics and Computation*, 443, 127756, 2023.
- [2] Rusconi, Simone; Dutykh, Denys; Zarnescu, Arghir; Sokolovski, Dmitri; Akhmatskaya, Elena: "An optimal scaling to computationally tractable dimensionless models: Study of latex particles morphology formation", *Computer Physics Communications*, 247, 106944, 2020.
- [3] Sokolovski, Dmitri; Rusconi, Simone; Brouard, Santiago; Akhmatskaya, Elena: "Reexamination of continuous fuzzy measurement on two-level systems", *Physical Review A*, 95(4), 042111, 2017.
- [4] Rusconi, Simone; Akhmatskaya, Elena; Sokolovski, Dmitri; Ballard, Nicholas; de la Cal, José C: "Relative Frequencies of Constrained Events in Stochastic Processes: an Analytical Approach", *Physical Review E - Statistical, Nonlinear, and Soft Matter Physics*, 92(4), 043306, 2015.

- [5] Sokolovski, Dmitri; Rusconi, Simone; Akhmatskaya, Elena; Asua, José M: "Non-Markovian models of the growth of a polymer chain", *Proceedings of The Royal Society A: Mathematical Physical and Engineering Science*, 471(2180), 20140899, 2015.

WORKING PAPERS

- [1] Rusconi, Simone; Schenk, Christina; Ceuca, Razvan; Zarnescu, Arghir; Akhmatskaya, Elena: "Complexity reduction of physical models: an equation-free approach by means of scaling", Preprint submitted to *Proceedings of The Royal Society A: Mathematical Physical and Engineering Science*, 2025.

SELECTED ACADEMIC HONOURS AND GRANTS

- [1] The research activity between 2014 and 2020, both inclusive, has been recognized as "Sexenio de Investigación" within the agreement between ANECA and CUNEF Universidad (2023).
- [2] Severo Ochoa Joint Postdoctoral Fellowship, BCAM Severo Ochoa accreditation SEV-2017-0718, funded by Spanish State Research Agency, Ministry of Science, Innovation and Universities (2020).
- [3] Travel grant for participation in "Spring school on the mathematical design of materials" held at Isaac Newton Institute for Mathematical Sciences (Cambridge, United Kingdom), covered from Institute Workshop funds (2019).

SELECTED PRESENTATIONS

CONFERENCES

- [1] "Reducing Complexity of a Population Balance Model for Synthesis of Composite Polymer Particles", ICIAM 2023, Tokyo, Japan, August 21, 2023.
- [2] "A Multi-scale Model for Prediction of Particles Morphology Formation", SIAM Conference on Mathematical Aspects of Materials Science (MS21), Basque Center for Applied Mathematics, Bilbao, Spain, May 20, 2021.

SEMINARS

- [1] "Model & Methods for Chemical Kinetics: Study of Latex Particles Formation", Congreso Bienal de la Real Sociedad Matemática Española, Pamplona, Spain, January 26, 2024.
- [2] "Probabilistic Modelling of Polymerization Reactions", CUNEF Universidad, Madrid, Spain, February 10, 2022.

PROFESSIONAL ACTIVITIES

Academic Tutor for International Exchange Students from CUNEF Universidad (Madrid, Spain) and for internships of Students from CUNEF Universidad (Madrid, Spain).