Publication list

Matthieu Mangeat

Below, you will find the publications for which I am one of the co-authors, listed in chronological order of their publication in peer-reviewed journals. In summary, I have published two letters in *Physical Review Letters*, three letters in *Europhysics Letters*, one article in *Communications Physics*, one article in *Scientific Reports*, seven articles in *Physical Review E*, two articles in *Journal of Chemical Physics*, two articles in *Journal of Statistical Mechanics : Theory and Experiment*, and one article in *Journal of Physics A : Mathematical and Theoretical*.

[1] M. Mangeat and F. Zamponi, *Quantitative approximation schemes for glasses*, Phys. Rev. E **93**, 012609 (2016), `arXiv:1510.03808`.

[2] X. Zhou, R. Zhao, K. Schwarz, M. Mangeat, E. C. Schwarz, M. Hamed, I. Bogeski, V. Helms, H. Rieger, and B. Qu, *Bystander cells enhance NK cytotoxic efficiency by reducing search time*, Scientific Reports **7**, 44357 (2017).

[3] M. Mangeat, T. Guérin, and D. S. Dean, *Geometry controlled dispersion in periodic corrugated channels*, EPL **118**, 40004 (2017), `arXiv:1709.03722`.

[4] M. Mangeat, T. Guérin, and D. S. Dean, *Dispersion in two dimensional channels — the Fick-Jacobs approximation revisited*, J. Stat. Mech. **2017**, 123205 (2017), `arXiv:1710.02699`.

[5] M. Mangeat, T. Guérin, and D. S. Dean, *Dispersion in two-dimensional periodic channels with discontinuous profiles*, J. Chem. Phys. **149**, 124105 (2018), `arXiv:1807.05366`.

[6] Y. Amarouchene, M. Mangeat, B. Vidal Montes, L. Ondic, T. Guérin, D. S. Dean, and Y. Louyer, *Nonequilibrium Dynamics Induced by Scattering Forces for Optically Trapped Nanoparticles in Strongly Inertial Regimes*, Phys. Rev. Lett. **122**, 183901 (2019), `arXiv:1812.06804`.

[7] M. Mangeat, Y. Amarouchene, Y. Louyer, T. Guérin, and D. S. Dean, *Role of nonconservative scattering forces and damping on Brownian particles in optical traps*, Phys. Rev. E **99**, 052107 (2019), `arXiv:1812.09188`.

[8] M. Mangeat and H. Rieger, *The narrow escape problem in a circular domain with radial piecewise constant diffusivity*, J. Phys. A : Math. Theor. **52**, 424002 (2019), `arXiv:1906.06975`.

[9] M. Mangeat, T. Guérin, and D. S. Dean, *Effective diffusivity of Brownian particles in a two dimensional square lattice of hard disks*, J. Chem. Phys. **152**, 234109 (2020), `arXiv:2111.04354`.

[10] S. Chatterjee, M. Mangeat, R. Paul, and H. Rieger, *Flocking and re-orientation transition in the 4-state active Potts model*, EPL **130**, 66001 (2020), `arXiv:1911.13067`.

[11] M. Mangeat, S. Chatterjee, R. Paul, and H. Rieger, *Flocking with a q-fold discrete symmetry: band-to-lane transition in the active Potts model*, Phys. Rev. E **102**, 042601 (2020), `arXiv:2007.14875`.

[12] M. Mangeat and H. Rieger, *Narrow escape problem in two-shell spherical domains*, Phys. Rev. E **104**, 044124 (2021), `arXiv:2104.13125`.

[13] M. Mangeat, T. Guérin, and D. S. Dean, *Steady state of overdamped particles in the non-conservative force field of a simple non-linear model of optical trap*, J. Stat. Mech. **2021**, 113205 (2021), `arXiv:2110.04362`.

[14] A. Alexandre, M. Mangeat, T. Guérin, and D. S. Dean, *How Stickiness Can Speed Up Diffusion in Confined Systems*, Phys. Rev. Lett. **128**, 210601 (2022), `arXiv:2112.05532`.

[15] S. Chatterjee, M. Mangeat, and H. Rieger, *Polar flocks with discretized directions: the active clock model approaching the Vicsek model*, EPL **138**, 41001 (2022), `arXiv:2203.01181`.

[16] S. Chatterjee, M. Mangeat, C.-U. Woo, H. Rieger, and J. D. Noh, *Flocking of two unfriendly species: The two-species Vicsek model*, Phys. Rev. E **107**, 024607 (2023), arXiv:2211.10494.

[17] M. Karmakar, S. Chatterjee, M. Mangeat, H. Rieger, and R. Paul, *Jamming and flocking in the restricted active Potts model*, Phys. Rev. E **108**, 014604 (2023), arXiv:2212.10251.

[18] M. Mangeat, S. Chakraborty, A. Wysocki, and H. Rieger, *Stationary particle currents in sedimenting active matter wetting a wall*, Phys. Rev. E **109**, 014616 (2024), arXiv:2309.09714.

[19] M. Mangeat, S. Chatterjee, J. D. Noh, and H. Rieger, *Emergent complex phases in a discrete flocking model with reciprocal and non-reciprocal interactions*, Commun. Phys. **8**, 186 (2025), arXiv:2412.02501.

[20] A. K. Dutta, M. Mangeat, H. Rieger, R. Paul, and S. Chatterjee, *Stability of flocking in the reciprocal two-species Vicsek model : Effects of relative population, motility, and noise*, submitted (2025), arXiv:2504.13709.

[21] S. Chatterjee, M. Karmakar, M. Mangeat, H. Rieger, and R. Paul, *Stability of discrete-symmetry flocks : sandwich state, traveling domains and motility-induced pinning*, submitted (2025), arXiv:2507.08187.