

# List of publications

Raphael Wittkowski

See <https://www.uni-muenster.de/Physik.TP/~wittkowski/publications.pdf> for an update.

**ORCID:** 0000-0003-4881-9173

**Google Scholar:** <https://scholar.google.de/citations?user=ZYxh1t0AAAAJ>

**Total number of publications:** 72

**Type of publications:**

- 1× *book*
- 3× *review article*
- 1× *perspective article*
- 52× *regular article*
- 1× *conference proceeding*
- 8× *preprint*
- 1× *patent application*
- 4× *software*
- 1× *other*

**High-impact journals (impact factor  $\geq 9$ ):**

- 2× *Advances in Physics*
- 1× *Advanced Science*
- 1× *ACS Nano*
- 3× *Nature Communications*
- 1× *Science Advances*
- 6× *Physical Review Letters*

**Other journals (impact factor  $< 9$ ):**

- 1× *AIP Advances*
- 1× *Annalen der Physik*

1× *Contributions to Plasma Physics*  
1× *European Journal of Physics*  
1× *European Physical Journal Special Topics*  
6× *Journal of Chemical Physics*  
1× *Journal of Computational Electronics*  
1× *Journal of Physics A: Mathematical and Theoretical*  
1× *Journal of Physics Communications*  
3× *Journal of Physics: Condensed Matter*  
2× *Langmuir*  
1× *Modelling and Simulation in Materials Science and Engineering*  
1× *Molecular Physics*  
3× *Nanoscale Advances*  
2× *New Journal of Physics*  
2× *Physical Chemistry Chemical Physics*  
12× *Physical Review E*  
1× *Physical Review Research*  
1× *Physics of Fluids*

**Special publications:**

8 *publications resulted in press reports*  
7 *publications selected as highlight by the editor*  
6 *invited publications*

**Citations (according to Google Scholar):**

3265 *citations in total*  
*h index 26*  
Statistics:  
3 *publications with more than 300 citations*  
6 *publications with more than 200 citations*  
7 *publications with more than 100 citations*  
39 *publications with more than 10 citations*

## a) Book

- [B1] **R. Wittkowski**,  
*Brownian dynamics of active and passive anisotropic colloidal particles*,  
Berichte aus der Physik (Shaker Verlag, Aachen, 2012), 198 pages.  
ISBN: 978-3-8440-1368-9, DOI: 10.2370/9783844013689.

## b) Review articles (with peer review)

- [R1] M. te Vrugt, H. Löwen, and **R. Wittkowski**,  
*Classical dynamical density functional theory: from fundamentals to applications*,  
Advances in Physics **69**, 121–247 (2020). DOI: 10.1080/00018732.2020.1854965.  
Press reports: [7thSpace](#), [Bioengineer](#), [Brinkwire](#), [EurekAlert!](#), [Informationsdienst Wissenschaft](#), [Infosurhoy](#), [Phys.org](#), [Science Bulletin](#), [ScienceDaily](#), [Science-springs](#), [Scienmag](#), [University of Düsseldorf](#), [University of Münster](#).
- [R2] H. H. Wensink, H. Löwen, M. Marechal, A. Härtel, **R. Wittkowski**, U. Zimmermann, A. Kaiser, and A. M. Menzel,  
*Differently shaped hard body colloids in confinement: from passive to active particles*,  
European Physical Journal Special Topics **222**, 3023–3037 (2013). DOI: 10.1140/epjst/e2013-02073-0.
- [R3] H. Emmerich, H. Löwen, **R. Wittkowski**, T. Gruhn, G. I. Tóth, G. Tegze, and L. Gránásy,  
*Phase-field-crystal models for condensed matter dynamics on atomic length and diffusive time scales: an overview*,  
Advances in Physics **61**, 665–743 (2012). DOI: 10.1080/00018732.2012.737555.

## c) Perspective article (with peer review)

- [T1] M. te Vrugt and **R. Wittkowski**,  
*Perspective: New directions in dynamical density functional theory*,  
Journal of Physics: Condensed Matter, in press (2022). DOI: 10.1088/1361-648X/ac8633.  
[Invited article.](#)

## d) Regular articles (with peer review)

- [A1] M. te Vrugt, M. P. Holl, A. Koch, **R. Wittkowski**, and U. Thiele,  
*Derivation and analysis of a phase field crystal model for a mixture of active and passive particles*,

Modelling and Simulation in Materials Science and Engineering, accepted (2022). DOI: 10.1088/1361-651X/ac856a.

[Invited article. Special Issue “Focus on Phase Field Crystal Modelling in Materials Science”.](#)

- [A2] J. Mayer Martins and **R. Wittkowski**,  
*Inertial dynamics of an active Brownian particle*,  
Physical Review E **106**, 034616 (2022). DOI: 10.1103/PhysRevE.106.034616.
- [A3] J. Voß and **R. Wittkowski**,  
*Acoustic propulsion of nano- and microcones: dependence on the viscosity of the surrounding fluid*,  
Langmuir **38**, 10736–10748 (2022). DOI: 10.1021/acs.langmuir.2c00603.
- [A4] P. A. Monderkamp, R. Wittmann, M. te Vrugt, A. Voigt, **R. Wittkowski**, and H. Löwen,  
*Topological fine structure of smectic grain boundaries and tetratic disclination lines within three-dimensional smectic liquid crystals*,  
Physical Chemistry Chemical Physics **24**, 15691–15704 (2022). DOI: 10.1039/D2CP00060A.  
[Selected for the journal cover.](#)
- [A5] T. Nitschke, J. Stenhammar, and **R. Wittkowski**,  
*Collective guiding of acoustically propelled nano- and microparticles*,  
Nanoscale Advances **4**, 2844–2856 (2022). DOI: 10.1039/D2NA00007E.
- [A6] J. Bickmann, S. Bröker, J. Jeggle, and **R. Wittkowski**,  
*Analytical approach to chiral active systems: suppressed phase separation of interacting Brownian circle swimmers*,  
Journal of Chemical Physics **156**, 194904 (2022). DOI: 10.1063/5.0085122.
- [A7] J. Voß and **R. Wittkowski**,  
*Propulsion of bullet- and cup-shaped nano- and microparticles by traveling ultrasound waves*,  
Physics of Fluids **34**, 052007 (2022). DOI: 10.1063/5.0089367.  
[Invited article.](#)
- [A8] J. Voß and **R. Wittkowski**,  
*Orientation-dependent propulsion of triangular nano- and microparticles by a traveling ultrasound wave*,  
ACS Nano **16**, 3604–3612 (2022). DOI: 10.1021/acsnano.1c02302.  
[Press reports: AZoNano, Bionity, ChemEurope, c’t, EurekAlert!, Informationsdienst Wissenschaft, Innovations-Report, Mirage.News, Nanowerk, Phys.org, Pro-Physik.de, ScienceDaily, Scienmag, University of Münster.](#)
- [A9] S. Raghuraman, A.-S. Schubert, S. Bröker, A. Jurado, A. Müller, M. Brandt, B. E. Vos, A. D. Hofemeier, F. Abbasi, M. Stehling, **R. Wittkowski**, J. Ivaska, and T. Betz,  
*Pressure drives rapid burst-like coordinated cellular motion from 3D cancer aggregates*,  
Advanced Science **9**, 2104808 (2022). DOI: 10.1002/advs.202104808.
- [A10] J. Voß and **R. Wittkowski**,

- Acoustically propelled nano- and microcones: fast forward and backward motion*,  
Nanoscale Advances **4**, 281–293 (2022). DOI: 10.1039/D1NA00655J.
- [A11] M. te Vrugt, S. Hossenfelder, and **R. Wittkowski**,  
*Mori-Zwanzig formalism for general relativity: a new approach to the averaging problem*,  
Physical Review Letters **127**, 231101 (2021). DOI: 10.1103/PhysRevLett.127.231101.  
Press reports: Borkener Zeitung, EurekAlert!, Frankfurt Institute for Advanced Studies, Informationsdienst Wissenschaft, Innovations-Report, Münsterland Zeitung, N+1, Phys.org, Popmech, Pro-Physik.de, Sciencesprings, SciTechDaily, Space Daily, Tech Explorist, University of Münster.
- [A12] M. te Vrugt, G. I. Tóth, and **R. Wittkowski**,  
*Master equations for Wigner functions with spontaneous collapse and their relation to thermodynamic irreversibility*,  
Journal of Computational Electronics **20**, 2209–2231 (2021). DOI: 10.1007/s10825-021-01804-6.  
Invited article. Special Issue “Wigner Functions in Computational Electronics and Photonics”.
- [A13] M. te Vrugt, J. Jeggle, and **R. Wittkowski**,  
*Jerky active matter: a phase field crystal model with translational and orientational memory*,  
New Journal of Physics **23**, 063023 (2021). DOI: 10.1088/1367-2630/abfa61.
- [A14] M. te Vrugt, J. Bickmann, and **R. Wittkowski**,  
*Containing a pandemic: nonpharmaceutical interventions and the ‘second wave’*,  
Journal of Physics Communications **5**, 055008 (2021). DOI: 10.1088/2399-6528/abf79f.  
Selected for a Focus in Physik Journal **20**, 6, 18-19 (2021).
- [A15] M. te Vrugt and **R. Wittkowski**,  
*Orientalional order parameters for arbitrary quantum systems*,  
Annalen der Physik **532**, 2000266 (2020). DOI: 10.1002/andp.202000266.  
Among the journal’s “top 10 most downloaded papers” published in 2019 or 2020.
- [A16] M. te Vrugt, J. Bickmann, and **R. Wittkowski**,  
*Effects of social distancing and isolation on epidemic spreading modeled via dynamical density functional theory*,  
Nature Communications **11**, 5576 (2020). DOI: 10.1038/s41467-020-19024-0.  
Featured article. Selected as Editors’ Highlight for the Focus “Applied physics and mathematics”. Selected for a Focus in Physik Journal **20**, 6, 18-19 (2021).  
Press reports: Abitur und Studium, Analytik News, Archytele, Avalanches, Bio-engineer, Bioon, Bocholter-Borkener Volksblatt, DE24 News, Deutsches Ärzteblatt, Dorstener Zeitung, EurekAlert!, Healthcare Hygiene Magazine, Heilpraxisnet, Informationsdienst Wissenschaft, JuraForum, Laborpraxis, Medical Xpress, Münsterland-Zeitung, myScience, Nachedeu, NewsBeezer, NotiUlti, Osel, Pediatric Radiology, Research in Germany, Ruhr-Nachrichten, ScienceDaily, Scienmag, Stadt4.0, Tekk.tv, TheDietWorld, TodayHeadline, University of Münster, Wemp, Westfälische Nachrichten, wissen|leben, Wissen.Newzs.

- [A17] J. Voß and **R. Wittkowski**,  
*On the shape-dependent propulsion of nano- and microparticles by traveling ultrasound waves*,  
 Nanoscale Advances **2**, 3890–3899 (2020). DOI: 10.1039/D0NA00099J.  
[Selected for the “Nanoscale Advances HOT Article Collection”](#).
- [A18] J. Bickmann and **R. Wittkowski**,  
*Collective dynamics of active Brownian particles in three spatial dimensions: a predictive field theory*,  
 Physical Review Research **2**, 033241 (2020). DOI: 10.1103/PhysRevResearch.2.033241.
- [A19] M. te Vrugt and **R. Wittkowski**,  
*Projection operators in statistical mechanics: a pedagogical approach*,  
 European Journal of Physics **41**, 045101 (2020). DOI: 10.1088/1361-6404/ab8e28.
- [A20] J. Jeggle, J. Stenhammar, and **R. Wittkowski**,  
*Pair-distribution function of active Brownian spheres in two spatial dimensions: simulation results and analytic representation*,  
 Journal of Chemical Physics **152**, 194903 (2020). DOI: 10.1063/1.5140725.
- [A21] M. te Vrugt and **R. Wittkowski**,  
*Relations between angular and Cartesian orientational expansions*,  
 AIP Advances **10**, 035106 (2020). DOI: 10.1063/1.5141367.
- [A22] J. Bickmann and **R. Wittkowski**,  
*Predictive local field theory for interacting active Brownian spheres in two spatial dimensions*,  
 Journal of Physics: Condensed Matter **32**, 214001 (2020). DOI: 10.1088/1361-648X/ab5e0e.  
[Invited article. Special Issue “Emerging Leaders 2019”](#).
- [A23] A. R. Sprenger, M. A. Fernandez-Rodriguez, L. Alvarez, L. Isa, **R. Wittkowski**, and H. Löwen,  
*Active Brownian motion with orientation-dependent motility: theory and experiments*,  
 Langmuir **36**, 7066–7073 (2020). DOI: 10.1021/acs.langmuir.9b03617.  
[Selected for the journal cover](#).
- [A24] M. te Vrugt and **R. Wittkowski**,  
*Mori-Zwanzig projection operator formalism for far-from-equilibrium systems with time-dependent Hamiltonians*,  
 Physical Review E **99**, 062118 (2019). DOI: 10.1103/PhysRevE.99.062118.
- [A25] S. Praetorius, A. Voigt, **R. Wittkowski**, and H. Löwen,  
*Active crystals on a sphere*,  
 Physical Review E **97**, 052615 (2018). DOI: 10.1103/PhysRevE.97.052615.
- [A26] C. E. Sitta, F. Smallenburg, **R. Wittkowski**, and H. Löwen,  
*Liquid crystals of hard rectangles on flat and cylindrical manifolds*,  
 Physical Chemistry Chemical Physics **20**, 5285–5294 (2018). DOI: 10.1039/C7CP07026H.

- [A27] **R. Wittkowski**, J. Stenhammar, and M. E. Cates,  
*Nonequilibrium dynamics of mixtures of active and passive colloidal particles*,  
New Journal of Physics **19**, 105003 (2017). DOI: 10.1088/1367-2630/aa8195.  
[Invited article. Special Issue “Focus on Active Colloids and Nanoparticles”](#).
- [A28] A. I. Campbell, **R. Wittkowski**, B. ten Hagen, H. Löwen, and S. J. Ebbens,  
*Helical paths, gravitaxis, and separation phenomena for mass-anisotropic self-propelling colloids: experiment versus theory*,  
Journal of Chemical Physics **147**, 084905 (2017). DOI: 10.1063/1.4998605.
- [A29] C. E. Sitta, F. Smalenburg, **R. Wittkowski**, and H. Löwen,  
*Hard rectangles near curved hard walls: tuning the sign of the Tolman length*,  
Journal of Chemical Physics **145**, 204508 (2016). DOI: 10.1063/1.4967876.
- [A30] T. Glanz, **R. Wittkowski**, and H. Löwen,  
*Symmetry breaking in clogging for oppositely driven particles*,  
Physical Review E **94**, 052606 (2016). DOI: 10.1103/PhysRevE.94.052606.
- [A31] J. Stenhammar, **R. Wittkowski**, D. Marenduzzo, and M. E. Cates,  
*Light-induced self-assembly of active rectification devices*,  
Science Advances **2**, e1501850 (2016). DOI: 10.1126/sciadv.1501850.  
[Selected as Research Highlight in Nature Physics \*\*12\*\*, 376 \(2016\)](#). Press reports: Big News Network, Business Standard, Dagens Nyheter, Daijiworld, DesignNews, ECN, EurekAlert!, FARS News, Forskning.se, Lund University, Nanotechnology Now, Newkerala, Noodles, Nvs24, ScienceDaily, Space Daily, University of Düsseldorf, Zee News.
- [A32] A. Tiribocchi, **R. Wittkowski**, D. Marenduzzo, and M. E. Cates,  
*Active Model H: scalar active matter in a momentum-conserving fluid*,  
Physical Review Letters **115**, 188302 (2015). DOI: 10.1103/PhysRevLett.115.188302.
- [A33] A. P. Solon, J. Stenhammar, **R. Wittkowski**, M. Kardar, Y. Kafri, M. E. Cates, and J. Tailleur,  
*Pressure and phase equilibria in interacting active Brownian spheres*,  
Physical Review Letters **114**, 198301 (2015). DOI: 10.1103/PhysRevLett.114.198301.  
[Featured in Physics. Editors’ Suggestion. Selected for a Viewpoint in PRL.](#)
- [A34] B. ten Hagen, **R. Wittkowski**, D. Takagi, F. Kümmel, C. Bechinger, and H. Löwen,  
*Can the self-propulsion of anisotropic microswimmers be described by using forces and torques?*,  
Journal of Physics: Condensed Matter **27**, 194110 (2015). DOI: 10.1088/0953-8984/27/19/194110.
- [A35] J. Stenhammar, **R. Wittkowski**, D. Marenduzzo, and M. E. Cates,  
*Activity-induced phase separation and self-assembly in mixtures of active and passive particles*,  
Physical Review Letters **114**, 018301 (2015). DOI: 10.1103/PhysRevLett.114.018301.
- [A36] B. ten Hagen, F. Kümmel, **R. Wittkowski**, D. Takagi, H. Löwen, and C. Bechinger,

- Gravitaxis of asymmetric self-propelled colloidal particles*,  
 Nature Communications **5**, 4829 (2014). DOI: 10.1038/ncomms5829.  
 Selected for a Focus in Physik Journal **13**, 10, 21-23 (2014). Press reports: DRa-  
 dio Wissen, Innovations-Report, LABO, Max Planck Society, Phys.org, Univer-  
 sity of Düsseldorf, University of Stuttgart, VBIO.
- [A37] F. Kümmel, B. ten Hagen, **R. Wittkowski**, D. Takagi, I. Buttinoni, R. Eich-  
 horn, G. Volpe, H. Löwen, and C. Bechinger,  
*Reply to “Comment on ‘Circular motion of asymmetric self-propelling parti-  
 cles’”*,  
 Physical Review Letters **113**, 029802 (2014). DOI: 10.1103/PhysRevLett.113.0  
 29802.
- [A38] **R. Wittkowski**, A. Tiribocchi, J. Stenhammar, R. J. Allen, D. Marenduzzo,  
 and M. E. Cates,  
*Scalar  $\phi^4$  field theory for active-particle phase separation*,  
 Nature Communications **5**, 4351 (2014). DOI: 10.1038/ncomms5351.
- [A39] D. J. Kraft, **R. Wittkowski**, B. ten Hagen, K. V. Edmond, D. J. Pine, and H.  
 Löwen,  
*Brownian motion and the hydrodynamic friction tensor for colloidal particles of  
 complex shape*,  
 Physical Review E **88**, 050301(R) (2013). DOI: 10.1103/PhysRevE.88.050301.  
 Rapid Communication.
- [A40] M. Tarama, A. M. Menzel, B. ten Hagen, **R. Wittkowski**, T. Ohta, and H.  
 Löwen,  
*Dynamics of a deformable active particle under shear flow*,  
 Journal of Chemical Physics **139**, 104906 (2013). DOI: 10.1063/1.4820416.
- [A41] **R. Wittkowski**, H. Löwen, and H. R. Brand,  
*Microscopic approach to entropy production*,  
 Journal of Physics A: Mathematical and Theoretical **46**, 355003 (2013). DOI:  
 10.1088/1751-8113/46/35/355003.
- [A42] S. Praetorius, A. Voigt, **R. Wittkowski**, and H. Löwen,  
*Structure and dynamics of interfaces between two coexisting liquid-crystalline  
 phases*,  
 Physical Review E **87**, 052406 (2013). DOI: 10.1103/PhysRevE.87.052406.
- [A43] F. Kümmel, B. ten Hagen, **R. Wittkowski**, I. Buttinoni, R. Eichhorn, G.  
 Volpe, H. Löwen, and C. Bechinger,  
*Circular motion of asymmetric self-propelling particles*,  
 Physical Review Letters **110**, 198302 (2013). DOI: 10.1103/PhysRevLett.110.1  
 98302.  
 Featured in Physics. Editors’ Suggestion. Selected for a Synopsis in PRL.
- [A44] **R. Wittkowski**, H. Löwen, and H. R. Brand,  
*Extended dynamical density functional theory for colloidal mixtures with tem-  
 perature gradients*,  
 Journal of Chemical Physics **137**, 224904 (2012). DOI: 10.1063/1.4769101.
- [A45] **R. Wittkowski** and H. Löwen,



- Self-propelled Brownian spinning top: dynamics of a biaxial swimmer at low Reynolds numbers*,  
Physical Review E **85**, 021406 (2012). DOI: 10.1103/PhysRevE.85.021406.
- [A46] **R. Wittkowski** and H. Löwen,  
*Dynamical density functional theory for colloidal particles with arbitrary shape*,  
Molecular Physics **109**, 2935–2943 (2011). DOI: 10.1080/00268976.2011.609145.
- [A47] **R. Wittkowski**, H. Löwen, and H. R. Brand,  
*Microscopic and macroscopic theories for the dynamics of polar liquid crystals*,  
Physical Review E **84**, 041708 (2011). DOI: 10.1103/PhysRevE.84.041708.
- [A48] B. ten Hagen, **R. Wittkowski**, and H. Löwen,  
*Brownian dynamics of a self-propelled particle in shear flow*,  
Physical Review E **84**, 031105 (2011). DOI: 10.1103/PhysRevE.84.031105.
- [A49] C. V. Achim, **R. Wittkowski**, and H. Löwen,  
*Stability of liquid crystalline phases in the phase-field-crystal model*,  
Physical Review E **83**, 061712 (2011). DOI: 10.1103/PhysRevE.83.061712.
- [A50] **R. Wittkowski**, H. Löwen, and H. R. Brand,  
*Polar liquid crystals in two spatial dimensions: the bridge from microscopic to macroscopic modeling*,  
Physical Review E **83**, 061706 (2011). DOI: 10.1103/PhysRevE.83.061706.
- [A51] **R. Wittkowski**, H. Löwen, and H. R. Brand,  
*Derivation of a three-dimensional phase-field-crystal model for liquid crystals from density functional theory*,  
Physical Review E **82**, 031708 (2010). DOI: 10.1103/PhysRevE.82.031708.
- [A52] **R. Wittkowski**, A. B. Schelin, and K.-H. Spatschek,  
*Mean motion in stochastic plasmas with a space-dependent diffusion coefficient*,  
Contributions to Plasma Physics **49**, 55–69 (2009). DOI: 10.1002/ctpp.200910009.

## e) Conference proceedings (with peer review)

- [C1] M. Evers, **R. Wittkowski**, and L. Linsen,  
*ASEVis: Visual exploration of active system ensembles to define characteristic measures*,  
IEEE VIS Short Papers 2022, accepted, arXiv:2207.06519 (2022).

## f) Preprints

- [E1] V. Bobkova, **R. Wittkowski**, and C. Denz,  
*Optical tweezers for light-assisted organization of active colloidal matter*,  
preprint, arXiv:2206.13789 (2022).

- [E2] M. te Vrugt, T. Frohoff-Hülsmann, E. Heifetz, U. Thiele, and **R. Wittkowski**, *From a microscopic inertial active matter model to the Schrödinger equation*, preprint, arXiv:2204.03018 (2022).
- [E3] J. Voß and **R. Wittkowski**, *Propulsion of nano- and microcones by a traveling ultrasound wave: dependence on orientation and aspect ratio of the particles*, preprint, (2022).
- [E4] J. Voß and **R. Wittkowski**, *Ultrasound-propelled nano- and microspinnners*, preprint, (2022).
- [E5] J. Bickmann, S. Bröker, and **R. Wittkowski**, *Active Brownian particles in external force fields: field-theoretical models, generalized barometric law, and programmable density patterns*, preprint, arXiv:2202.04423 (2022).
- [E6] J. Voß and **R. Wittkowski**, *Acoustic propulsion of nano- and microcones: dependence on particle size, acoustic energy density, and sound frequency*, preprint, (2022).
- [E7] M. Evers and **R. Wittkowski**, *A colloidal time crystal and its tempomechanical properties*, preprint, arXiv:2112.04498 (2021).
- [E8] J. Voß and **R. Wittkowski**, *Hydrodynamic resistance matrices of colloidal particles with various shapes*, preprint, arXiv:1811.01269 (2018).

## g) Patent application

- [P1] **R. Wittkowski** [inventor], University of Münster [applicant], *Vorrichtung und Verfahren zum Sortieren von Partikeln mittels Strahlung*. German Patent and Trade Mark Office, patent pending, 2019.

## h) Software

- [S1] M. Evers, **R. Wittkowski**, and L. Linsen, *ASEVis – Active system ensemble visualization*. Accompanying article: M. Evers, R. Wittkowski, and L. Linsen, IEEE VIS Short Papers 2022, accepted, arXiv:2207.06519 (2022). Date of release: July 2022. GitHub: marinaevers/asevis.
- [S2] J. Jeggle and **R. Wittkowski**, *sir\_ddft – A Rust implementation of the SIR-DDFT model with Python and JavaScript bindings*.

Accompanying article: M. te Vrugt, J. Bickmann, and R. Wittkowski, Nature Communications **11**, 5576 (2020). Date of release: April 2021. Web-based demonstration: [https://jjegg01.github.io/sir\\_ddft/demo/](https://jjegg01.github.io/sir_ddft/demo/), GitHub: [jjegg01/sir\\_ddft](https://github.com/jjegg01/sir_ddft), Crates.io: [sir\\_ddft](https://crates.io/crates/sir_ddft). DOI: 10.5281/zenodo.4702572.

[Selected for a Focus in Physik Journal \*\*20\*\*, 6, 18-19 \(2021\).](#)

- [S3] J. Jeggle, J. Stenhammar, and **R. Wittkowski**,  
`abp.spherical2d.pairdistribution` – *Python module that provides a function for the product of the full pair-distribution function and the interparticle force for a homogeneous suspension of spherical active Brownian particles interacting by a Weeks-Chandler-Andersen potential in two spatial dimensions.*  
Accompanying article: J. Jeggle, J. Stenhammar, and R. Wittkowski, Journal of Chemical Physics **152**, 194903 (2020). Date of release: December 2019. GitHub: [jjegg01/abp.spherical2d.pairdistribution](https://github.com/jjegg01/abp.spherical2d.pairdistribution). DOI: 10.5281/zenodo.3577846.
- [S4] J. Voß, J. Jeggle, and **R. Wittkowski**,  
`HydResMat` – *FEM-based code for calculating the hydrodynamic resistance matrix of an arbitrarily-shaped colloidal particle.*  
Accompanying article: J. Voß and R. Wittkowski, arXiv:1811.01269 (2018). Date of release: May 2019. GitHub: [HV59/HydResMat](https://github.com/HV59/HydResMat). DOI: 10.5281/zenodo.3541588.

## i) Other

- [O1] **R. Wittkowski**,  
*Eine Fiktion wird Forschungsziel*,  
university newspaper “wissen|leben”, **no. 7**, p. 6, edition November/December (2018).  
<https://www.uni-muenster.de/news/view.php?cmdid=9924>.