List of cooperations

Raphael Wittkowski

The following list shows all past cooperations that have resulted in publications and all currently running cooperations that are likely to result in publications in the near future. For each cooperator, the name, affiliation, field of research, type of research, topic(s) of cooperation, year(s) of cooperation, and publication(s) that resulted from the cooperation are shown. Students and researchers supervised, co-supervised, or examined by R.W. are omitted from this list.

The affiliations of the cooperators correspond to the date of the last cooperation and are not necessarily still valid today. Furthermore, the type of research (experiment or theory) stated in the following list refers to the work contributed by the cooperator in the cooperation project and not necessarily to other research performed by the cooperator.

All citations of publications in the following refer to the list of publications of R.W. that is available at `https://www.uni-muenster.de/Physik.TP/wittkowski/publications.pdf`.

See `https://www.uni-muenster.de/Physik.TP/wittkowski/cooperations.pdf` for an update.

1. Characterization of cooperations

Number of cooperators: 64 *in total*

Countries of cooperators: 12

$1 \times$ *Brazil*
$2 \times$ *Finland*
$4 \times$ *France*
$30 \times$ *Germany*
$2 \times$ *Hungary*
$2 \times$ *Israel*
$2 \times$ *Japan*
$3 \times$ *Netherlands*
$2 \times$ *Sweden*
$4 \times$ *Switzerland*
$7 \times$ *United Kingdom*
$5 \times$ *United States of America*

Fields of research of cooperators: 10

$3 \times$ *Biology*
$1 \times$ *Biomedicine*
$1 \times$ *Biophysics*
$2 \times$ *Chemistry*
$1 \times$ *Computer Science*
$6 \times$ *Engineering*
$1 \times$ *Geophysics*
$3 \times$ *Materials Science*
$3 \times$ *Mathematics*
$43 \times$ *Physics*

Types of research of cooperators:

$21 \times$ *Experiment*
$43 \times$ *Theory*

2. Detailed list of cooperations

1.	**Cristian V. Achim**	Aalto University, Finland	Physics	Theory
		• *Phase-field-crystal models*	2011	[A48]
2.	**Daniel Ahmed**	University of Zurich, Switzerland	Engineering	Experiment
		• *Ultrasound-propelled colloidal particles*	2022-Now	
3.	**Rosalind J. Allen**	University of Edinburgh, UK	Physics	Theory
		• *Models for the collective dynamics of active Brownian particles*	2014	[A37]
4.	**Laura Alvarez**	University of Zurich, Switzerland	Materials Science	Experiment
		• *Active colloidal particles with orientation-dependent motility*	2019-2020	[A22]
5.	**Clemens Bechinger**	University of Konstanz, Germany	Physics	Experiment
		• *Active colloidal particles with biaxial shapes*	2013-2014	[A42, A36]
		• *Biaxial active colloidal particles under gravity*	2014	[A35]
		• *Hydrodynamics of artificial microswimmers*	2014-2015	[A35, A33]
6.	**Timo Betz**	University of Göttingen, Germany	Biophysics	Experiment
		• *Mechanical properties of tissue*	2018-Now	
		• *Collective migration and invasion of cancer cells*	2019-2021	[A9]
7.	**Helmut R. Brand**	University of Bayreuth, Germany	Physics	Theory
		• *Phase-field-crystal models and symmetry-based field theories for colloidal liquid crystals*	2010-2011	[A50, A49, A46]
		• *Dynamical density functional theory*	2012-2013, 2014-Now	[A43, A40]

		• *Transport equations for the entropy density*	2013	[A40]
8.	**Ivo Buttinoni**	University of Stuttgart, Germany	Physics	Experiment
		• *Active colloidal particles with biaxial shapes*	2013-2014	[A42, A36]
9.	**Andrew I. Campbell**	University of Sheffield, UK	Chemical & Biological Engineering	Experiment
		• *Mass-anisotropic active colloidal particles*	2017	[A27]
10.	**Michael E. Cates**	University of Cambridge, UK	Physics	Theory
		• *Field theories for the collective dynamics of active colloidal particles*	2014-2017	[A37, A31, A30, A26]
		• *Pressure and phase equilibria of active matter*	2015	[A32]
		• *Mixtures of active and passive matter*	2015, 2017	[A34, A26]
		• *Active matter with position-dependent motility*	2016	[A30]
		• *Statistical physics of active matter*	2019-Now	
		• *Effect of orientation-dependent motility on motility-induced phase separation*	2020-Now	
11.	**Cornelia Denz**	University of Münster, Germany	Physics	Experiment
		• *Light-propelled colloidal particles*	2017-Now	[E1]
12.	**Stephen J. Ebbens**	University of Sheffield, UK	Chemical & Biological Engineering	Experiment
		• *Mass-anisotropic active colloidal particles*	2017	[A27]
		• *Ellipsoidal active colloidal particles in self-generated flow*	2019-Now	

13.	**Kazem V. Edmond**	New York University, USA	Physics	Experiment
		• *Brownian motion and hydrodynamic resistance matrix of arbitrarily shaped colloidal particles*	2013	[A38]
14.	**Ralf Eichhorn**	Stockholm University, Sweden	Physics	Theory
		• *Diffusion coefficients of biaxial colloidal particles near a substrate*	2013-2014	[A42, A36]
15.	**Heike Emmerich**	University of Bayreuth, Germany	Engineering	Theory
		• *Phase-field-crystal models*	2012	[Rr3]
16.	**Miguel Angel Fernandez-Rodriguez**	University of Zurich, Switzerland	Materials Science	Experiment
		• *Active colloidal particles with orientation-dependent motility*	2019-2020	[A22]
17.	**László Gránásy**	Wigner Research Centre for Physics, Budapest, Hungary	Physics	Theory
		• *Phase-field-crystal models*	2012	[Rr3]
18.	**Thomas Gruhn**	University of Bayreuth, Germany	Engineering	Theory
		• *Phase-field-crystal models*	2012	[Rr3]
19.	**Svetlana Gurevich**	University of Münster, Germany	Physics	Theory
		• *Wetting*	2019-Now	
20.	**Andreas Härtel**	Utrecht University, Netherlands	Physics	Theory
		• *Rigid colloidal particles with various shapes in confinement*	2013	[Rr2]

21.	**Eyal Heifetz**	Tel Aviv University, Israel	Geophysics	Theory
		• *Relation of active matter and quantum matter*	2021-2022	[E2]
22.	**Andreas Heuer**	University of Münster, Germany	Chemistry	Theory
		• *Wetting*	2019-Now	
23.	**Sabine Hossen-felder**	Frankfurt Institute for Advanced Studies, Germany	Physics	Theory
		• *General relativity and the cosmological averaging problem*	2019-2021	[A11]
24.	**Lucio Isa**	University of Zurich, Switzerland	Materials Science	Experiment
		• *Active colloidal particles with orientation-dependent motility*	2019-2020	[A22]
25.	**Johanna Ivaska**	University of Turku, Finland	Biology	Experiment
		• *Collective migration and invasion of cancer cells*	2021	[A9]
26.	**Yariv Kafri**	Technion, Israel	Physics	Theory
		• *Pressure and phase equilibria of active matter*	2015	[A32]
27.	**Andreas Kaiser**	University of Düsseldorf, Germany	Physics	Theory
		• *Rigid colloidal particles with various shapes in confinement*	2013	[Rr2]
28.	**Oliver Kamps**	University of Münster, Germany	Physics	Theory
		• *Application of machine learning to nonlinear dynamics*	2021-Now	

29.	**Mehran Kardar**	Massachusetts Institute of Technology, USA	Physics	Theory
		• *Pressure and phase equilibria of active matter*	2015	[A32]
30.	**Daniela J. Kraft**	New York University, USA	Physics	Experiment
		• *Brownian motion and hydrodynamic resistance matrix of arbitrarily shaped colloidal particles*	2013	[A38]
31.	**Felix Kümmel**	University of Stuttgart, Germany	Physics	Experiment
		• *Active colloidal particles with biaxial shapes*	2013-2014	[A42, A36]
		• *Biaxial active colloidal particles under gravity*	2014	[A35]
		• *Hydrodynamics of artificial microswimmers*	2014-2015	[A35, A33]
32.	**Lars Linsen**	University of Münster, Germany	Computer Science	Theory
		• *Visualization of active system ensembles*	2022	[C1, S1]
33.	**Hartmut Löwen**	University of Düsseldorf, Germany	Physics	Theory
		• *Phase-field-crystal models for colloidal liquid crystals and active colloidal particles*	2010-2013, 2018	[A50, A49, A46, A48, Rr3, A41, A24]
		• *Dynamics of a rigid active colloidal particle in shear flow*	2011	[A47]
		• *Dynamical density functional theory*	2011-2013, 2014-Now	[A45, A43, A40, Rr1]
		• *Dynamics of an active colloidal particle with arbitrary shape*	2012-2014	[A44, A42, A36]
		• *Transport equations for the entropy density*	2013	[A40]
		• *Dynamics of a deformable active colloidal particle in shear flow*	2013	[A39]

		• *Brownian motion and hydrodynamic resistance matrix of arbitrarily shaped colloidal particles*	2013	[A38]
		• *Rigid colloidal particles with various shapes in confinement*	2013	[Rr2]
		• *Dynamics of biaxial active colloidal particles under gravity*	2014	[A35]
		• *Hydrodynamics of artificial microswimmers*	2014-2015	[A35, A33]
		• *Binary mixtures of oppositely driven colloidal particles and clogging*	2016	[A29]
		• *Interfacial tension of liquid crystals and the Tolman length*	2016	[A28]
		• *Trajectories of mass-anisotropic active colloidal particles*	2017	[A27]
		• *Liquid crystals on curved manifolds*	2018	[A25]
		• *Active colloidal crystals on a spherical manifold*	2018	[A24]
		• *Active colloidal particles with orientation-dependent motility*	2019-2020	[A22]
		• *Active particles with inertia in anisotropic environments*	2019-Now	
		• *Active Brownian motion on curved manifolds*	2019-Now	
		• *Topological fine structure in three-dimensional smectic liquid crystals*	2021-2022	[A4]
34.	**Matthieu Marechal**	University of Erlangen-Nuremberg, Germany	Physics	Theory
		• *Rigid colloidal particles with various shapes in confinement*	2013	[Rr2]
35.	**Davide Marenduzzo**	University of Edinburgh, UK	Physics	Theory
		• *Collective dynamics of active Brownian particles*	2014	[A37]
		• *Collective dynamics of suspensions of active colloidal particles*	2015	[A31]

		• *Mixtures of active and passive matter*	2015	[A34]
		• *Active matter with position-dependent motility*	2016	[A30]
36.	**Andreas M. Menzel**	University of Düsseldorf, Germany	Physics	Theory
		• *Dynamics of a deformable active colloidal particle in shear flow*	2013	[A39]
		• *Rigid colloidal particles with various shapes in confinement*	2013	[Rr2]
37.	**Sarthak Misra**	University of Twente, Netherlands	Biomechan. Engineering	Experiment
		• *Ultrasound-propelled colloidal particles*	2021-Now	
38.	**Takao Ohta**	Kyoto University, Japan	Physics	Theory
		• *Dynamics of a deformable active colloidal particle in shear flow*	2013	[A39]
39.	**David J. Pine**	New York University, USA	Physics	Experiment
		• *Brownian motion and hydrodynamic resistance matrix of arbitrarily shaped colloidal particles*	2013	[A38]
40.	**Simon Praetorius**	Technical University Dresden, Germany	Mathematics	Theory
		• *Phase-field-crystal models for colloidal liquid crystals and active colloidal particles*	2013, 2018	[A41, A24]
		• *Active colloidal crystals on a spherical manifold*	2018	[A24]
41.	**Swetha Raghura-man**	University of Münster, Germany	Biology	Experiment
		• *Collective migration and invasion of cancer cells*	2019-2021	[A9]

42.	**Adriane B. Schelin**	University of São Paulo, Brazil	Physics	Theory
		• *Magnetic field-line transport in a tokamak plasma*	2009	[A51]
43.	**Felix Schindler**	University of Münster, Germany	Mathematics	Theory
		• *Development of advanced computer simulations for acoustofluidics*	2017-Now	
44.	**Christian Scholz**	University of Düsseldorf, Germany	Physics	Experiment
		• *Dynamics of active granular particles*	2019-Now	
45.	**Frank Smallenburg**	Paris-Sud University, France	Physics	Theory
		• *Interfacial tension of liquid crystals and the Tolman length*	2016	[A28]
		• *Liquid crystals on curved manifolds*	2018	[A25]
46.	**Alexandre P. Solon**	Paris Diderot University, France	Physics	Theory
		• *Pressure and phase equilibria of active matter*	2015	[A32]
47.	**Karl-Heinz Spatschek**	University of Düsseldorf, Germany	Physics	Theory
		• *Magnetic field-line transport in a tokamak plasma*	2009	[A51]
48.	**Martin Stehling**	Max Planck Institute for Molecular Biomedicine, Münster, Germany	Biomedicine	Experiment
		• *Collective migration and invasion of cancer cells*	2019-2021	[A9]

49.	**Joakim Stenham-mar**	Lund University, Sweden	Chemistry	Theory
		• *Collective dynamics of active Brownian particles*	2014	[A37]
		• *Pressure and phase equilibria of active matter*	2015	[A32]
		• *Mixtures of active and passive matter*	2015, 2017	[A34, A26]
		• *Active matter with position-dependent motility*	2016	[A30]
		• *Correlation functions for active matter*	2019-Now	[A19, S3]
		• *Collective guiding of active colloidal particles for medical applications*	2020-2022	[A5]
50.	**Julien Tailleur**	Paris Diderot University, France	Physics	Theory
		• *Pressure and phase equilibria of active matter*	2015	[A32]
51.	**Daisuke Takagi**	University of Hawaii at Manoa, USA	Physics	Theory
		• *Hydrodynamics of artificial microswimmers*	2014-2015	[A35, A33]
52.	**Mitsusuke Tarama**	Kyoto University, Japan	Physics	Theory
		• *Dynamics of a deformable active colloidal particle in shear flow*	2013	[A39]
53.	**György Tegze**	Wigner Research Centre for Physics, Budapest, Hungary	Physics	Theory
		• *Phase-field-crystal models*	2012	[Rr3]
54.	**Borge ten Hagen**	University of Twente, Netherlands	Physics	Theory
		• *Dynamics of a rigid active colloidal particle in shear flow*	2011	[A47]
		• *Dynamics of a deformable active colloidal particle in shear flow*	2013	[A39]

		• *Brownian motion and hydrodynamic resistance matrix of arbitrarily shaped colloidal particles*	2013	[A38]
		• *Dynamics of an active colloidal particle with biaxial shape*	2013-2015	[A42, A36, A35, A33]
		• *Dynamics of an active colloidal particle with biaxial shape under gravity*	2014	[A35]
		• *Dynamics of mass-anisotropic active colloidal particles*	2017	[A27]
55.	**Uwe Thiele**	University of Münster, Germany	Physics	Theory
		• *Phase-field-crystal models, stability and bifurcation analysis*	2017-2022	[A1]
		• *Relation of active matter and quantum matter*	2021-2022	[E2]
		• *Application of machine learning to nonlinear dynamics*	2021-Now	
56.	**Adriano Tiribocchi**	University of Edinburgh, UK	Physics	Theory
		• *Collective dynamics of active Brownian particles*	2014	[A37]
		• *Collective dynamics of suspensions of active colloidal particles*	2015	[A31]
57.	**Gyula I. Tóth**	Loughborough University, UK	Physics	Theory
		• *Phase-field-crystal models*	2012	[Rr3]
		• *Wigner functions with spontaneous collapse and their relation to thermodynamic irreversibility*	2020-2021	[A12]
58.	**Axel Voigt**	Technical University Dresden, Germany	Mathematics	Theory
		• *Phase-field-crystal models for colloidal liquid crystals and active colloidal particles*	2013, 2018	[A41, A24]
		• *Active colloidal crystals on a spherical manifold*	2018	[A24]

		• *Topological fine structure in three-dimensional smectic liquid crystals*	2021-2022	[A4]
59.	**Giovanni Volpe**	University of Stuttgart, Germany	Physics	Experiment
		• *Active colloidal particles with biaxial shapes*	2013-2014	[A42, A36]
60.	**Bart E. Vos**	University of Münster, Germany	Biology	Experiment
		• *Collective migration and invasion of cancer cells*	2019-2021	[A9]
61.	**Henricus H. Wensink**	Paris-Sud University, France	Physics	Theory
		• *Rigid colloidal particles with various shapes in confinement*	2013	[Rr2]
62.	**Michael Wilczek**	University of Bayreuth, Germany	Physics	Theory
		• *Turbulence*	2021-Now	
63.	**René Wittmann**	University of Düsseldorf, Germany	Physics	Theory
		• *Topological fine structure in three-dimensional smectic liquid crystals*	2021-2022	[A4]
64.	**Urs Zimmermann**	University of Düsseldorf, Germany	Physics	Theory
		• *Rigid colloidal particles with various shapes in confinement*	2013	[Rr2]