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Key publications

Year of publication 2019

Simon C*, Kusters R*, Caorsi V*, Allard A, Abou-Ghali M, Manzi J, Di Cicco A, Lévy D, Lenz M, Joanny J-F, Campillo C, Plastino J, Sens P*, Sykes C* (2019 Mar 18)

Actin dynamics drive cell-like membrane deformation

Nature Physics : [DOI : 10.1038/s41567-019-0464-1](https://doi.org/10.1038/s41567-019-0464-1)

Year of publication 2018

Duclos G., Blanch-Mercader C., Yashunsky V., Salbreux G., Joanny J.-F., Prost J., Silberzan P. (2018 Oct 3)

Spontaneous shear flow in confined cellular nematics

Nature Physics : [DOI : 10.1038/s41567-018-0099-7](https://doi.org/10.1038/s41567-018-0099-7)

Year of publication 2017

Duclos G., Erlenkämper C., Joanny J.-F., Silberzan P. (2016 Sep 12)

Topological defects in confined populations of spindle-shaped cells

Nature Physics : 13 : 58-62 : [DOI : 10.1038/nphys3876](https://doi.org/10.1038/nphys3876)

Year of publication 2015

Simon Garcia, Edouard Hannezo, Jens Elgeti, Jean-François Joanny, Pascal Silberzan, Nir S Gov (2015 Dec 1)

Physics of active jamming during collective cellular motion in a monolayer.

Proceedings of the National Academy of Sciences of the United States of America : 15314-9 : [DOI : 10.1073/pnas.1510973112](https://doi.org/10.1073/pnas.1510973112)

Year of publication 2014

Morgan Delarue, Jean-François Joanny, Frank Jülicher, Jacques Prost (2014 Dec 9)

Stress distributions and cell flows in a growing cell aggregate.

Interface focus : 20140033 : [DOI : 10.1098/rsfs.2014.0033](https://doi.org/10.1098/rsfs.2014.0033)

Volker Bormuth, Jérémie Barral, Jean-François Joanny, Frank Jülicher, Pascal Martin (2014 May 5)

Transduction channels' gating can control friction on vibrating hair-cell bundles in the ear.

Proceedings of the National Academy of Sciences of the United States of America : 7185-90 : [DOI : 10.1073/pnas.1402556111](https://doi.org/10.1073/pnas.1402556111)

Morgan Delarue, Fabien Montel, Danijela Vignjevic, Jacques Prost, Jean-François Joanny, Giovanni Cappello (2014 Apr 2)

Compressive stress inhibits proliferation in tumor spheroids through a volume limitation.

Biophysical journal : 1821-8 : [DOI : 10.1016/j.bpj.2014.08.031](https://doi.org/10.1016/j.bpj.2014.08.031)

Year of publication 2013

Edouard Hannezo, Jacques Prost, Jean-François Joanny (2013 Dec 23)

Theory of epithelial sheet morphology in three dimensions.

Proceedings of the National Academy of Sciences of the United States of America : 27-32 : [DOI : 10.1073/pnas.1312076111](https://doi.org/10.1073/pnas.1312076111)

Hervé Turlier, Basile Audoly, Jacques Prost, Jean-François Joanny (2013 Sep 10)

Furrow constriction in animal cell cytokinesis.

Biophysical journal : 114-23 : [DOI : 10.1016/j.bpj.2013.11.014](https://doi.org/10.1016/j.bpj.2013.11.014)

Year of publication 2011

Fabien Montel, Morgan Delarue, Jens Elgeti, Laurent Malaquin, Markus Basan, Thomas Risler, Bernard Cabane, Danijela Vignjevic, Jacques Prost, Giovanni Cappello, Jean-François Joanny (2011 Mar 3)

Stress clamp experiments on multicellular tumor spheroids.

Physical review letters : 188102

Year of publication 2009

P-Y Plaças, M Balland, T Guérin, J-F Joanny, P Martin (2009 Jun 23)

Spontaneous oscillations of a minimal actomyosin system under elastic loading.

Physical review letters : 158102



Team Members

Physical Approach of Biological Problems

Benoit Sorre, Andrew Callan-Jones, Jean-Baptiste Manneville, Pierre Nassoy, Jean-François Joanny, Jacques Prost, Bruno Goud, Patricia Bassereau (2009 Mar 24)

Curvature-driven lipid sorting needs proximity to a demixing point and is aided by proteins.

Proceedings of the National Academy of Sciences of the United States of America : 5622-6 : [DOI : 10.1073/pnas.0811243106](https://doi.org/10.1073/pnas.0811243106)

M D El Alaoui Faris, D Lacoste, J Pécrcéaux, J-F Joanny, J Prost, P Bassereau (2009 Mar 5)

Membrane tension lowering induced by protein activity.

Physical review letters : 038102 : [DOI : 10.1103/PhysRevLett.102.038102](https://doi.org/10.1103/PhysRevLett.102.038102)