

## INTERNATIONAL REFEREED JOURNALS

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Corresponding authorship is denoted by a \*

- 52.\* McKenzie, Rebecca E, Emma M Keizer, Jochem N A Vink, Jasper van Lopik, Vera Kalkman, Christian Fleck, Sander J Tans, and Stan J J Brouns.  
'Single Cell Variability of CRISPR-Cas Interference and Adaptation'  
*Accepted for publication in Molecular Systems Biology*
51. Autran, Daphné, George W. Bassel, Eunyoung Chae, Daphne Ezer, Ali Ferjani, Christian Fleck, Olivier Hamant, et al.  
'What Is Quantitative Plant Biology?'  
*Quantitative Plant Biology* 2 (2021): e10.
50. Rik Peter van Rosmalen, Robert W. Smith, Vitor AP Martins dos Santos, Christian Fleck, Maria Suarez-Diez  
Model Reduction of Genome-Scale Metabolic Models as a Basis for Targeted Kinetic Models  
*Metabolic Engineering*, S1096717621000161 (2021).
- 49.\* Rachappa Balkunde, Anna Deneer, Stefanie Herbert, Martina Pesch, Benjamin Jägle, Christian Fleck, Martin Hülkamp  
Complex changes in trichome patterning can be explained by reduced interaction of TTG1 with GL3  
*Cell Reports* 33, no. 11 (2020): 108497)
48. Maria Ada Prusicki, Emma Mathilde Keizer, Rik Peter van Rosmalen, Christian Fleck, and Arp Schnittger  
Live cell imaging in Arabidopsis by a landmark-based system  
*Bio-protocol* 10(9): e3611. DOI: 10.21769/BioProtoc.3611 (2020)
- 47.\* Smith, Robert W., and Christian Fleck.  
'Basic Phytochrome B Calculations'.  
In *Phytochromes*, edited by Andreas Hiltbrunner, *Methods in Molecular Biology*. New York, NY: Springer New York, 2019.
- 46.\* Emma M. Keizer, Bjoern Bastian, Robert W. Smith, Ramon Grima, and Christian Fleck  
Extending the linear-noise approximation to biochemical systems influenced by intrinsic noise and lognormal distributed extrinsic noise  
*Phys. Rev. E* 99, 052417-20 (2019)
45. O. Sascha Yousefi, Matthias Günther, Maximilian Hoerner, Julia Chalupsky, Maximilian Wess, Simon M. Brandl, Robert W. Smith, Christian Fleck, Tim Kunkel, Matias D. Zurbriggen, Thomas Hoefer, Wilfried Weber, and Wolfgang W.A. Schamel  
Optogenetic control shows that kinetic proofreading regulates the activity of the T cell receptor  
*eLife* 8, 301 (2019)
- 44.\* Maria Ada Prusicki, Emma Mathilde Keizer, Rik Peter van Rosmalen, Shinichiro Komaki, Felix Seifert, Katja Müller, Erik Wijnker, Christian Fleck, and Arp Schnittger  
Live cell imaging of meiosis in *Arabidopsis thaliana*  
*eLife* 8, 141 (2019)
43. Divykriti Chopra, Mona Mapar, Lisa Stephan, Maria Albani, Anna Deneer, George Coupland, Eva-Maria Willing, Swen Schellmann, Korbinian Schneeberger, Christian Fleck, Andrea Schrader, Martin Hülkamp  
Genetic and molecular analysis of trichome development in *Arabis alpina*  
*Proc Natl Acad Sci USA* 116, 12078–12083 (2019)
- 42.\* R Sellaro, RW Smith, M Legris, C Fleck, JJ Casal  
Phytochrome B dynamics departs from photoequilibrium in the field  
*Plant, Cell and Environment* 11, 2530–12 (2018)
- 41.\* Robert W Smith, Rik P van Rosmalen, Vitor AP Martins dos Santos, and Christian Fleck  
DMPy: A Python package for automated mathematical model construction of large-scale metabolic system  
*BMC Systems Biology* 12, 628–16 (2018).

- 40.\* Ramon Grima, Sebastian Sonntag, Filippo Venezia, Robert W Smith, Stefan Kircher, Christian Fleck  
Insight into nuclear body formation of phytochromes through stochastic modelling and experiment  
*Physical biology* 15, 056003-8 (2018).
- 39.\* Alistair M. Middleton, Cristina Dal Bosco, Phillip Chlap, Robert Bensch, Hartmann Harz, Fugang Ren, Sabrina Wend, Wilfried Weber, Kenichiro Hayashi, Matias D. Zurbriggen, Rainer Uhl, Olaf Ronneberger, Klaus Palme, Christian Fleck, Alexander Dovzhenko  
Data-driven modelling indicates that the endoplasmic reticulum acts as a gatekeeper to control nuclear auxin uptake.  
*Cell Reports* 22, 3044–3057 (2018)
- 38.\* Ilka Schultheiß-Araújo, Jessica Magdalena Pietsch, Emma Mathilde Keizer, Bettina Greese, Rachappa Balkunde, Christian Fleck, Martin Hülskamp  
Stochastic gene expression in *Arabidopsis thaliana*  
*Nature Communications* 8, 420–9 (2017)
- 37.\* Robert W. Smith, Bob van Sluijs, Christian Fleck  
Designing Synthetic Networks *in silico*: A Generalised Evolutionary Algorithm Approach.  
*BMC Systems Biology* 11, 824–19 (2017)
- 36.\* Robert W. Smith, Britta Helwig, Adrie H. Westphal, Jan Willem Borst, Christian Fleck  
Interactions Between phyB and PIF Proteins Alter Thermal Reversion Reactions *in vitro*.  
*Photochem. Photobiol.* 65, 2859–7 (2017).
- 35.\* Robert W. Smith, Eran Pel, Adrie H. Westphal, Sophia L. Samodelov, Matias D. Zurbriggen, Jan Willem Borst, Christian Fleck  
Unearthing the light-regulated transition rates of photoreceptors  
*BMC Systems Biology* 10, 110 (2016).
34. Marija Cvijovic et al.  
Strategies for structuring interdisciplinary education in Systems Biology – An European perspective.  
*Syst. Biol. Appl.* 2, 16011–7 (2016).
- 33.\* Milad Adibi , Saiko Yoshida , Dolf Weijers , Christian Fleck  
Centering the Organizing Center in the *Arabidopsis thaliana* Shoot Apical Meristem by a Combination of Cytokinin Signaling and Self-Organization  
*PLoS ONE*, 11(2): e0147830 (2016)
- 32.\* Klose, C. et al. A systematic analysis of how phytochrome B dimerization determines its specificity.  
*Nature Plants*, 15090 (2015)
- 31.\* Thomas, P., Fleck, C., Grima, R. & Popović, N. System size expansion using Feynman rules and diagrams. *J. Phys. A: Math. Theor.* 47, 455007 (2014).
30. Middleton, A. M., Fleck, C. & Grima, R. A continuum approximation to an off-lattice individual-cell based model of cell migration and adhesion. *J Theor Biol* 359, 220–232 (2014).
- 29.\* Córdoba-Valdés, F., Castañeda-Priego, R., Timmer, J. & Fleck, C. The ratio of the lateral correlation length and particle radius determines the density profile of spherical molecules near a fluctuating membrane. *Soft Matter*, c4sm01550a (2014).
- 28.\* Eierhoff, T. et al. A lipid zipper triggers bacterial invasion. *Proc Natl Acad Sci USA* 111, 12895–12900 (2014).
- 27.\* De Rybel, B. et al. Integration of growth and patterning during vascular tissue formation in *Arabidopsis*. *Science* 345, 1255215–1255215 (2014).
- 26.\* Possart, A., Fleck, C. & Hiltbrunner, A. Shedding (far-red) light on phytochrome mechanisms and responses in land plants. *Plant Science* 217-218, 36–46 (2014).
- 25.\* Greese, B., Hülskamp, M. & Fleck, C. Quantification of variability in trichome patterns. *Front. Plant Sci.* 5, 596 (2014).
24. Eierhoff, T. et al. Glycosphingolipid-driven cellular invasion of *Pseudomonas aeruginosa*. *Int. J. Med. Microbiology*, 303, 70 (2013)

23. Thomas, P., Straube, A. V., Timmer, J., Fleck, C. & Grima, R. Signatures of nonlinearity in single cell noise-induced oscillations. *J Theor Biol*, j.jtbi.2013.06.021 (2013)
- 22.\* Greese, B. et al. Influence of cell-to-cell variability on spatial pattern formation. *IET Syst Biol* 6, 143–153 (2012).
- 21.\* Rausenberger, J. et al. Photoconversion and Nuclear Trafficking Cycles Determine Phytochrome A's Response Profile to Far-Red Light. *Cell* 146, 813–825 (2011).
20. Santos, F. et al. Modelling polar auxin transport in developmental patterning. *Plant Biol* 12 Suppl 1, 3–14 (2010).
- 19.\* Rausenberger, J. et al. An integrative model for phytochrome B mediated photomorphogenesis: from protein dynamics to physiology. *PLoS ONE* 5, e10721 (2010).
18. Wester, K. et al. Functional diversity of R3 single-repeat genes in trichome development. *Development* 136, 1487–1496 (2009).
17. Bensch, R. et al. Image analysis of arabidopsis trichome patterning in 4D confocal datasets. *Biomedical Imaging: From Nano to Macro, 2009. ISBI'09. IEEE International Symposium on* 742–745 (2009).
- 16.\* Gerstung, M., Timmer, J. & Fleck, C. Noisy signaling through promoter logic gates. *Phys. Rev. E* 79, 11 (2009).
15. Rausenberger, J., Fleck, C., Timmer, J. & Kollmann, M. Signatures of gene expression noise in cellular systems. *Prog Biophys Mol Biol* 100, 57–66 (2009).
- 14.\* Bouyer, D. et al. Two-dimensional patterning by a trapping/depletion mechanism: the role of TTG1 and GL3 in Arabidopsis trichome formation. *PLoS Biol* 6, e141 (2008).
- 13.\* Balsa-Canto, E., Peifer, M., Banga, J., Timmer, J. & Fleck, C. Hybrid optimization method with general switching strategy for parameter estimation. *BMC Systems Biology* (2008).
- 12.\* Digiuni, S. et al. A competitive complex formation mechanism underlies trichome patterning on Arabidopsis leaves. *Mol Syst Biol* 4, 217 (2008).
- 11.\* Geier, F. et al. A quantitative and dynamic model for plant stem cell regulation. *PLoS ONE* 3, e3553 (2008).
- 10.\* Geier, F., Timmer, J. & Fleck, C. Reconstructing gene-regulatory networks from time series, knock-out data, and prior knowledge. *BMC Systems Biology* (2007).
9. Anastasiou, E., Kenz, S., Gerstung, MacLean, D., Timmer, J., Fleck, C. & Lenhard, M. Control of Plant Organ Size by KLUH/CYP78A5-Dependent Intercellular Signaling. *Dev Cell* (2007).
- 8.\* Cordoba-Valdes, F., Fleck, C. & Castaneda-Priego, R. Hard-colloidal particles in contact with fluctuating membranes. *INVESTIGACION* (2007).
7. Fleck, C. & Netz, R. Surfaces with quenched and annealed disordered charge distributions. *The European Physical Journal E-Soft Matter* 22, 261–273 (2007).
6. Fleck, C. & Netz, R. Counterions at disordered charged planar surfaces. *Europhysics Letters* (2005).
5. Fleck, C. & Netz, R. Counterion density profiles at charged flexible membranes. *Phys Rev Lett* (2005).
4. Fleck, C. & Netz, R. Electrostatic colloid-membrane binding. *Europhysics Letters* (2004).
3. Meier-Koll, A. & Fleck, C. The counterion-release interaction. *Journal of Physics* (2004).
2. Fleck, C., Netz, R. & Grünberg, von, H. Poisson-Boltzmann Theory for Membranes with Mobile Charged Lipids and the pH-Dependent Interaction *Biophys J* (2002).
1. Fleck, C. & Grünberg, von, H. Counterion evaporation. *Phys. Rev. E* (2001).

Several publications have received additional attention by the publisher. Recommended Paper by the **Faculty of 1000**:

- O. Sascha Yousefi, et al. Optogenetic control shows that kinetic proofreading regulates the activity of the T cell receptor  
*eLife* 8, 301 (2019)

- De Rybel, B. *et al.* Integration of growth and patterning during vascular tissue formation in *Arabidopsis*. *Science* 345, 1255215–1255215 (2014).
- Middleton, A. M., Fleck, C. & Grima, R. A continuum approximation to an off-lattice individual-cell based model of cell migration and adhesion. *J Theor Biol* 359, 220–232 (2014).
- Eierhoff, T. *et al.* A lipid zipper triggers bacterial invasion. *Proc Natl Acad Sci USA* 111, 12895–12900 (2014).
- Rausenberger, J. *et al.* Photoconversion and Nuclear Trafficking Cycles Determine Phytochrome A's Response Profile to Far-Red Light. *Cell* 146, 813–825 (2011).
- Bouyer, D. *et al.* Two-dimensional patterning by a trapping/depletion mechanism: the role of TTG1 and GL3 in *Arabidopsis* trichome formation. *PLoS Biol* 6, e141 (2008).
- Digiuni, S. *et al.* A competitive complex formation mechanism underlies trichome patterning on *Arabidopsis* leaves. *Mol Syst Biol* 4, 217 (2008).
- Gerstung, MacLean, D., Timmer, J., Fleck, C. & Lenhard, M. Control of Plant Organ Size by KLUH/CYP78A5-Dependent Intercellular Signaling. *Dev Cell* (2007).

## NATIONAL JOURNALS

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J. Rausenberger, E. Schäfer, J. Timmer, A. Hiltbrunner and C. Fleck.  
Evolutionary adaptation to living in the shade. *Systembiologie.de. The Magazine for Systems Biology Research in Germany* (2012)

## BOOKS, OR CONTRIBUTIONS TO BOOKS

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Robert Smith, Christian Fleck: *Derivation and use of mathematical models in Systems Biology*.  
Pollen Tip Growth - From Biophysical Aspects to System Biology. Springer Nature, 2017.

Robert Smith, Christian Fleck: *Basic Phytochrome B Calculations*  
Phytochromes: Methods and Protocols; Series in Methods in Molecular Biology, Springer Nature, 2019.

Anna Deneer, Christian Fleck: *Mathematical Modelling in Plant Synthetic Biology*.  
Plant Synthetic Biology, Lab protocol series Methods in Molecular Biology  
to be published by Springer Nature (2022)