olivier Hamant

List of Publications by Year
in descending order

100 papers	8,253 citations	57758 44 h-index	53230 85 g-index
115 all docs	115 docs citations	115 times ranked	6093 citing authors

#	ARTICLE	IF	CITATIONS
1	Developmental Patterning by Mechanical Signals in <i>Arabidopsis</i>. Science, 2008, 322, 1650-1655.	12.6	795
2	FibrilTool, an ImageJ plug-in to quantify fibrillar structures in raw microscopy images. Nature Protocols, 2014, 9, 457-463.	12.0	470
3	Mechanical Stress Acts via Katanin to Amplify Differences in Growth Rate between Adjacent Cells in Arabidopsis. Cell, 2012, 149, 439-451.	28.9	418
4	Alignment between PIN1 Polarity and Microtubule Orientation in the Shoot Apical Meristem Reveals a Tight Coupling between Morphogenesis and Auxin Transport. PLoS Biology, 2010, 8, e1000516.	5.6	392
5	Subcellular and supracellular mechanical stress prescribes cytoskeleton behavior in Arabidopsis cotyledon pavement cells. ELife, 2014, 3, e01967.	6.0	323
6	Why plants make puzzle cells, and how their shape emerges. ELife, 2018, 7, .	6.0	208
7	Are microtubules tension sensors?. Nature Communications, 2019, 10, 2360.	12.8	191
8	A Mechanical Feedback Restricts Sepal Growth and Shape in Arabidopsis. Current Biology, 2016, 26, 1019-1028.	3.9	187
9	<i>Inâ€ƒvivo</i> analysis of local wall stiffness at the shoot apical meristem in Arabidopsis using atomic force microscopy. Plant Journal, 2011, 67, 1116-1123.	5.7	186
10	KNAT6: An Arabidopsis Homeobox Gene Involved in Meristem Activity and Organ Separation. Plant Cell, 2006, 18, 1900-1907.	6.6	183
11	Cell division plane orientation based on tensile stress in<i>Arabidopsis thaliana</i>. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E4294-303.	7.1	175
12	The mechanics behind plant development. New Phytologist, 2010, 185, 369-385.	7.3	169
13	GENETICS OF MEIOTIC PROPHASE I IN PLANTS. Annual Review of Plant Biology, 2006, 57, 267-302.	18.7	166
14	Variable Cell Growth Yields Reproducible Organ Development through Spatiotemporal Averaging. Developmental Cell, 2016, 38, 15-32.	7.0	165
15	An Auxin-Mediated Shift toward Growth Isotropy Promotes Organ Formation at the Shoot Meristem in Arabidopsis. Current Biology, 2014, 24, 2335-2342.	3.9	161
16	Alleles of<i>afd1</i>dissect REC8 functions during meiotic prophase I. Journal of Cell Science, 2006, 119, 3306-3315.	2.0	159
17	The Role of Mechanical Forces in Plant Morphogenesis. Annual Review of Plant Biology, 2011, 62, 365-385.	18.7	153
18	How mechanical stress controls microtubule behavior and morphogenesis in plants: history, experiments and revisited theories. Plant Journal, 2013, 75, 324-338.	5.7	139

#	ARTICLE	IF	CITATIONS
19	Mechanical stress contributes to the expression of the STM homeobox gene in Arabidopsis shoot meristems. ELife, 2015, 4, e07811.	6.0	137
20	Life behind the wall: sensing mechanical cues in plants. BMC Biology, 2017, 15, 59.	3.8	136
21	Mechanochemical Polarization of Contiguous Cell Walls Shapes Plant Pavement Cells. Developmental Cell, 2017, 43, 290-304.e4.	7.0	132
22	Plant development: A TALE story. Comptes Rendus - Biologies, 2010, 333, 371-381.	0.2	127
23	<i>KNAT2</i>. Plant Cell, 2001, 13, 1719-1734.	6.6	124
24	Maize AMEIOTIC1 is essential for multiple early meiotic processes and likely required for the initiation of meiosis. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 3603-3608.	7.1	113
25	A Computational Framework for 3D Mechanical Modeling of Plant Morphogenesis with Cellular Resolution. PLoS Computational Biology, 2015, 11, e1003950.	3.2	110
26	A tension-adhesion feedback loop in plant epidermis. ELife, 2018, 7, .	6.0	110
27	An epidermis-driven mechanism positions and scales stem cell niches in plants. Science Advances, 2016, 2, e1500989.	10.3	109
28	Turning a plant tissue into a living cell froth through isotropic growth. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 8453-8458.	7.1	107
29	Cracking the elusive alignment hypothesis: the microtubuleâ€“cellulose synthase nexus unraveled. Trends in Plant Science, 2012, 17, 666-674.	8.8	106
30	A REC8-Dependent Plant Shugoshin Is Required for Maintenance of Centromeric Cohesion during Meiosis and Has No Mitotic Functions. Current Biology, 2005, 15, 948-954.	3.9	99
31	The KNAT2 Homeodomain Protein Interacts with Ethylene and Cytokinin Signaling. Plant Physiology, 2002, 130, 657-665.	4.8	90
32	The mechanics behind cell polarity. Trends in Cell Biology, 2012, 22, 584-591.	7.9	81
33	Mechanical Shielding of Rapidly Growing Cells Buffers Growth Heterogeneity and Contributes to Organ Shape Reproducibility. Current Biology, 2017, 27, 3468-3479.e4.	3.9	77
34	Global Topological Order Emerges through Local Mechanical Control of Cell Divisions in the Arabidopsis Shoot Apical Meristem. Cell Systems, 2019, 8, 53-65.e3.	6.2	74
35	How do plants read their own shapes?. New Phytologist, 2016, 212, 333-337.	7.3	73
36	How Mechanical Forces Shape Plant Organs. Current Biology, 2021, 31, R143-R159.	3.9	73

#	ARTICLE	IF	CITATIONS
37	Heterogeneity and Robustness in Plant Morphogenesis: From Cells to Organs. Annual Review of Plant Biology, 2018, 69, 469-495.	18.7	72
38	A mechanosensitive Ca2+ channel activity is dependent on the developmental regulator DEK1. Nature Communications, 2017, 8, 1009.	12.8	70
39	The self-organization of plant microtubules inside the cell volume yields their cortical localization, stable alignment, and sensitivity to external cues. PLoS Computational Biology, 2018, 14, e1006011.	3.2	67
40	Mechanically, the Shoot Apical Meristem of Arabidopsis Behaves like a Shell Inflated by a Pressure of About 1 MPa. Frontiers in Plant Science, 2015, 6, 1038.	3.6	59
41	Matching Patterns of Gene Expression to Mechanical Stiffness at Cell Resolution through Quantitative Tandem Epifluorescence and Nanoindentation Â Â Â. Plant Physiology, 2014, 165, 1399-1408.	4.8	53
42	Regulatory Role of Cell Division Rules on Tissue Growth Heterogeneity. Frontiers in Plant Science, 2012, 3, 174.	3.6	51
43	Impaired Cellulose Synthase Guidance Leads to Stem Torsion and Twists Phyllotactic Patterns in Arabidopsis. Current Biology, 2013, 23, 895-900.	3.9	50
44	Plant science and agricultural productivity: Why are we hitting the yield ceiling?. Plant Science, 2013, 210, 159-176.	3.6	49
45	Organogenesis from stem cells in planta: multiple feedback loops integrating molecular and mechanical signals. Cellular and Molecular Life Sciences, 2011, 68, 2885-2906.	5.4	48
46	Widespread mechanosensing controls the structure behind the architecture in plants. Current Opinion in Plant Biology, 2013, 16, 654-660.	7.1	48
47	Cortical tension overrides geometrical cues to orient microtubules in confined protoplasts. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 32731-32738.	7.1	48
48	Robust organ size requires robust timing of initiation orchestrated by focused auxin and cytokinin signalling. Nature Plants, 2020, 6, 686-698.	9.3	48
49	Meristem size contributes to the robustness of phyllotaxis in Arabidopsis. Journal of Experimental Botany, 2015, 66, 1317-1324.	4.8	47
50	A correlative microscopy approach relates microtubule behaviour, local organ geometry, and cell growth at the Arabidopsis shoot apical meristem. Journal of Experimental Botany, 2013, 64, 5753-5767.	4.8	45
51	What is quantitative plant biology?. Quantitative Plant Biology, 2021, 2, .	2.0	43
52	Mechanochemical feedback mediates tissue bending required for seedling emergence. Current Biology, 2021, 31, 1154-1164.e3.	3.9	43
53	The impact of mechanical compression on cortical microtubules in Arabidopsis: a quantitative pipeline. Plant Journal, 2016, 88, 328-342.	5.7	42
54	Regulation of shape and patterning in plant development. Current Opinion in Genetics and Development, 2010, 20, 454-459.	3.3	41

#	Article	IF	Citations
55	ImageJ SurfCut: a user-friendly pipeline for high-throughput extraction of cell contours from 3D image stacks. BMC Biology, 2019, 17, 38.	3.8	41
56	Microtubule Response to Tensile Stress Is Curbed by NEK6 to Buffer Growth Variation in the Arabidopsis Hypocotyl. Current Biology, 2020, 30, 1491-1503.e2.	3.9	39
57	Fluctuations shape plants through proprioception. Science, 2021, 372, .	12.6	38
58	A phosphoinositide map at the shoot apical meristem in Arabidopsis thaliana. BMC Biology, 2018, 16, 20.	3.8	34
59	Integrating physical stress, growth, and development. Current Opinion in Plant Biology, 2010, 13, 46-52.	7.1	33
60	FERONIA and microtubules independently contribute to mechanical integrity in the Arabidopsis shoot. PLoS Biology, 2021, 19, e3001454.	5.6	32
61	Developing a â€˜thick skinâ€™: a paradoxical role for mechanical tension in maintaining epidermal integrity?. Development (Cambridge), 2016, 143, 3249-3258.	2.5	30
62	Time-Lapse Imaging of Developing Meristems Using Confocal Laser Scanning Microscope. Methods in Molecular Biology, 2014, 1080, 111-119.	0.9	29
63	External Mechanical Cues Reveal a Katanin-Independent Mechanism behind Auxin-Mediated Tissue Bending in Plants. Developmental Cell, 2021, 56, 67-80.e3.	7.0	29
64	Inducible depletion of PI(4,5)P2 by the synthetic iDePP system in Arabidopsis. Nature Plants, 2021, 7, 587-597.	9.3	29
65	Flowering Plants in the Anthropocene: A Political Agenda. Trends in Plant Science, 2020, 25, 349-368.	8.8	28
66	Fifteen compelling open questions in plant cell biology. Plant Cell, 2022, 34, 72-102.	6.6	27
67	Mechanical Shielding in Plant Nuclei. Current Biology, 2020, 30, 2013-2025.e3.	3.9	26
68	Interplay between miRNA regulation and mechanical stress for<i>CUC</i>gene expression at the shoot apical meristem. Plant Signaling and Behavior, 2016, 11, e1127497.	2.4	24
69	Clones of cells switch from reduction to enhancement of size variability in <i>Arabidopsis</i> sepals. Development (Cambridge), 2017, 144, 4398-4405.	2.5	24
70	Organ geometry channels reproductive cell fate in the Arabidopsis ovule primordium. ELife, 2021, 10, .	6.0	24
71	The mechanics behind cell division. Current Opinion in Plant Biology, 2013, 16, 774-779.	7.1	23
72	Looking beyond the gene network â€“ metabolic and mechanical cell drivers of leaf morphogenesis. Journal of Cell Science, 2022, 135, .	2.0	22

#	Article	IF	Citations
73	Tissue folding at the organâ€"meristem boundary results in nuclear compression and chromatin compaction. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	19
74	The RNA Polymerase-Associated Factor 1 Complex Is Required for Plant Touch Responses. Journal of Experimental Botany, 2017, 68, erw439.	4.8	18
75	Mechanical Asymmetry of the Cell Wall Predicts Changes in Pavement Cell Geometry. Developmental Cell, 2019, 50, 9-10.	7.0	18
76	Phyllotactic regularity requires the Paf1 complex in Arabidopsis. Development (Cambridge), 2017, 144, 4428-4436.	2.5	16
77	Nuclear envelope: a new frontier in plant mechanosensing?. Biophysical Reviews, 2017, 9, 389-403.	3.2	16
78	Plant cell walls as mechanical signaling hubs for morphogenesis. Current Biology, 2022, 32, R334-R340.	3.9	16
79	Is cell polarity under mechanical control in plants?. Plant Signaling and Behavior, 2011, 6, 137-139.	2.4	15
80	Plant scientists canâ€™t ignore Jevons paradox anymore. Nature Plants, 2020, 6, 720-722.	9.3	15
81	Time-Lapse Imaging of Developing Shoot Meristems Using A Confocal Laser Scanning Microscope. Methods in Molecular Biology, 2019, 1992, 257-268.	0.9	14
82	Is the plant nucleus a mechanical rheostat?. Current Opinion in Plant Biology, 2020, 57, 155-163.	7.1	13
83	Does resource availability help determine the evolutionary route to multicellularity?. Evolution & Development, 2019, 21, 115-119.	2.0	12
84	Mechanical Conflicts in Twisting Growth Revealed by Cell-Cell Adhesion Defects. Frontiers in Plant Science, 2019, 10, 173.	3.6	12
85	The contribution of mechanosensing to epidermal cell fate specification. Current Opinion in Genetics and Development, 2018, 51, 52-58.	3.3	11
86	Paf1c defects challenge the robustness of flower meristem termination in<i>Arabidopsis thaliana</i>. Development (Cambridge), 2019, 146, .	2.5	11
87	Microtubule self-organisation during seed germination in Arabidopsis. BMC Biology, 2020, 18, 44.	3.8	10
88	Stem integrity in<i>Arabidopsis thaliana</i>requires a load-bearing epidermis. Development (Cambridge), 2021, 148, .	2.5	9
89	From genes to shape: Understanding the control of morphogenesis at the shoot meristem in higher plants using systems biology. Comptes Rendus - Biologies, 2009, 332, 974-985.	0.2	7
90	Mechano-devo. Mechanisms of Development, 2017, 145, 2-9.	1.7	6

#	Article	IF	Citations
91	How humans may co-exist with Earth? The case for suboptimal systems. Anthropocene, 2020, 30, 100245.	3.3	6
92	Statistical Properties of Cell Topology and Geometry in a Tissue-Growth Model. Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, 2009, , 971-979.	0.3	5
93	Integrative Cell Biology: Katanin at the Crossroads. Current Biology, 2013, 23, R206-R208.	3.9	3
94	The plasma membrane as a mechanotransducer in plants. Comptes Rendus - Biologies, 2021, 344, 389-407.	0.2	3
95	Quantitative imaging strategies pave the way for testable biological concepts. BMC Biology, 2011, 9, 10.	3.8	2
96	Cell Biology: Cytoskeleton Network Topology Feeds Back on Its Regulation. Current Biology, 2013, 23, R963-R965.	3.9	2
97	An Image Analysis Pipeline to Quantify Emerging Cracks in Materials or Adhesion Defects in Living Tissues. Bio-protocol, 2018, 8, e3036.	0.4	2
98	Meristem Biology Flourishes Under Mt. Tai. Molecular Plant, 2016, 9, 1224-1227.	8.3	0
99	Mechanical Conflicts in Growth Heterogeneity. , 2018, , 193-207.		0
100	Yves Couder: Putting mechanics back into the shoot apical meristem. Comptes Rendus - Mecanique, 2020, 348, 679-684.	0.7	0