Mario Nicodemi

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

173 papers	4,907 citations	37 h-index	65 g-index
190 ext. papers	6,054 ext. citations	6.8 avg, IF	5.53 L-index

#	Paper	IF	Citations
173	Complex multi-enhancer contacts captured by genome architecture mapping. *Nature*, **2017**, 543, 519-524	40.4	356
172	Complexity of chromatin folding is captured by the strings and binders switch model. *Proceedings of the National Academy of Sciences of the United States of America*, **2012**, 109, 16173-8	11.5	343
171	Slow relaxation and compaction of granular systems. *Nature Materials*, **2005**, 4, 121-8	27	296
170	Hierarchical folding and reorganization of chromosomes are linked to transcriptional changes in cellular differentiation. *Molecular Systems Biology*, **2015**, 11, 852	12.2	229
169	Universal fluctuations in correlated systems. *Physical Review Letters*, **2000**, 84, 3744-7	7.4	203
168	A Tetris-Like Model for the Compaction of Dry Granular Media. *Physical Review Letters*, **1997**, 79, 1575-1578	7.4	137
167	Frustration and slow dynamics of granular packings. *Physical Review E*, **1997**, 55, 3962-3969	2.4	112
166	Polymer physics predicts the effects of structural variants on chromatin architecture. *Nature Genetics*, **2018**, 50, 662-667	36.3	105
165	Polymer physics of chromosome large-scale 3D organisation. *Scientific Reports*, **2016**, 6, 29775	4.9	99
164	Dynamic 3D chromatin architecture contributes to enhancer specificity and limb morphogenesis. *Nature Genetics*, **2018**, 50, 1463-1473	36.3	95
163	Single-allele chromatin interactions identify regulatory hubs in dynamic compartmentalized domains. *Nature Genetics*, **2018**, 50, 1744-1751	36.3	90
162	Thermodynamic pathways to genome spatial organization in the cell nucleus. *Biophysical Journal*, **2009**, 96, 2168-77	2.9	88
161	Nonequilibrium Chromosome Looping via Molecular Slip Links. *Physical Review Letters*, **2017**, 119, 138101	7.4	81
160	Universality in solar flare and earthquake occurrence. *Physical Review Letters*, **2006**, 96, 051102	7.4	79
159	Models of chromosome structure. *Current Opinion in Cell Biology*, **2014**, 28, 90-5	9	76
158	Preformed chromatin topology assists transcriptional robustness of during limb development. *Proceedings of the National Academy of Sciences of the United States of America*, **2019**, 116, 12390-12399	11.5	72
157	Dynamical Response Functions in Models of Vibrated Granular Media. *Physical Review Letters*, **1999**, 82, 3734-3737	7.4	71

156	Aging in Out-of-Equilibrium Dynamics of Models for Granular Media. *Physical Review Letters*, **1999**, 82, 916-919	7.4	71
155	Thermodynamics and statistical mechanics of dense granular media. *Physical Review Letters*, **2006**, 97, 158001	7.4	66
154	Active and poised promoter states drive folding of the extended HoxB locus in mouse embryonic stem cells. *Nature Structural and Molecular Biology*, **2017**, 24, 515-524	17.6	61
153	Jamming phase diagram for frictional particles. *Physical Review E*, **2011**, 84, 041308	2.4	60
152	Granular species segregation under vertical tapping: effects of size, density, friction, and shaking amplitude. *Physical Review Letters*, **2006**, 96, 058001	7.4	58
151	Symmetry-breaking model for X-chromosome inactivation. *Physical Review Letters*, **2007**, 98, 108104	7.4	55
150	Shear instabilities in granular mixtures. *Physical Review Letters*, **2005**, 94, 188001	7.4	53
149	Single-cell analysis of CD4+ T-cell differentiation reveals three major cell states and progressive acceleration of proliferation. *Genome Biology*, **2016**, 17, 103	18.3	46
148	Recent results on the jamming phase diagram. *Soft Matter*, **2010**, 6, 2871	3.6	46
147	Release of paused RNA polymerase II at specific loci favors DNA double-strand-break formation and promotes cancer translocations. *Nature Genetics*, **2019**, 51, 1011-1023	36.3	43
146	Promoter-proximal CTCF binding promotes distal enhancer-dependent gene activation. *Nature Structural and Molecular Biology*, **2021**, 28, 152-161	17.6	43
145	A statistical mechanics approach to the inherent states of granular media. *Physica A: Statistical Mechanics and Its Applications*, **2001**, 296, 451-459	3.3	41
144	Segregation of granular mixtures in the presence of compaction. *Europhysics Letters*, **1998**, 43, 591-597	1.6	41
143	The compaction in granular media and frustrated Ising models. *Journal of Physics A*, **1997**, 30, L379-L385		39
142	Electrical resistivity tomography and statistical analysis in landslide modelling: A conceptual approach. *Journal of Applied Geophysics*, **2009**, 68, 151-158	1.7	38
141	The glassy transition of the frustrated Ising lattice gas. *Journal of Physics A*, **1997**, 30, L187-L194		38
140	A thermodynamic switch for chromosome colocalization. *Genetics*, **2008**, 179, 717-21	4	38
139	Record dynamics and the observed temperature plateau in the magnetic creep-rate of type-II superconductors. *Physical Review B*, **2005**, 71,	3.3	37

138	Creep of superconducting vortices in the limit of vanishing temperature: a fingerprint of off-equilibrium dynamics. *Physical Review Letters*, **2001**, 86, 4378-81	7.4	37
137	Equilibrium distribution of the inherent states and their dynamics in glassy systems and granular media. *Europhysics Letters*, **2002**, 59, 642-647	1.6	37
136	Equilibrium Properties of the Ising Frustrated Lattice Gas. *Journal De Physique, I*, **1996**, 6, 1143-1152		37
135	Flow, ordering, and jamming of sheared granular suspensions. *Physical Review Letters*, **2008**, 100, 078001	7.4	36
134	Glass transition in granular media. *Europhysics Letters*, **2004**, 66, 531-537	1.6	36
133	Force Correlations and Arch Formation in Granular Assemblies. *Physical Review Letters*, **1998**, 80, 1340-1343	7.4	36
132	Thermodynamics and statistical mechanics of frozen systems in inherent states. *Physical Review E*, **2002**, 66, 061301	2.4	35
131	Predicting chromatin architecture from models of polymer physics. *Chromosome Research*, **2017**, 25, 25-34	4.4	32
130	The jamming transition of granular media. *Journal of Physics Condensed Matter*, **2000**, 12, 6601-6610	1.8	32
129	Segregation in hard-sphere mixtures under gravity. An extension of Edwards approach with two thermodynamical parameters. *Europhysics Letters*, **2002**, 60, 684-690	1.6	31
128	Macroscopic glassy relaxations and microscopic motions in a frustrated lattice gas. *Physical Review E*, **1998**, 57, R39-R42	2.4	30
127	A polymer model explains the complexity of large-scale chromatin folding. *Nucleus*, **2013**, 4, 267-73	3.9	29
126	Challenges and guidelines toward 4D nucleome data and model standards. *Nature Genetics*, **2018**, 50, 1352-1358	36.3	29
125	RNA polymerase II primes Polycomb-repressed developmental genes throughout terminal neuronal differentiation. *Molecular Systems Biology*, **2017**, 13, 946	12.2	27
124	A cellular automaton for the factor of safety field in landslides modeling. *Geophysical Research Letters*, **2006**, 33, n/a-n/a	4.9	27
123	Critical clusters and efficient dynamics for frustrated spin models. *Physical Review Letters*, **1994**, 72, 1541-1544	7.4	27
122	Continuously driven OFC: A simple model of solar flare statistics. *Astronomy and Astrophysics*, **2002**, 387, 326-334	5.1	26
121	Polymer physics indicates chromatin folding variability across single-cells results from state degeneracy in phase separation. *Nature Communications*, **2020**, 11, 3289	17.4	25

120	Conformation regulation of the X chromosome inactivation center: a model. *PLoS Computational Biology*, **2011**, 7, e1002229	5	25
119	Self-assembly and DNA binding of the blocking factor in x chromosome inactivation. *PLoS Computational Biology*, **2007**, 3, e210	5	24
118	Performance of genetic programming to extract the trend in noisy data series. *Physica A: Statistical Mechanics and Its Applications*, **2006**, 370, 104-108	3.3	24
117	A novel approach to simulate gene-environment interactions in complex diseases. *BMC Bioinformatics*, **2010**, 11, 8	3.6	23
116	Ageing and memory phenomena in magnetic and transport properties of vortex matter. *Journal of Physics A*, **2001**, 34, 8425-8443		22
115	Percolation and cluster Monte Carlo dynamics for spin models. *Physical Review E*, **1996**, 54, 175-189	2.4	21
114	Universality in glassy systems. *Journal of Physics Condensed Matter*, **1999**, 11, A167-A174	1.8	20
113	Polymer models of the hierarchical folding of the Hox-B chromosomal locus. *Physical Review E*, **2016**, 94, 042402	2.4	20
112	Molecular Dynamics simulations of the Strings and Binders Switch model of chromatin. *Methods*, **2018**, 142, 81-88	4.6	19
111	Finite driving rate and anisotropy effects in landslide modeling. *Physical Review E*, **2006**, 73, 026123	2.4	19
110	A Dynamic Folded Hairpin Conformation Is Associated with □Globin Activation in Erythroid Cells. *Cell Reports*, **2020**, 30, 2125-2135.e5	10.6	18
109	Mechanics and dynamics of X-chromosome pairing at X inactivation. *PLoS Computational Biology*, **2008**, 4, e1000244	5	18
108	Granular packs under vertical tapping: structure evolution, grain motion, and dynamical heterogeneities. *Physical Review E*, **2007**, 75, 021303	2.4	18
107	A stochastic model dissects cell states in biological transition processes. *Scientific Reports*, **2014**, 4, 3692	4.9	17
106	A model of the large-scale organization of chromatin. *Biochemical Society Transactions*, **2013**, 41, 508-12	5.1	17
105	Off-equilibrium magnetic properties in a model of repulsive particles for vortices in superconductors. *Journal of Physics A*, **2001**, 34, L11-L18		17
104	Dynamically induced effective interaction in periodically driven granular mixtures. *Physical Review Letters*, **2006**, 97, 038001	7.4	16
103	Critical behavior and axis defining symmetry breaking in Hydra embryonic development. *Physical Review Letters*, **2012**, 108, 158103	7.4	15

102	Compaction and force propagation in granular packings. *Physica A: Statistical Mechanics and Its Applications*, **1997**, 240, 405-418	3.3	15
101	Density fluctuations in a model for vibrated granular media. *Physical Review E*, **1999**, 59, 6830-7	2.4	15
100	Structure of the human chromosome interaction network. *PLoS ONE*, **2017**, 12, e0188201	3.7	15
99	Modeling Single-Molecule Conformations of the HoxD Region in Mouse Embryonic Stem and Cortical Neuronal Cells. *Cell Reports*, **2019**, 28, 1574-1583.e4	10.6	14
98	Polymer physics, scaling and heterogeneity in the spatial organisation of chromosomes in the cell nucleus. *Soft Matter*, **2013**, 9, 8631	3.6	14
97	Glass-glass transition and new dynamical singularity points in an analytically solvable p-spin glasslike model. *Physical Review Letters*, **2004**, 93, 215701	7.4	14
96	Shear-induced segregation of a granular mixture under horizontal oscillation. *Journal of Physics Condensed Matter*, **2005**, 17, S2549-S2556	1.8	14
95	CTCF mediates dosage- and sequence-context-dependent transcriptional insulation by forming local chromatin domains. *Nature Genetics*, **2021**, 53, 1064-1074	36.3	14
94	Jamming transition in granular media: a mean-field approximation and numerical simulations. *Physical Review E*, **2005**, 71, 061305	2.4	13
93	Applications of the statistical mechanics of inherent states to granular media. *Physica A: Statistical Mechanics and Its Applications*, **2001**, 302, 193-201	3.3	13
92	Equilibrium and off-equilibrium dynamics in a model for vortices in superconductors. *Physical Review B*, **2002**, 65,	3.3	13
91	Bramwell et al. Reply:. *Physical Review Letters*, **2002**, 89,	7.4	13
90	Polymer models of chromatin organization. *Frontiers in Genetics*, **2013**, 4, 113	4.5	12
89	The colocalization transition of homologous chromosomes at meiosis. *Physical Review E*, **2008**, 77, 061913	2.4	12
88	Scaling properties in off-equilibrium dynamical processes. *Physical Review E*, **1999**, 59, 2812-2816	2.4	12
87	Comparison of the Hi-C, GAM and SPRITE methods using polymer models of chromatin. *Nature Methods*, **2021**, 18, 482-490	21.6	12
86	Segregation in fluidized versus tapped packs. *Physical Review Letters*, **2004**, 93, 198002	7.4	11
85	Size segregation in granular media induced by phase transition. *Physical Review Letters*, **2005**, 95, 078001	7.4	11

84	Computational approaches from polymer physics to investigate chromatin folding. *Current Opinion in Cell Biology*, **2020**, 64, 10-17	9	10
83	A Polymer Physics Investigation of the Architecture of the Murine Orthologue of the Human Locus. *Frontiers in Neuroscience*, **2017**, 11, 559	5.1	10
82	Phenomenology and theory of horizontally oscillated granular mixtures. *European Physical Journal E*, **2007**, 22, 227-34	1.5	10
81	Off-equilibrium properties of vortex creep in superconductors. *Europhysics Letters*, **2001**, 54, 566-572	1.6	10
80	Bramwell et al. Reply:. *Physical Review Letters*, **2001**, 87,	7.4	10
79	Vortex clustering: The origin of the second peak in the magnetisation loops of type-two superconductors. *Europhysics Letters*, **2000**, 52, 210-216	1.6	10
78	Cell-type specialization is encoded by specific chromatin topologies. *Nature*, **2021**, 599, 684-691	50.4	10
77	Symmetry breaking mechanism for epithelial cell polarization. *Physical Review E*, **2009**, 80, 031919	2.4	9
76	Statistical properties and universality in earthquake and solar flare occurrence. *European Physical Journal B*, **2008**, 64, 551-555	1.2	9
75	Efficient cluster dynamics for the fully frustrated XY model. *Physica A: Statistical Mechanics and Its Applications*, **1996**, 233, 293-306	3.3	9
74	Models of polymer physics for the architecture of the cell nucleus. *Wiley Interdisciplinary Reviews: Systems Biology and Medicine*, **2019**, 11, e1444	6.6	9
73	Domains growth and packing properties in driven granular media subject to gravity. *Physica A: Statistical Mechanics and Its Applications*, **2000**, 285, 267-278	3.3	8
72	Cooperative length approach for granular media. *Physica A: Statistical Mechanics and Its Applications* , **1999**, 265, 311-318	3.3	8
71	Polymer models of the organization of chromosomes in the nucleus of cells. *Modern Physics Letters B*, **2015**, 29, 1530003	1.6	7
70	Physical mechanisms behind the large scale features of chromatin organization. *Transcription*, **2014**, 5, e28447	4.8	7
69	Probability distribution of inherent states in models of granular media and glasses. *European Physical Journal E*, **2002**, 9, 219-26	1.5	7
68	Edwards approach to horizontal and vertical segregation in a mixture of hard spheres under gravity. *Journal of Physics Condensed Matter*, **2003**, 15, S1095-S1105	1.8	7
67	Memory effects in response functions of driven vortex matter. *Europhysics Letters*, **2002**, 57, 348-354	1.6	7

66	Off-Equilibrium Dynamics in a Singular Diffusion Model. *Physical Review Letters*, **1999**, 83, 5054-5057	7.4	7
65	The scaling features of the 3D organization of chromosomes are highlighted by a transformation la Kadanoff of Hi-C data. *Europhysics Letters*, **2017**, 120, 40004	1.6	6
64	Diffusion-based DNA target colocalization by thermodynamic mechanisms. *Development (Cambridge)*, **2010**, 137, 3877-85	6.6	6
63	Shear- and vibration-induced order-disorder transitions in granular media. *European Physical Journal E*, **2007**, 24, 411-5	1.5	6
62	Phase transitions and aging phenomena in dielectriclike polymeric materials investigated by ac measurements. *Journal of Applied Physics*, **2007**, 101, 044910	2.5	6
61	Stationary probability distribution in granular media. *Physica D: Nonlinear Phenomena*, **2004**, 193, 292-302	3.3	6
60	On Edwards theory of powders. *Physica A: Statistical Mechanics and Its Applications*, **2004**, 339, 1-6	3.3	6
59	Dynamics and thermodynamics of the spherical frustrated Blume-Emery-Griffiths model. *Physical Review E*, **2002**, 66, 046101	2.4	6
58	Generalized percolation models for frustrated spin systems. *Nuovo Cimento Della Societa Italiana Di Fisica D - Condensed Matter, Atomic, Molecular and Chemical Physics, Biophysics*, **1994**, 16, 1259-1264		6
57	Multiplex-GAM: genome-wide identification of chromatin contacts yields insights not captured by Hi-C		6
56	Inference of chromosome 3D structures from GAM data by a physics computational approach. *Methods*, **2020**, 181-182, 70-79	4.6	6
55	Dynamic membrane patterning, signal localization and polarity in living cells. *Soft Matter*, **2015**, 11, 838-846	3.6	5
54	Percolation and cluster formalism in continuous spin systems. *Physica A: Statistical Mechanics and Its Applications*, **1997**, 238, 9-22	3.3	5
53	A model of volcanic magma transport by fracturing stress mechanisms. *Geophysical Research Letters* , **2008**, 35,	4.9	5
52	Statistical mechanics approach to the jamming transition in granular materials. *Physica A: Statistical Mechanics and Its Applications*, **2004**, 344, 431-439	3.3	5
51	CTCF Promotes Long-range Enhancer-promoter Interactions and Lineage-specific Gene Expression in Mammalian Cells		5
50	Physical mechanisms of chromatin spatial organization. *FEBS Journal*, **2021**,	5.7	5
49	Colocalization of multiple DNA loci: a physical mechanism. *Biophysical Journal*, **2012**, 103, 2223-32	2.9	4

48	Aggregation of fibrils and plaques in amyloid molecular systems. *Physical Review E*, **2009**, 80, 041914	2.4	4
47	A phenomenological theory of dynamic processes in granular media. *Physica A: Statistical Mechanics and Its Applications*, **1998**, 257, 448-453	3.3	4
46	INTERNAL AVALANCHES IN MODELS OF GRANULAR MEDIA. *Fractals*, **1999**, 07, 51-58	3.2	4
45	Logarithmic relaxations in a random-field lattice gas subject to gravity. *Physical Review E*, **1999**, 59, 3858-3863	2.4	4
44	CTCF Mediates Dosage and Sequence-context-dependent Transcriptional Insulation through Formation of Local Chromatin Domains		4
43	Polymer physics and machine learning reveal a combinatorial code linking chromatin 3D architecture to 1D epigenetics		4
42	Polymer Physics of the Large-Scale Structure of Chromatin. *Methods in Molecular Biology*, **2016**, 1480, 201-6	1.4	4
41	Phase coexistence and relaxation of the spherical frustrated Blume-Emery-Griffiths model with attractive particles coupling. *Europhysics Letters*, **2004**, 65, 256-261	1.6	3
40	Nicodemi and Jensen Reply:. *Physical Review Letters*, **2001**, 87,	7.4	3
39	Single-cell states in the estrogen response of breast cancer cell lines. *PLoS ONE*, **2014**, 9, e88485	3.7	3
38	Logarithmic Compaction in a 3D Model for Granular Media. *Journal De Physique, I*, **1997**, 7, 1535-1540		3
37	Cell-type specialization in the brain is encoded by specific long-range chromatin topologies		3
36	Comparison of the Hi-C, GAM and SPRITE methods by use of polymer models of chromatin		3
35	Divergent Transcription of the Locus Generates Two Enhancer RNAs with Opposing Functions. *IScience*, **2020**, 23, 101539	6.1	3
34	Polymer models are a versatile tool to study chromatin 3D organization. *Biochemical Society Transactions*, **2021**, 49, 1675-1684	5.1	3
33	Passive DNA shuttling. *Europhysics Letters*, **2010**, 92, 20002	1.6	2
32	Mean-Field Theory of the Symmetry Breaking Model for X Chromosome Inactivation. *Progress of Theoretical Physics Supplement*, **2011**, 191, 40-45		2
31	Geometrical frustration: a dynamical motor for dry granular media. *Physica A: Statistical Mechanics and Its Applications*, **1998**, 257, 419-423	3.3	2

30	Peak effect in a driven lattice gas model. *Physical Review E*, **2003**, 67, 041103	2.4	2
29	Slow dynamics and aging in a constrained diffusion model. *Physical Review E*, **2001**, 63, 031106	2.4	2
28	Interplay of dynamical and equilibrium phenomena in vortex matter. *Journal of Physics Condensed Matter*, **2002**, 14, 2403-2412	1.8	2
27	STATISTICAL MECHANICS OF STATIC GRANULAR PACKINGS UNDER GRAVITY. *International Journal of Modern Physics B*, **2009**, 23, 5345-5358	1.1	1
26	DNA loci cross-talk through thermodynamics. *Journal of Biomedicine and Biotechnology*, **2009**, 2009, 516723		1
25	Stochastic transitions and jamming in granular pipe flow. *Physical Review E*, **2011**, 83, 031309	2.4	1
24	Mapping of frustrated spin systems into percolation models and Monte Carlo cluster dynamics. *Journal of Physics A*, **1996**, 29, 1961-1971		1
23	VORTEX MATTER OUT OF EQUILIBRIUM. *Fractals*, **2003**, 11, 149-159	3.2	1
22	Second magnetisation peak relaxation in a model for vortices in superconductors. *Physica C: Superconductivity and Its Applications*, **2000**, 341-348, 1065-1066	1.3	1
21	Single-cell chromatin interactions reveal regulatory hubs in dynamic compartmentalized domains		1
20	Chromatin folding variability across single-cells results from state degeneracy in phase-separation		1
19	Non-equilibrium chromosome looping via molecular slip-links		1
18	Preformed Chromatin Topology Assists Transcriptional Robustness of Shh during Limb Development		1
17	Polymer physics reveals a combinatorial code linking 3D chromatin architecture to 1D chromatin states.. *Cell Reports*, **2022**, 38, 110601	10.6	1
16	Chromosomes Phase Transition to Function. *Biophysical Journal*, **2020**, 119, 724-725	2.9	0
15	On the Nature of Chromatin 3D Organization **2017**, 191-201		
14	Flow regimes of a fluid driven granular suspension. *Granular Matter*, **2012**, 14, 175-178	2.6	
13	COMPLEX FLOW IN GRANULAR MEDIA. *International Journal of Modeling, Simulation, and Scientific Computing*, **2010**, 13, 339-347	0.8	

List of Publications

12	STATISTICAL MECHANICS MODELS FOR X-CHROMOSOME INACTIVATION. *International Journal of Modeling, Simulation, and Scientific Computing*, **2010**, 13, 367-376	0.8
11	Rheology of sheared monodisperse granular suspensions. *European Physical Journal: Special Topics*, **2009**, 179, 157-163	2.3
10	Statistical Mechanics of jamming and segregation in granular media **2004**, 47-61	
9	Time dependent phenomena in transport properties and IV characteristics of a model for driven vortex matter. *Journal of Physics Condensed Matter*, **2004**, 16, 6789-6810	1.8
8	Stress Correlations and Weight Distributions in Granular Packs **1998**, 137-142	
7	Species Segregation and Dynamical Instability of Horizontally Vibrated Granular Mixtures **2007**, 41-51	
6	The Inherent States of Glassy Systems and Granular Media **2002**, 74-83	
5	Self-assembly and DNA binding of the blocking factor in X Chromosome Inactivation. *PLoS Computational Biology*, **2005**, preprint, e210	5
4	The Strings and Binders Switch Model of Chromatin **2019**, 57-68	
3	Self-organisations and emergence1-47	
2	Frustrated Models for Compact Packings **1998**, 633-638	
1	A Polymer Physics Model to Dissect Genome Organization in Healthy and Pathological Phenotypes. *Methods in Molecular Biology*, **2022**, 2301, 307-316	1.4