Markus Deserno

List of Publications by Year
in descending order

109 papers	7,268 citations	66343 42 h-index	56724 83 g-index
112 all docs	112 docs citations	112 times ranked	5125 citing authors

#	Article	IF	Citations
1	Stiffening transition in asymmetric lipid bilayers: The role of highly ordered domains and the effect of temperature and size. Journal of Chemical Physics, 2021, 154, 014704.	3.0	9
2	Distribution of Cholesterol in Asymmetric Membranes Driven by Composition and Differential Stress. Biophysical Journal, 2021, 120, 147a.	0.5	0
3	Identifying systematic errors in a power spectral analysis of simulated lipid membranes. Journal of Chemical Physics, 2021, 154, 214103.	3.0	13
4	Spontaneous Curvature, Differential Stress, and Bending Modulus of Asymmetric Lipid Membranes. Biophysical Journal, 2020, 118, 624-642.	0.5	125
5	Spontaneous Curvature, Differential Stress, and Bending Modulus of Asymmetric Lipid Membranes. Biophysical Journal, 2020, 118, 91a.	0.5	16
6	Dynamics of active nematic defects on the surface of a sphere. Physical Review E, 2020, 102, 012607.	2.1	17
7	Stabilizing Leaflet Asymmetry under Differential Stress in a Highly Coarse-Grained Lipid Membrane Model. Journal of Chemical Theory and Computation, 2020, 16, 7195-7206.	5.3	11
8	Emerging applications at the interface of DNA nanotechnology and cellular membranes: Perspectives from biology, engineering, and physics. APL Bioengineering, 2020, 4, 041507.	6.2	19
9	Probing Nanoparticle/Membrane Interactions by Combining Amphiphilic Diblock Copolymer Assembly and Plasmonics. Journal of Physical Chemistry B, 2020, 124, 742-750.	2.6	7
10	A consistent quadratic curvature-tilt theory for fluid lipid membranes. Journal of Chemical Physics, 2019, 151, 164108.	3.0	27
11	Mechanical properties of lipid bilayers: a note on the Poisson ratio. Soft Matter, 2019, 15, 9085-9092.	2.7	34
12	Optimal Coarse-Grained Site Selection in Elastic Network Models of Biomolecules. Journal of Chemical Theory and Computation, 2019, 15, 648-664.	5.3	20
13	Dynamin's helical geometry does not destabilize membranes during fission. Traffic, 2018, 19, 328-335.	2.7	9
14	The 2018 biomembrane curvature and remodeling roadmap. Journal Physics D: Applied Physics, 2018, 51, 343001.	2.8	212
15	Responsive behavior of a branched-chain polymer network: a molecular dynamics study. Soft Matter, 2018, 14, 6485-6495.	2.7	6
16	Lipid Membranes: From Self-assembly to Elasticity. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2018, , 105-166.	0.6	3
17	The role of scaffold reshaping and disassembly in dynamin driven membrane fission. ELife, 2018, 7, .	6.0	42
18	Novel tilt-curvature coupling in lipid membranes. Journal of Chemical Physics, 2017, 147, 084702.	3.0	40

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19	Effect of intrinsic curvature and edge tension on the stability of binary mixed-membrane three-junctions. Journal of Chemical Physics, 2016, 145, 074901.	3.0	8
20	Constriction by Dynamin: Elasticity versus Adhesion. Biophysical Journal, 2016, 111, 2470-2480.	0.5	17
21	Revisiting Tilt in Classical Curvature Elastic Theories for Membranes. Biophysical Journal, 2016, 110, 581a.	0.5	2
22	Determining the Lipid Tilt Modulus by Simulating Membrane Buckles. Journal of Physical Chemistry B, 2016, 120, 6061-6073.	2.6	28
23	Breaking a virus: Identifying molecular level failure modes of a viral capsid by multiscale modeling. European Physical Journal: Special Topics, 2016, 225, 1757-1774.	2.6	11
24	Probing the Elastic Properties of Alpha Helices via Buckling Simulations. Biophysical Journal, 2016, 110, 380a.	0.5	0
25	What can Geometry Tell us about Dynamin Filaments on Membrane Necks?. Biophysical Journal, 2016, 110, 594a.	0.5	0
26	Determining the pivotal plane of fluid lipid membranes in simulations. Journal of Chemical Physics, 2015, 143, 164109.	3.0	22
27	Folding and insertion thermodynamics of the transmembrane WALP peptide. Journal of Chemical Physics, 2015, 143, 243127.	3.0	37
28	Cylindrical confinement of semiflexible polymers. Physical Review E, 2015, 91, 063203.	2.1	10
29	Revisiting the Link between Lipid Membrane Elasticity and Microscopic Continuum Models. Biophysical Journal, 2015, 108, 87a-88a.	0.5	2
30	Curvature Softening and Negative Compressibility of Gel-Phase Lipid Membranes. Journal of the American Chemical Society, 2015, 137, 12752-12755.	13.7	27
31	Design Principles for Nanoparticles Enveloped by a Polymer-Tethered Lipid Membrane. ACS Nano, 2015, 9, 9942-9954.	14.6	22
32	Enhanced Sampling of Coarse-Grained Transmembrane-Peptide Structure Formation from Hydrogen-Bond Replica Exchange. Journal of Membrane Biology, 2015, 248, 395-405.	2.1	12
33	Fluid lipid membranes: From differential geometry to curvature stresses. Chemistry and Physics of Lipids, 2015, 185, 11-45.	3.2	217
34	More than the sum of its parts: Coarse-grained peptide-lipid interactions from a simple cross-parametrization. Journal of Chemical Physics, 2014, 140, 115101.	3.0	38
35	Effective field theory of thermal Casimir interactions between anisotropic particles. Physical Review E, 2014, 89, 062102.	2.1	9
36	Buckling Gel-Phase Membranes is a Way to Measure their Mean Bending Regidity. Biophysical Journal, 2014, 106, 709a.	0.5	1

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37	The Effective Field Theory approach towards membrane-mediated interactions between particles. Advances in Colloid and Interface Science, 2014, 208, 89-109.	14.7	43
38	Breaking a Virus: Identifying Molecular Level Failure Modes of Viral Capsid Compression through Multi-Scale Simulation Techniques. Biophysical Journal, 2014, 106, 61a-62a.	0.5	1
39	Design Principles for Nanoparticles Enveloped by a Polymer-Tethered Lipid Membrane Coat. Biophysical Journal, 2014, 106, 623a.	0.5	0
40	Determining the Gaussian Curvature Modulus of Lipid Membranes in Simulations: A Comparative Study via Global Shape Transformations and Local Stress Distributions. Biophysical Journal, 2013, 104, 244a.	0.5	0
41	Investigation of Shiga-Like Toxin Subunit B using Coarse-Grained Modeling. Biophysical Journal, 2013, 104, 170a.	0.5	0
42	Optimization of an Elastic Network Augmented Coarse Grained Model to Study Ccmv Capsid Deformation. Biophysical Journal, 2013, 104, 413a.	0.5	0
43	Computational Studies of Biomembrane Systems: Theoretical Considerations, Simulation Models, and Applications. Advances in Polymer Science, 2013, , 237-283.	0.8	16
44	Determining the Mean Curvature Modulus of a Lipid Membrane by Simulating Buckling. Biophysical Journal, 2013, 104, 244a.	0.5	0
45	Gaussian curvature elasticity determined from global shape transformations and local stress distributions: a comparative study using the MARTINI model. Faraday Discussions, 2013, 161, 365-382.	3.2	92
46	Determining the bending modulus of a lipid membrane by simulating buckling. Journal of Chemical Physics, 2013, 138, 214110.	3.0	79
47	Optimization of an Elastic Network Augmented Coarse Grained Model to Study CCMV Capsid Deformation. PLoS ONE, 2013, 8, e60582.	2.5	45
48	Effective field theory approach to fluctuation-induced forces between colloids at an interface. Physical Review E, 2012, 85, 011140.	2.1	22
49	Membrane-mediated interactions between rigid inclusions: An effective field theory. Physical Review E, 2012, 86, 031906.	2.1	40
50	Coarse-Grained and Atomistic Simulations of the Salt-Stable Cowpea Chlorotic Mottle Virus (SS-CCMV) Subunit 26â€“49: Î²-Barrel Stability of the Hexamer and Pentamer Geometries. Journal of Chemical Theory and Computation, 2012, 8, 3750-3758.	5.3	22
51	Determining the Gaussian Curvature Modulus of Lipid Membranes in Simulations. Biophysical Journal, 2012, 102, 1403-1410.	0.5	181
52	Hemifusion of giant unilamellar vesicles with planar hydrophobic surfaces: a fluorescence microscopy study. Soft Matter, 2012, 8, 10877.	2.7	14
53	Membrane-mediated interactions between circular particles in the strongly curved regime. Soft Matter, 2011, 7, 8567.	2.7	81
54	A computational Study of Gel Nucleation in Lipid Bilayer. Biophysical Journal, 2011, 100, 632a.	0.5	0

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55	A coarse-Grained Solvent-Free Model for Tethered Lipid Membrane Simulation. Biophysical Journal, 2011, 100, 491a.	0.5	0
56	Structural Basis of Folding Cooperativity in Model Proteins: Insights from a Microcanonical Perspective. Biophysical Journal, 2011, 100, 2764-2772.	0.5	32
57	High-Resolution, Solvent-Free Coarse-Grained Model for Protein-Lipid Interactions. Biophysical Journal, 2011, 100, 640a.	0.5	0
58	Effective Field Theory Approach to Membrane-Mediated Interactions. Biophysical Journal, 2011, 100, 492a.	0.5	0
59	Interplay Between Secondary and Tertiary Structure Formation in Protein Folding Cooperativity. Biophysical Journal, 2011, 100, 210a.	0.5	1
60	Effective field theory approach to Casimir interactions on soft matter surfaces. Europhysics Letters, 2011, 96, 20003.	2.0	29
61	Cell Model Approach to Membrane Mediated Protein Interactions. Progress of Theoretical Physics Supplement, 2010, 184, 351-363.	0.1	20
62	Systematic implicit solvent coarse-graining of bilayer membranes: lipid and phase transferability of the force field. New Journal of Physics, 2010, 12, 095004.	2.9	44
63	A Study of Lipid Transferability of a Bottom-Up Implicit Solvent Coarse-Grained Model for Bilayer Membranes. Biophysical Journal, 2010, 98, 566a.	0.5	0
64	Identifying Two-State Transitions by Microcanonical Analysis: Coarse-Grained Simulations of Helical Peptides. Biophysical Journal, 2010, 98, 634a.	0.5	0
65	A Systematically Coarse-Grained Solvent-Free Model for Quantitative Phospholipid Bilayer Simulations. Journal of Physical Chemistry B, 2010, 114, 11207-11220.	2.6	125
66	Interplay between Secondary and Tertiary Structure Formation in Protein Folding Cooperativity. Journal of the American Chemical Society, 2010, 132, 13129-13131.	13.7	48
67	In-plane homogeneity and lipid dynamics in tethered bilayer lipid membranes (tBLMs). Soft Matter, 2010, 6, 1263.	2.7	52
68	Mesoscopic Membrane Physics: Concepts, Simulations, and Selected Applications. Macromolecular Rapid Communications, 2009, 30, 752-771.	3.9	102
69	Generic coarse-grained model for protein folding and aggregation. Journal of Chemical Physics, 2009, 130, 235106.	3.0	182
70	Membrane Elasticity and Mediated Interactions in Continuum Theory: A Differential Geometric Approach. , 2009, , 41-74.		8
71	Multiscale modeling of emergent materials: biological and soft matter. Physical Chemistry Chemical Physics, 2009, 11, 1869.	2.8	243
72	A Solvent-Free Coarse-Grained Model for Quantitative POPC Bilayer Simulations. Biophysical Journal, 2009, 96, 365a.	0.5	1

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73	Coarse-Grained Simulation Studies of Peptide-Induced Pore Formation. Biophysical Journal, 2008, 95, 4163-4173.	0.5	66
74	Membrane composition-mediated protein-protein interactions. Biointerphases, 2008, 3, FA117-FA124.	1.6	61
75	Coarse-grained modeling of interactions of lipid bilayers with supports. Journal of Chemical Physics, 2008, 129, 175102.	3.0	36
76	Adhesion promotes phase separation in mixed-lipid membranes. Europhysics Letters, 2008, 84, 48003.	2.0	55
77	Balancing torques in membrane-mediated interactions: Exact results and numerical illustrations. Physical Review E, 2007, 76, 011921.	2.1	54
78	Contact lines for fluid surface adhesion. Physical Review E, 2007, 76, 011605.	2.1	52
79	Aggregation and vesiculation of membrane proteins by curvature-mediated interactions. Nature, 2007, 447, 461-464.	27.8	690
80	Coupling between Lipid Shape and Membrane Curvature. Biophysical Journal, 2006, 91, 487-495.	0.5	168
81	Mechanical Properties of Pore-Spanning Lipid Bilayers Probed by Atomic Force Microscopy. Biophysical Journal, 2006, 91, 217-226.	0.5	116
82	How to determine local elastic properties of lipid bilayer membranes from atomic-force-microscope measurements: A theoretical analysis. Physical Review E, 2006, 74, 061914.	2.1	39
83	A novel method for measuring the bending rigidity of model lipid membranes by simulating tethers. Journal of Chemical Physics, 2006, 125, 204905.	3.0	116
84	Interface-mediated interactions between particles: A geometrical approach. Physical Review E, 2005, 72, 061407.	2.1	70
85	Geometry of surface-mediated interactions. Europhysics Letters, 2005, 69, 482-488.	2.0	54
86	Solvent-free model for self-assembling fluid bilayer membranes: Stabilization of the fluid phase based on broad attractive tail potentials. Journal of Chemical Physics, 2005, 123, 224710.	3.0	228
87	Tunable generic model for fluid bilayer membranes. Physical Review E, 2005, 72, 011506.	2.1	338
88	Twist-bend instability for toroidal DNA condensates. Europhysics Letters, 2004, 67, 418-424.	2.0	40
89	When do fluid membranes engulf sticky colloids?. Journal of Physics Condensed Matter, 2004, 16, S2061-S2070.	1.8	30
90	Screening of spherical colloids beyond mean field: A local density functional approach. Physical Review E, 2004, 69, 051401.	2.1	14

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91	Elastic deformation of a fluid membrane upon colloid binding. Physical Review E, 2004, 69, 031903.	2.1	230
92	A Statistical-Thermodynamic Model of Viral Budding. Biophysical Journal, 2004, 86, 2037-2048.	0.5	96
93	Attraction and Ionic Correlations between Charged Stiff Polyelectrolytes. Macromolecules, 2003, 36, 249-259.	4.8	76
94	Osmotic Shock and the Strength of Viral Capsids. Biophysical Journal, 2003, 85, 70-74.	0.5	94
95	Wrapping of a spherical colloid by a fluid membrane. Europhysics Letters, 2003, 62, 767-774.	2.0	140
96	Osmotic pressure of charged colloidal suspensions: A unified approach to linearized Poisson-Boltzmann theory. Physical Review E, 2002, 66, 011401.	2.1	72
97	Adhesion and Wrapping in Colloidâ^'Vesicle Complexes. Journal of Physical Chemistry B, 2002, 106, 5543-5552.	2.6	168
98	Theory and simulations of rigid polyelectrolytes. Molecular Physics, 2002, 100, 2941-2956.	1.7	41
99	Overcharging of DNA in the Presence of Salt:Â Theory and Simulation. Journal of Physical Chemistry B, 2001, 105, 10983-10991.	2.6	117
100	Rayleigh instability of charged droplets in the presence of counterions. European Physical Journal E, 2001, 6, 163-168.	1.6	44
101	The osmotic coefficient of rod-like polyelectrolytes: Computer simulation, analytical theory, and experiment. European Physical Journal E, 2001, 5, 97-103.	1.6	49
102	Cell Model and Poisson-Boltzmann Theory: A Brief Introduction. , 2001, , 27-52.		30
103	A Monte-Carlo approach to Poissonâ€"Boltzmann like free-energy functionals. Physica A: Statistical Mechanics and Its Applications, 2000, 278, 405-413.	2.6	9
104	A stable local density functional approach to ion-ion correlations. Europhysics Letters, 2000, 52, 80-86.	2.0	76
105	Fraction of Condensed Counterions around a Charged Rod:Â Comparison of Poissonâ^'Boltzmann Theory and Computer Simulations. Macromolecules, 2000, 33, 199-206.	4.8	271
106	How to mesh up Ewald sums. II. An accurate error estimate for the particleâ€"particleâ€"particle-mesh algorithm. Journal of Chemical Physics, 1998, 109, 7694-7701.	3.0	284
107	Expression of a male accessory gland peptide of Leptinotarsa decemlineata in insect cells infected with a recombinant baculovirus.. Journal of Insect Physiology, 1998, 44, 255-262.	2.0	1
108	How to mesh up Ewald sums. I. A theoretical and numerical comparison of various particle mesh routines. Journal of Chemical Physics, 1998, 109, 7678-7693.	3.0	576

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109	Tricriticality and the Blume-Capel model: A Monte Carlo study within the microcanonical ensemble. Physical Review E, 1997, 56, 5204-5210.	2.1	67