Markus Deserno

List of Publications by Year
in descending order

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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	Aggregation and vesiculation of membrane proteins by curvature-mediated interactions. Nature, 2007, 447, 461-464.	27.8	690
2	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
3	Tunable generic model for fluid bilayer membranes. Physical Review E, 2005, 72, 011506.	2.1	338
4	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
5	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
6	Multiscale modeling of emergent materials: biological and soft matter. Physical Chemistry Chemical Physics, 2009, 11, 1869.	2.8	243
7	Elastic deformation of a fluid membrane upon colloid binding. Physical Review E, 2004, 69, 031903.	2.1	230
8	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
9	Fluid lipid membranes: From differential geometry to curvature stresses. Chemistry and Physics of Lipids, 2015, 185, 11-45.	3.2	217
10	The 2018 biomembrane curvature and remodeling roadmap. Journal Physics D: Applied Physics, 2018, 51, 343001.	2.8	212
11	Generic coarse-grained model for protein folding and aggregation. Journal of Chemical Physics, 2009, 130, 235106.	3.0	182
12	Determining the Gaussian Curvature Modulus of Lipid Membranes in Simulations. Biophysical Journal, 2012, 102, 1403-1410.	0.5	181
13	Adhesion and Wrapping in Colloidâ^'Vesicle Complexes. Journal of Physical Chemistry B, 2002, 106, 5543-5552.	2.6	168
14	Coupling between Lipid Shape and Membrane Curvature. Biophysical Journal, 2006, 91, 487-495.	0.5	168
15	Wrapping of a spherical colloid by a fluid membrane. Europhysics Letters, 2003, 62, 767-774.	2.0	140
16	A Systematically Coarse-Grained Solvent-Free Model for Quantitative Phospholipid Bilayer Simulations. Journal of Physical Chemistry B, 2010, 114, 11207-11220.	2.6	125
17	Spontaneous Curvature, Differential Stress, and Bending Modulus of Asymmetric Lipid Membranes. Biophysical Journal, 2020, 118, 624-642.	0.5	125
18	Overcharging of DNA in the Presence of Salt:Â Theory and Simulation. Journal of Physical Chemistry B, 2001, 105, 10983-10991.	2.6	117

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19	Mechanical Properties of Pore-Spanning Lipid Bilayers Probed by Atomic Force Microscopy. Biophysical Journal, 2006, 91, 217-226.	0.5	116
20	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
21	Mesoscopic Membrane Physics: Concepts, Simulations, and Selected Applications. Macromolecular Rapid Communications, 2009, 30, 752-771.	3.9	102
22	A Statistical-Thermodynamic Model of Viral Budding. Biophysical Journal, 2004, 86, 2037-2048.	0.5	96
23	Osmotic Shock and the Strength of Viral Capsids. Biophysical Journal, 2003, 85, 70-74.	0.5	94
24	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
25	Membrane-mediated interactions between circular particles in the strongly curved regime. Soft Matter, 2011, 7, 8567.	2.7	81
26	Determining the bending modulus of a lipid membrane by simulating buckling. Journal of Chemical Physics, 2013, 138, 214110.	3.0	79
27	A stable local density functional approach to ion-ion correlations. Europhysics Letters, 2000, 52, 80-86.	2.0	76
28	Attraction and Ionic Correlations between Charged Stiff Polyelectrolytes. Macromolecules, 2003, 36, 249-259.	4.8	76
29	Osmotic pressure of charged colloidal suspensions: A unified approach to linearized Poisson-Boltzmann theory. Physical Review E, 2002, 66, 011401.	2.1	72
30	Interface-mediated interactions between particles: A geometrical approach. Physical Review E, 2005, 72, 061407.	2.1	70
31	Tricriticality and the Blume-Capel model: A Monte Carlo study within the microcanonical ensemble. Physical Review E, 1997, 56, 5204-5210.	2.1	67
32	Coarse-Grained Simulation Studies of Peptide-Induced Pore Formation. Biophysical Journal, 2008, 95, 4163-4173.	0.5	66
33	Membrane composition-mediated protein-protein interactions. Biointerphases, 2008, 3, FA117-FA124.	1.6	61
34	Adhesion promotes phase separation in mixed-lipid membranes. Europhysics Letters, 2008, 84, 48003.	2.0	55
35	Geometry of surface-mediated interactions. Europhysics Letters, 2005, 69, 482-488.	2.0	54
36	Balancing torques in membrane-mediated interactions: Exact results and numerical illustrations. Physical Review E, 2007, 76, 011921.	2.1	54

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37	Contact lines for fluid surface adhesion. Physical Review E, 2007, 76, 011605.	2.1	52
38	In-plane homogeneity and lipid dynamics in tethered bilayer lipid membranes (tBLMs). Soft Matter, 2010, 6, 1263.	2.7	52
39	The osmotic coefficient of rod-like polyelectrolytes: Computer simulation, analytical theory, and experiment. European Physical Journal E, 2001, 5, 97-103.	1.6	49
40	Interplay between Secondary and Tertiary Structure Formation in Protein Folding Cooperativity. Journal of the American Chemical Society, 2010, 132, 13129-13131.	13.7	48
41	Optimization of an Elastic Network Augmented Coarse Grained Model to Study CCMV Capsid Deformation. PLoS ONE, 2013, 8, e60582.	2.5	45
42	Rayleigh instability of charged droplets in the presence of counterions. European Physical Journal E, 2001, 6, 163-168.	1.6	44
43	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
44	The Effective Field Theory approach towards membrane-mediated interactions between particles. Advances in Colloid and Interface Science, 2014, 208, 89-109.	14.7	43
45	The role of scaffold reshaping and disassembly in dynamin driven membrane fission. ELife, 2018, 7, .	6.0	42
46	Theory and simulations of rigid polyelectrolytes. Molecular Physics, 2002, 100, 2941-2956.	1.7	41
47	Twist-bend instability for toroidal DNA condensates. Europhysics Letters, 2004, 67, 418-424.	2.0	40
48	Membrane-mediated interactions between rigid inclusions: An effective field theory. Physical Review E, 2012, 86, 031906.	2.1	40
49	Novel tilt-curvature coupling in lipid membranes. Journal of Chemical Physics, 2017, 147, 084702.	3.0	40
50	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
51	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
52	Folding and insertion thermodynamics of the transmembrane WALP peptide. Journal of Chemical Physics, 2015, 143, 243127.	3.0	37
53	Coarse-grained modeling of interactions of lipid bilayers with supports. Journal of Chemical Physics, 2008, 129, 175102.	3.0	36
54	Mechanical properties of lipid bilayers: a note on the Poisson ratio. Soft Matter, 2019, 15, 9085-9092.	2.7	34

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55	Structural Basis of Folding Cooperativity in Model Proteins: Insights from a Microcanonical Perspective. Biophysical Journal, 2011, 100, 2764-2772.	0.5	32
56	When do fluid membranes engulf sticky colloids?. Journal of Physics Condensed Matter, 2004, 16, S2061-S2070.	1.8	30
57	Cell Model and Poisson-Boltzmann Theory: A Brief Introduction. , 2001, , 27-52.		30
58	Effective field theory approach to Casimir interactions on soft matter surfaces. Europhysics Letters, 2011, 96, 20003.	2.0	29
59	Determining the Lipid Tilt Modulus by Simulating Membrane Buckles. Journal of Physical Chemistry B, 2016, 120, 6061-6073.	2.6	28
60	Curvature Softening and Negative Compressibility of Gel-Phase Lipid Membranes. Journal of the American Chemical Society, 2015, 137, 12752-12755.	13.7	27
61	A consistent quadratic curvature-tilt theory for fluid lipid membranes. Journal of Chemical Physics, 2019, 151, 164108.	3.0	27
62	Effective field theory approach to fluctuation-induced forces between colloids at an interface. Physical Review E, 2012, 85, 011140.	2.1	22
63	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
64	Determining the pivotal plane of fluid lipid membranes in simulations. Journal of Chemical Physics, 2015, 143, 164109.	3.0	22
65	Design Principles for Nanoparticles Enveloped by a Polymer-Tethered Lipid Membrane. ACS Nano, 2015, 9, 9942-9954.	14.6	22
66	Cell Model Approach to Membrane Mediated Protein Interactions. Progress of Theoretical Physics Supplement, 2010, 184, 351-363.	0.1	20
67	Optimal Coarse-Grained Site Selection in Elastic Network Models of Biomolecules. Journal of Chemical Theory and Computation, 2019, 15, 648-664.	5.3	20
68	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
69	Constriction by Dynamin: Elasticity versus Adhesion. Biophysical Journal, 2016, 111, 2470-2480.	0.5	17
70	Dynamics of active nematic defects on the surface of a sphere. Physical Review E, 2020, 102, 012607.	2.1	17
71	Computational Studies of Biomembrane Systems: Theoretical Considerations, Simulation Models, and Applications. Advances in Polymer Science, 2013, , 237-283.	0.8	16
72	Spontaneous Curvature, Differential Stress, and Bending Modulus of Asymmetric Lipid Membranes. Biophysical Journal, 2020, 118, 91a.	0.5	16

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73	Screening of spherical colloids beyond mean field: A local density functional approach. Physical Review E, 2004, 69, 051401.	2.1	14
74	Hemifusion of giant unilamellar vesicles with planar hydrophobic surfaces: a fluorescence microscopy study. Soft Matter, 2012, 8, 10877.	2.7	14
75	Identifying systematic errors in a power spectral analysis of simulated lipid membranes. Journal of Chemical Physics, 2021, 154, 214103.	3.0	13
76	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
77	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
78	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
79	Cylindrical confinement of semiflexible polymers. Physical Review E, 2015, 91, 063203.	2.1	10
80	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
81	Effective field theory of thermal Casimir interactions between anisotropic particles. Physical Review E, 2014, 89, 062102.	2.1	9
82	Dynamin's helical geometry does not destabilize membranes during fission. Traffic, 2018, 19, 328-335.	2.7	9
83	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
84	Membrane Elasticity and Mediated Interactions in Continuum Theory: A Differential Geometric Approach. , 2009, , 41-74.		8
85	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
86	Probing Nanoparticle/Membrane Interactions by Combining Amphiphilic Diblock Copolymer Assembly and Plasmonics. Journal of Physical Chemistry B, 2020, 124, 742-750.	2.6	7
87	Responsive behavior of a branched-chain polymer network: a molecular dynamics study. Soft Matter, 2018, 14, 6485-6495.	2.7	6
88	Lipid Membranes: From Self-assembly to Elasticity. CISM International Centre for Mechanical Sciences, Courses and Lectures, 2018, , 105-166.	0.6	3
89	Revisiting the Link between Lipid Membrane Elasticity and Microscopic Continuum Models. Biophysical Journal, 2015, 108, 87a-88a.	0.5	2
90	Revisiting Tilt in Classical Curvature Elastic Theories for Membranes. Biophysical Journal, 2016, 110, 581a.	0.5	2

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91	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
92	A Solvent-Free Coarse-Grained Model for Quantitative POPC Bilayer Simulations. Biophysical Journal, 2009, 96, 365a.	0.5	1
93	Interplay Between Secondary and Tertiary Structure Formation in Protein Folding Cooperativity. Biophysical Journal, 2011, 100, 210a.	0.5	1
94	Buckling Gel-Phase Membranes is a Way to Measure their Mean Bending Regidity. Biophysical Journal, 2014, 106, 709a.	0.5	1
95	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
96	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
97	Identifying Two-State Transitions by Microcanonical Analysis: Coarse-Grained Simulations of Helical Peptides. Biophysical Journal, 2010, 98, 634a.	0.5	0
98	A computational Study of Gel Nucleation in Lipid Bilayer. Biophysical Journal, 2011, 100, 632a.	0.5	0
99	A coarse-Grained Solvent-Free Model for Tethered Lipid Membrane Simulation. Biophysical Journal, 2011, 100, 491a.	0.5	0
100	High-Resolution, Solvent-Free Coarse-Grained Model for Protein-Lipid Interactions. Biophysical Journal, 2011, 100, 640a.	0.5	0
101	Effective Field Theory Approach to Membrane-Mediated Interactions. Biophysical Journal, 2011, 100, 492a.	0.5	0
102	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
103	Investigation of Shiga-Like Toxin Subunit B using Coarse-Grained Modeling. Biophysical Journal, 2013, 104, 170a.	0.5	0
104	Optimization of an Elastic Network Augmented Coarse Grained Model to Study Ccmv Capsid Deformation. Biophysical Journal, 2013, 104, 413a.	0.5	0
105	Determining the Mean Curvature Modulus of a Lipid Membrane by Simulating Buckling. Biophysical Journal, 2013, 104, 244a.	0.5	0
106	Design Principles for Nanoparticles Enveloped by a Polymer-Tethered Lipid Membrane Coat. Biophysical Journal, 2014, 106, 623a.	0.5	0
107	Probing the Elastic Properties of Alpha Helices via Buckling Simulations. Biophysical Journal, 2016, 110, 380a.	0.5	0
108	What can Geometry Tell us about Dynamin Filaments on Membrane Necks?. Biophysical Journal, 2016, 110, 594a.	0.5	0

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109	Distribution of Cholesterol in Asymmetric Membranes Driven by Composition and Differential Stress. Biophysical Journal, 2021, 120, 147a.	0.5	0