

Ruprecht Machleidt

List of Publications by Year in descending order

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148
papers

13,797
citations

76326

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22166

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149
all docs

149
docs citations

149
times ranked

2958
citing authors

#	ARTICLE	IF	CITATIONS
1	The bonn meson-exchange model for the nucleon-nucleon interaction. Physics Reports, 1987, 149, 1-89.	25.6	2,228
2	High-precision, charge-dependent Bonn nucleon-nucleon potential. Physical Review C, 2001, 63, .	2.9	1,489
3	Accurate charge-dependent nucleon-nucleon potential at fourth order of chiral perturbation theory. Physical Review C, 2003, 68, .	2.9	1,282
4	Chiral effective field theory and nuclear forces. Physics Reports, 2011, 503, 1-75.	25.6	1,209
5	The Meson Theory of Nuclear Forces and Nuclear Structure. , 1989, , 189-376.		1,093
6	Nonlocal nature of the nuclear force and its impact on nuclear structure. Physical Review C, 1996, 53, R1483-R1487.	2.9	535
7	Relativistic nuclear structure. I. Nuclear matter. Physical Review C, 1990, 42, 1965-1980.	2.9	511
8	Optimized Chiral Nucleon-Nucleon Interaction at Next-to-Next-to-Leading Order. Physical Review Letters, 2013, 110, 192502.	7.8	267
9	High-quality two-nucleon potentials up to fifth order of the chiral expansion. Physical Review C, 2017, 96, .	2.9	238
10	Evolution of Shell Structure in Neutron-Rich Calcium Isotopes. Physical Review Letters, 2012, 109, 032502.	7.8	231
11	Nuclear saturation in a relativistic Brueckner-Hartree-Fock approach. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1984, 149, 283-287.	4.1	215
12	Microscopic calculation of in-medium nucleon-nucleon cross sections. Physical Review C, 1993, 48, 1702-1712.	2.9	213
13	Continuum Effects and Three-Nucleon Forces in Neutron-Rich Oxygen Isotopes. Physical Review Letters, 2012, 108, 242501.	7.8	193
14	Accurate nucleon-nucleon potential based upon chiral perturbation theory. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2002, 524, 93-98.	4.1	192
15	Microscopic calculation of in-medium proton-proton cross sections. Physical Review C, 1994, 49, 566-569.	2.9	172
16	OBEP and eikonal form factor. Nuclear Physics A, 1976, 256, 479-496.	1.5	157
17	The nucleon-nucleon interaction. Journal of Physics G: Nuclear and Particle Physics, 2001, 27, R69-R108.	3.6	156
18	Chiral π -exchange at fourth order and peripheral NN scattering. Physical Review C, 2002, 66, .	2.9	151

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19	Realistic two-baryon potential coupling two-nucleon and nucleon- $\hat{\pi}$ -isobar states: Fit and applications to three-nucleon system. <i>Physical Review C</i> , 2003, 68, .	2.9	146
20	Peripheral nucleon-nucleon scattering at fifth order of chiral perturbation theory. <i>Physical Review C</i> , 2015, 91, .	2.9	140
21	Momentum-space OBEP, two-nucleon and nuclear matter data. <i>Nuclear Physics A</i> , 1975, 247, 495-520.	1.5	130
22	Nuclear-matter equation of state with consistent two- and three-body perturbative chiral interactions. <i>Physical Review C</i> , 2014, 89, .	2.9	110
23	Weak capture of protons by protons. <i>Physical Review C</i> , 1998, 58, 1263-1277.	2.9	106
24	Properties of dense nuclear and neutron matter with relativistic nucleon-nucleon interactions. <i>Physical Review C</i> , 1992, 45, 2782-2794.	2.9	102
25	Reduced regulator dependence of neutron-matter predictions with perturbative chiral interactions. <i>Physical Review C</i> , 2013, 87, .	2.9	89
26	Toward order-by-order calculations of the nuclear and neutron matter equations of state in chiral effective field theory. <i>Physical Review C</i> , 2015, 91, .	2.9	87
27	Towards a model-independent low momentum nucleon-nucleon interaction. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2003, 576, 265-272.	4.1	86
28	Effect of the $\hat{\pi}$ (1236) resonance on NN scattering, nuclear matter and neutron matter. <i>Nuclear Physics A</i> , 1977, 280, 429-466.	1.5	81
29	Renormalization of chiral two-pion exchange NN interactions: Momentum space versus coordinate space. <i>Physical Review C</i> , 2008, 77, .	2.9	79
30	Modern nucleon-nucleon potentials and symmetry energy in infinite matter. <i>Nuclear Physics A</i> , 1997, 627, 85-100.	1.5	75
31	Dominant contributions to the nucleon-nucleon interaction at sixth order of chiral perturbation theory. <i>Physical Review C</i> , 2015, 92, .	2.9	69
32	Chiral EFT based nuclear forces: achievements and challenges. <i>Physica Scripta</i> , 2016, 91, 083007.	2.5	68
33	Relativistic nuclear structure. II. Finite nuclei. <i>Physical Review C</i> , 1990, 42, 1981-1988.	2.9	59
34	Strength of the $\hat{\pi}$ -meson coupling to nucleons. <i>Physical Review C</i> , 1994, 50, 1731-1734.	2.9	57
35	Nonperturbative renormalization of the chiral nucleon-nucleon interaction up to next-to-next-to-leading order. <i>Physical Review C</i> , 2013, 88, .	2.9	54
36	Dirac effects in the Hartree-Fock description of finite nuclei employing realistic forces. <i>Physical Review Letters</i> , 1993, 71, 46-49.	7.8	49

#	ARTICLE	IF	CITATIONS
37	Family of chiral two- plus three-nucleon interactions for accurate nuclear structure studies. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2020, 808, 135651.	4.1	49
38	Dirac-Brueckner-Hartree-Fock versus chiral effective field theory. Physical Review C, 2012, 86, .	2.9	48
39	An OBE model for the two-nucleon problem based on non-covariant perturbation theory. Nuclear Physics A, 1975, 242, 429-444.	1.5	45
40	Charge symmetry breaking of the nucleon-nucleon interaction: $\bar{N}N$ mixing versus nucleon mass splitting. Physical Review C, 2001, 63, .	2.9	45
41	Low-momentum nucleon-nucleon interactions and shell-model calculations. Physical Review C, 2007, 75, .	2.9	43
42	Nucleon-nucleon potentials in comparison: Physics or polemics?. Physics Reports, 1994, 242, 5-35.	25.6	41
43	Isobar contributions to the two-nucleon interaction derived from noncovariant perturbation theory. Physical Review C, 1978, 18, 870-886.	2.9	40
44	Historical perspective and future prospects for nuclear interactions. International Journal of Modern Physics E, 2017, 26, 1730005.	1.0	39
45	Extension of the Bonn meson exchange NN potential above pion production threshold: Role of the delta isobar. Physical Review C, 1988, 38, 1828-1842.	2.9	38
46	Bonn potential and sd-shell nuclei. Physical Review C, 1992, 46, 910-922.	2.9	38
47	Essential mechanisms in the triton binding. Physical Review C, 1988, 37, 1245-1252.	2.9	37
48	Nuclear charge symmetry breaking and the ${}^3\text{H} \hat{=} {}^3\text{He}$ binding energy difference. Physical Review C, 1988, 37, 781-785.	2.9	35
49	Chiral NN model and A puzzle. Physical Review C, 2002, 65, .	2.9	34
50	Towards a consistent approach to nuclear structure: EFT of two- and many-body forces. Journal of Physics G: Nuclear and Particle Physics, 2005, 31, S1235-S1244.	3.6	34
51	Extension of the Bonn meson exchange NN potential above pion production threshold: Nucleon renormalization and unitarity. Physical Review C, 1988, 37, 1647-1655.	2.9	33
52	The mass of a bound $\bar{N}N$ -isobar. Nuclear Physics A, 1982, 375, 334-360.	1.5	32
53	Nuclear structure calculations and modern nucleon-nucleon potentials. Physical Review C, 2005, 71, .	2.9	32
54	Recent determinations of the $\bar{N}N$ coupling constant and deuteron properties. Physical Review Letters, 1991, 66, 564-567.	7.8	30

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55	Renormalization of the leading-order chiral nucleon-nucleon interaction and bulk properties of nuclear matter. <i>Physical Review C</i> , 2010, 81, .	2.9	30
56	Infinite-Cutoff Renormalization of the Chiral Nucleon-Nucleon Interaction up to N ³ LO. <i>Few-Body Systems</i> , 2013, 54, 2191-2205.	1.5	30
57	Meson exchange potentials and the problem of saturation in finite nuclei. <i>Nuclear Physics A</i> , 1991, 530, 14-26.	1.5	29
58	Half-Skyrmions and the equation of state for compact-star matter. <i>Physical Review C</i> , 2013, 87, .	2.9	29
59	Statistical uncertainties of a chiral interaction at next-to-next-to leading order. <i>Journal of Physics G: Nuclear and Particle Physics</i> , 2015, 42, 034003.	3.6	29
60	Meson exchange corrections and properties of nuclear matter and neutron matter. <i>Nuclear Physics A</i> , 1976, 264, 484-492.	1.5	28
61	Mesonic and isobar degrees of freedom in the ground state of the nuclear many-body system. <i>Physical Review C</i> , 1978, 18, 2416-2429.	2.9	27
62	Parametrization of the relativistic effective interaction in nuclear matter. <i>Nuclear Physics A</i> , 1990, 515, 715-735.	1.5	27
63	Charge dependence of the nucleon-nucleon interaction. <i>Physical Review C</i> , 1998, 58, 3153-3162.	2.9	27
64	The $\hat{\Gamma}^{\pi}(1236)$ probability in the ground state of the nuclear many-body system. <i>Nuclear Physics A</i> , 1979, 322, 369-381.	1.5	26
65	$\hat{\Gamma}^{\pi}$ NNcoupling constants from NNelastic data between 210 and 800 MeV. <i>Physical Review C</i> , 1995, 52, 1203-1211.	2.9	25
66	Nuclear forces from chiral EFT: the unfinished business. <i>Journal of Physics G: Nuclear and Particle Physics</i> , 2010, 37, 064041.	3.6	25
67	Nuclear Saturation with In-Medium Meson Exchange Interactions. <i>Physical Review Letters</i> , 1999, 82, 1827-1830.	7.8	24
68	Microscopic nuclear structure based upon a chiral NNpotential. <i>Physical Review C</i> , 2002, 66, .	2.9	24
69	Charge dependence of the nucleon-nucleon interaction due to pion-mass difference. <i>Physical Review C</i> , 1986, 34, 1181-1186.	2.9	23
70	Charge asymmetry of the nucleon-nucleon interaction. <i>Physical Review C</i> , 1998, 58, 1393-1402.	2.9	23
71	Can chiral EFT give us satisfaction?. <i>European Physical Journal A</i> , 2020, 56, 1.	2.5	23
72	OBEP and eikonal form factor. <i>Nuclear Physics A</i> , 1976, 256, 497-508.	1.5	21

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73	Trinucleon properties with one-boson-exchange potentials. Zeitschrift für Physik A, 1977, 280, 93-97.	1.4	20
74	Role of the single-particle potential in nuclear matter calculations including mesonic and isobar degrees of freedom. Nuclear Physics A, 1980, 350, 396-410.	1.5	18
75	Modelling nucleon-nucleon scattering above 1 GeV. European Physical Journal A, 2004, 22, 105-117.	2.5	18
76	Relativistic corrections to the triton binding energy. Physical Review C, 1992, 46, 1636-1641.	2.9	17
77	Self-consistent relativistic calculation of nucleon mean free path. Physical Review C, 1993, 48, 1062-1068.	2.9	16
78	Momentum distributions and short-range correlations in the deuteron and ^3He with modern chiral potentials. Physical Review C, 2019, 99, .	2.9	16
79	Nucleon-Nucleon Scattering Up to N ⁵ LO in Chiral Effective Field Theory. Frontiers in Physics, 2020, 8, .	2.1	16
80	Impact of three-body forces on elastic nucleon-nucleus scattering observables. Physical Review C, 2021, 103, .	2.9	16
81	Charge form factors and root mean square radii of ^3He and ^3H with the new Bonn potential. Physical Review C, 1988, 38, 2366-2376.	2.9	14
82	Comparing proton momentum distributions in ^2H and ^3H nuclei via ^2H ^3H and ^3He (e, e^2p) measurements. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2019, 797, 134890.	4.1	14
83	The Relevance of Pion-Exchange Contributions Versus Contact Terms in the Chiral Effective Field Theory Description of Nucleon-Nucleon Scattering. Few-Body Systems, 2021, 62, 1.	1.5	14
84	One-boson-exchange potential and the ground state of ^{16}O . Nuclear Physics A, 1975, 241, 18-28.	1.5	13
85	Skyrme-model ϵ form factor and nucleon-nucleon interaction. Physical Review C, 1997, 55, 1088-1095.	2.9	13
86	Isobar contributions to the NN interaction. Physical Review C, 1981, 24, 1143-1151.	2.9	12
87	Neutron-proton scattering observables at 325 MeV, the μ parameter, and the tensor force. Physical Review C, 1988, 37, 1549-1553.	2.9	12
88	Spin-polarized neutron-rich matter at different orders of chiral effective field theory. Physical Review C, 2015, 92, .	2.9	12
89	Role of noniterative ϵ exchange in NN scattering. Physical Review C, 1979, 19, 948-957.	2.9	11
90	Relativistic microscopic description of proton-nucleus scattering at intermediate energies. Physical Review C, 1993, 48, 2443-2450.	2.9	11

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91	Nucleon-nucleon charge symmetry breaking and the π - π reaction. <i>Physical Review C</i> , 2009, 80, .	2.9	11
92	Calculation of doublet capture rate for muon capture in deuterium within chiral effective field theory. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2012, 709, 93-100.	4.1	11
93	Nucleon-nucleon potentials from $\hat{\chi}$ -full chiral effective-field-theory and implications. <i>Physical Review C</i> , 2021, 104, .	2.9	11
94	The π , ρ and ω meson exchange contribution to the NN interaction. <i>Nuclear Physics A</i> , 1981, 372, 349-376.	1.5	10
95	Role of exchange in isobar contributions to the NN interaction. <i>Physical Review C</i> , 1984, 29, 1792-1799.	2.9	10
96	Momentum-dependent mean field based upon the Dirac-Brueckner approach for nuclear matter. <i>Physical Review C</i> , 1993, 48, 2707-2713.	2.9	10
97	Noniterative isobar diagrams and their effect in NN scattering. <i>Physical Review C</i> , 1981, 24, 1159-1174.	2.9	9
98	Charge Dependence of the π -NN Coupling Constant and Charge Dependence of the Nucleon-Nucleon Interaction. <i>Few-Body Systems</i> , 2000, 28, 139-146.	1.5	9
99	Low-momentum ring diagrams of neutron matter at and near the unitary limit. <i>Physical Review C</i> , 2008, 77, .	2.9	9
100	Elastic proton scattering off nonzero spin nuclei. <i>Physical Review C</i> , 2022, 105, .	2.9	9
101	Mesonic degrees of freedom and ground-state properties of nuclei. <i>Nuclear Physics A</i> , 1976, 262, 389-399.	1.5	8
102	Influence of the π resonance on ground-state properties of nuclei. <i>Physical Review C</i> , 1977, 15, 1432-1439.	2.9	8
103	Meson retardation and the triton binding energy. <i>Physical Review C</i> , 1988, 38, 1397-1402.	2.9	8
104	Comment Triton Binding Energy and Minimal Relativity. <i>Few-Body Systems</i> , 1998, 24, 87-90.	1.5	8
105	Conference Discussion of the Nuclear Force. <i>Few-Body Systems</i> , 2011, 50, 31-44.	1.5	8
106	Weinberg's Proposal of 1990: A Very Personal View. <i>Few-Body Systems</i> , 2021, 62, 1.	1.5	8
107	Mixed-strategy approach to band-edge analysis and modeling in semiconductors. <i>Physical Review B</i> , 2020, 101, .	3.2	8
108	Uncertainties in the two-nucleon potential and nuclear matter predictions. <i>Physical Review C</i> , 1990, 41, 2346-2352.	2.9	7

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109	One-boson-exchange potential and structure of finite nuclei in the local-density approximation. Nuclear Physics A, 1975, 251, 93-104.	1.5	6
110	Comment on "Neutron-proton spin-correlation parameter at 68 MeV". Physical Review Letters, 1994, 72, 2664-2664.	7.8	6
111	The theory of nuclear forces: Is the never-ending story coming to an end?. Nuclear Physics A, 2007, 790, 17c-23c.	1.5	6
112	Chiral Symmetry and the Nucleon-Nucleon Interaction. Symmetry, 2016, 8, 26.	2.2	6
113	Neutron matter with a relativistic one-boson-exchange potential. Nuclear Physics A, 1973, 205, 292-298.	1.5	5
114	Noniterative two-pion exchange in the nuclear medium. Physical Review C, 1980, 22, 1744-1754.	2.9	5
115	The Dirac-Brueckner Approach. International Review of Nuclear Physics, 1999, , 121-169.	1.0	5
116	Muon capture on the deuteron and the neutron-neutron scattering length. Physical Review C, 2014, 90, .	2.9	5
117	Temperature effects on the neutron matter equation of state obtained from chiral effective field theory. Modern Physics Letters A, 2020, 35, 2050156.	1.2	5
118	One-boson-exchange potential and effective interaction. Nuclear Physics A, 1974, 232, 398-416.	1.5	4
119	Hermitian folded-diagram potentials in nucleon-nucleon scattering. Physical Review C, 1985, 32, 1-10.	2.9	4
120	Role of single-particle spectrum in the ring-diagram approach for nuclear matter. Physical Review C, 1991, 43, 1469-1472.	2.9	4
121	BRUECKNER THEORY OF NUCLEAR MATTER WITH NONNUCLEONIC DEGREES OF FREEDOM AND RELATIVITY. International Journal of Modern Physics B, 2001, 15, 1535-1550.	2.0	4
122	Recent Progress in the Theory of Nuclear Forces. Few-Body Systems, 2013, 54, 821-826.	1.5	3
123	The nuclear force: Meson theory versus chiral effective field theory. International Journal of Modern Physics E, 2017, 26, 1740018.	1.0	3
124	Effects of pion-fold-pion diagrams in the energy-independent nucleon-nucleon potential. Nuclear Physics A, 1985, 443, 601-627.	1.5	2
125	Relativistic ring-diagram nuclear matter calculations. Physical Review C, 1993, 47, 2661-2665.	2.9	2
126	Nuclear Forces from Chiral EFT: The Unresolved Issues. Few-Body Systems, 2011, 50, 83-89.	1.5	2

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127	Nuclear Forces from Chiral Effective Field Theory: Achievements and Challenges. Few-Body Systems, 2013, 54, 5-10.	1.5	2
128	Chiral effective field theory for nuclear forces: Achievements and challenges. EPJ Web of Conferences, 2014, 66, 01011.	0.3	2
129	Current status of the bonn-potential. European Physical Journal D, 1982, 32, 233-236.	0.4	1
130	Nuclear forces and nuclear structure. , 1999, , .		1
131	The nuclear force problem: Are we seeing the end of the tunnel?. Nuclear Physics A, 2004, 737, 223-227.	1.5	1
132	RECENT ADVANCES IN THE THEORY OF NUCLEAR FORCES AND ITS RELEVANCE FOR THE MICROSCOPIC APPROACH TO DENSE MATTER. International Journal of Modern Physics E, 2010, 19, 1734-1742.	1.0	1
133	Nuclear forces from chiral EFT: The unfinished business. Journal of Physics: Conference Series, 2011, 267, 012014.	0.4	1
134	Chiral nucleon-nucleon forces in nuclear structure calculations. EPJ Web of Conferences, 2016, 117, 02001.	0.3	1
135	Unitary limit and linear scaling of neutrons in harmonic trap with tuned CD-Bonn and square-well interactions. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2019, 797, 134815.	4.1	1
136	CHIRAL SYMMETRY AND THE NUCLEON-NUCLEON INTERACTION: DEVELOPING AN ACCURATE NN POTENTIAL BASED UPON CHIRAL EFFECTIVE FIELD THEORY. , 2002, , .		1
137	Momentum Distributions in ^3He with Chiral Potentials. Springer Proceedings in Physics, 2020, , 439-443.	0.2	1
138	Effect of charge dependence of the nucleon-nucleon interaction on the properties of nuclear and neutron matter. Physical Review C, 1993, 47, 888-890.	2.9	0
139	Chiral Symmetry and the Nucleon-Nucleon Interaction. , 2011, , 317-343.		0
140	Nuclear forces. , 2013, , .		0
141	Study of nucleonic matter with a consistent two- and three-body perturbative chiral interaction. Journal of Physics: Conference Series, 2014, 527, 012010.	0.4	0
142	The explosion of chiral many-body forces: How to deal with it?. Journal of Physics: Conference Series, 2015, 580, 012002.	0.4	0
143	The nuclear force: Meson theory versus chiral effective field theory. , 2017, , 225-256.		0
144	Consistent, high-quality two-nucleon potentials up to fifth order of the chiral expansion. Journal of Physics: Conference Series, 2018, 966, 012011.	0.4	0

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145	BRUECKNER THEORY OF NUCLEAR MATTER WITH NONNUCLEONIC DEGREES OF FREEDOM AND RELATIVITY. , 2000, , .		0
146	ROLES OF ALL-ORDER CORE POLARIZATIONS AND BROWN-RHO SCALING IN NUCLEAR EFFECTIVE INTERACTIONS. , 2008, , .		0
147	SHELL-MODEL CALCULATIONS WITH LOW-MOMENTUM NUCLEON-NUCLEON INTERACTIONS BASED UPON CHIRAL PERTURBATION THEORY. , 2008, , .		0
148	LIVING AT THE EDGE OF STABILITY: THE ROLE OF CONTINUUM AND THREE-NUCLEON FORCES. , 2013, , .		0