Thomas Papenbrock

List of Publications by Year
in descending order

145	7,224	44069 48	58581 82
papers	citations	h-index	g-index

147	147	147	2832
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Coupled-cluster computations of atomic nuclei. Reports on Progress in Physics, 2014, 77, 096302.	20.1	368
2	Accurate nuclear radii and binding energies from a chiral interaction. Physical Review C, 2015, 91, .	2.9	354
3	Cloud Quantum Computing of an Atomic Nucleus. Physical Review Letters, 2018, 120, 210501.	7.8	269
4	Neutron and weak-charge distributions of the 48CaÂnucleus. Nature Physics, 2016, 12, 186-190.	16.7	268
5	Optimized Chiral Nucleon-Nucleon Interaction at Next-to-Next-to-Leading Order. Physical Review Letters, 2013, 110, 192502.	7.8	267
6	Unexpectedly large charge radii of neutron-rich calcium isotopes. Nature Physics, 2016, 12, 594-598.	16.7	257
7	Evolution of Shell Structure in Neutron-Rich Calcium Isotopes. Physical Review Letters, 2012, 109, 032502.	7.8	231
8	Discrepancy between experimental and theoretical Î²-decay rates resolved from first principles. Nature Physics, 2019, 15, 428-431.	16.7	195
9	Continuum Effects and Three-Nucleon Forces in Neutron-Rich Oxygen Isotopes. Physical Review Letters, 2012, 108, 242501.	7.8	193
10	Ab initiocoupled-cluster approach to nuclear structure with modern nucleon-nucleon interactions. Physical Review C, 2010, 82, .	2.9	183
11	Coupled-cluster calculations of nucleonic matter. Physical Review C, 2014, 89, .	2.9	162
12	Structure of the Lightest Tin Isotopes. Physical Review Letters, 2018, 120, 152503.	7.8	157
13	Coupled-cluster theory for three-body Hamiltonians. Physical Review C, 2007, 76, .	2.9	147
14	Medium-Mass Nuclei from Chiral Nucleon-Nucleon Interactions. Physical Review Letters, 2008, 101, 092502.	7.8	147
15	Electric Dipole Polarizability of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mmultiscripts><mml:mrow><mml:mi>Ca</mml:mi></mml:mrow><mml:mprescripts /><mml:none /><mml:mrow><mml:mn>48</mml:mn></mml:mrow></mml:mmultiscripts></mml:mrow></mml:math> and Implications for the Neutron Skin. Physical Review Letters, 2017, 118, 252501.	7.8	130
16	Coupled Cluster Calculations of Ground and Excited States of Nuclei. Physical Review Letters, 2004, 92, 132501.	7.8	119
17	Yrast Line for Weakly Interacting Trapped Bosons. Physical Review Letters, 1999, 83, 5412-5414.	7.8	112
18	Structure of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mmultiscripts><mml:mrow><mml:mi>Ni</mml:mi></mml:mrow><mml:mprescripts /><mml:none /><mml:mrow><mml:mn>78</mml:mn></mml:mrow></mml:mmultiscripts></mml:mrow></mml:math>from First-Principles Computations. Physical Review Letters, 2016, 117, 172501.	7.8	108

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19	Corrections to nuclear energies and radii in finite oscillator spaces. Physical Review C, 2012, 86, .	2.9	107
20	Ab-InitioCoupled-Cluster Study ofO16. Physical Review Letters, 2005, 94, 212501.	7.8	100
21	Orbital Dependent Nucleonic Pairing in the Lightest Known Isotopes of Tin. Physical Review Letters, 2010, 105, 162502.	7.8	98
22	Colloquium: Random matrices and chaos in nuclear spectra. Reviews of Modern Physics, 2007, 79, 997-1013.	45.6	97
23	Pairing in low-density Fermi gases. Physical Review C, 1999, 59, 2052-2055.	2.9	89
24	Simulations of subatomic many-body physics on a quantum frequency processor. Physical Review A, 2019, 100, .	2.5	87
25	Benchmark calculations forH3,He4,O16, andCa40withab initiocoupled-cluster theory. Physical Review C, 2007, 76, .	2.9	83
26	Complex coupled-cluster approach to an ab-initio description of open quantum systems. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2007, 656, 169-173.	4.1	80
27	Universal properties of infrared oscillator basis extrapolations. Physical Review C, 2013, 87, .	2.9	79
28	Charge radii of exotic potassium isotopes challenge nuclear theory and the magic character of Nâ€‰=â€‰32. Nature Physics, 2021, 17, 439-443.	16.7	79
29	Solution of the Center-Of-Mass Problem in Nuclear Structure Calculations. Physical Review Letters, 2009, 103, 062503.	7.8	78
30	Optical potential from first principles. Physical Review C, 2017, 95, .	2.9	71
31	Ground-state properties of hard-core bosons in one-dimensional harmonic traps. Physical Review A, 2003, 67, .	2.5	66
32	<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi mathvariant="normal">Î”</mml:mi></mml:math> isobars and nuclear saturation. Physical Review C, 2018, 97, .	2.9	66
33	Accurate bulk properties of nuclei from <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>A</mml:mi><mml:mo>=</mml:mo><mml:mn>2</mml:mn></mml:mrow></mml:math> to <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>âˆž</mml:mi></mml:math> from potentials with <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi	2.9	65
34	AbAlnitioComputation of the<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mmultiscripts><mml:mi mathvariant="bold">F</mml:mi><mml:mprescripts /><mml:none /><mml:mn>17</mml:mn></mml:mmultiscripts></mml:math>Proton Halo State and Resonances in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>A</mml:mi><mml:mo>=</mml:mo><mml:mn>17</mml:mn></mml:math>Nuclei. First Principles Description of the Giant Dipole Resonance in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mmultiscripts><mml:mi mathvariant="bold">O</mml:mi><mml:mprescripts /><mml:none /><mml:mn>16</mml:mn></mml:mmultiscripts></mml:math>. Physical Review Letters, 2013, 111, 122502.	7.8	60
35	First Principles Description of the Giant Dipole Resonance in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mmultiscripts><mml:mi mathvariant="bold">O</mml:mi><mml:mprescripts /><mml:none /><mml:mn>16</mml:mn></mml:mmultiscripts></mml:math>. Physical Review Letters, 2013, 111, 122502.	7.8	59
36	Emergent properties of nuclei fromab initiocoupled-cluster calculations. Physica Scripta, 2016, 91, 063006.	2.5	59

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37	Infrared length scale and extrapolations for the no-core shell model. Physical Review C, 2015, 91, .	2.9	57
38	Two-Neutron Halo is Unveiled in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mmultiscripts><mml:mrow><mml:mi mathvariant="normal">F</mml:mi></mml:mrow><mml:mprescripts /><mml:none /><mml:mrow><mml:mn>29</mml:mn></mml:mrow></mml:mmultiscripts></mml:mrow></mml:math>. Physical Review Letters, 2020, 124, 222504.	7.8	57
39	Ab initiocomputation of neutron-rich oxygen isotopes. Physical Review C, 2009, 80, .	2.9	54
40	Two-loop results from improved one loop computations. Zeitschrift FÃ¼r Physik C-Particles and Fields, 1995, 65, 519-535.	1.5	53
41	Density-functional theory for fermions in the unitary regime. Physical Review A, 2005, 72, .	2.5	53
42	Toward open-shell nuclei with coupled-cluster theory. Physical Review C, 2011, 83, .	2.9	53
43	Exploring the anomaly in the interaction cross section and matter radius of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msup><mml:mrow /><mml:mn>23</mml:mn></mml:msup></mml:math>O. Physical Review C, 2011, 84, .	2.9	52
44	Computational nuclear quantum many-body problem: The UNEDF project. Computer Physics Communications, 2013, 184, 2235-2250.	7.5	52
45	Giant and pygmy dipole resonances in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mmultiscripts><mml:mi mathvariant="normal">He</mml:mi><mml:mprescripts /><mml:none /><mml:mrow><mml:mn>4</mml:mn></mml:mrow></mml:mmultiscripts></mml:math>,<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mmultiscripts><mml:mi mathvariant="normal">O</mml:mi><mml:mprescripts /><mml:none /><mml:mrow><mml:mn>16</mml:mn></mml:m	2.9	52
46	Systematic expansion for infrared oscillator basis extrapolations. Physical Review C, 2014, 89, .	2.9	52
47	Charge radii of exotic neon and magnesium isotopes. Physical Review C, 2020, 102, .	2.9	52
48	Effects of Three-Nucleon Forces and Two-Body Currents on Gamow-Teller Strengths. Physical Review Letters, 2014, 113, 262504.	7.8	51
49	Pion-less effective field theory for atomic nuclei and lattice nuclei. Physical Review C, 2018, 98, .	2.9	47
50	Rotational spectra of weakly interacting Bose-Einstein condensates. Physical Review A, 2001, 63, .	2.5	46
51	Experimental Test of a Trace Formula for a Chaotic Three-Dimensional Microwave Cavity. Physical Review Letters, 2002, 89, 064101.	7.8	44
52	Wave Function Structure in Two-Body Random Matrix Ensembles. Physical Review Letters, 2000, 84, 4553-4556.	7.8	41
53	Ultraviolet extrapolations in finite oscillator bases. Physical Review C, 2014, 90, .	2.9	41
54	Bremsstrahlung inÎ±Decay. Physical Review Letters, 1998, 80, 4141-4144.	7.8	39

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55	Effective field theory for nuclear vibrations with quantified uncertainties. Physical Review C, 2015, 92, .	2.9	39
56	Distribution of Spectral Widths and Preponderance of Spin-0 Ground States in Nuclei. Physical Review Letters, 2004, 93, 132503.	7.8	38
57	Coherent elastic neutrino-nucleus scattering on <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mmultiscripts><mml:mi>Ar</mml:mi><mml:mprescripts /><mml:none /><mml:mn>40</mml:mn></mml:mmultiscripts></mml:math> from first principles. Physical Review C, 2019, 100, .	2.9	37
58	Electric dipole polarizability from first principles calculations. Physical Review C, 2016, 94, .	2.9	35
59	Large-scale exact diagonalizations reveal low-momentum scales of nuclei. Physical Review C, 2018, 97, .	2.9	35
60	Infrared extrapolations for atomic nuclei. Journal of Physics G: Nuclear and Particle Physics, 2015, 42, 034032.	3.6	34
61	Time-dependent coupled-cluster method for atomic nuclei. Physical Review C, 2012, 86, .	2.9	32
62	Extrapolation of nuclear structure observables with artificial neural networks. Physical Review C, 2019, 100, .	2.9	32
63	Coupled-Cluster Calculations of Neutrinoless Double- <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>Î²</mml:mi></mml:mrow></mml:math> Decay in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mmultiscripts><mml:mrow><mml:mi>Ca</mml:mi></mml:mrow><mml:mprescripts /><mml:none	7.8	32
64	Preparation of excited states for nuclear dynamics on a quantum computer. Physical Review C, 2020, 102, .	2.9	32
65	Spin structure of many-body systems with two-body random interactions. Physical Review C, 2000, 63, .	2.9	31
66	Effective theory for deformed nuclei. Nuclear Physics A, 2011, 852, 36-60.	1.5	31
67	Effective field theory for finite systems with spontaneously broken symmetry. Physical Review C, 2014, 89, .	2.9	31
68	Odd-even binding effect from random two-body interactions. Physical Review B, 2002, 65, .	3.2	30
69	Density matrix renormalization group study of critical behavior of thespinâ^'12alternating Heisenberg chain. Physical Review B, 2003, 68, .	3.2	29
70	Helium halo nuclei from low-momentum interactions. European Physical Journal A, 2009, 42, 553.	2.5	29
71	Density-functional theory for fermions close to the unitary regime. Physical Review A, 2006, 74, .	2.5	28
72	Two-body random ensemble in nuclei. Physical Review C, 2006, 73, .	2.9	27

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73	Nuclear Charge Radii of the Nickel Isotopes <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mmultiscripts><mml:mrow><mml:mi>Ni</mml:mi></mml:mrow><mml:mprescripts /><mml:none /><mml:mrow><mml:mn>58</mml:mn><mml:mo>â^’</mml:mo><mml:mn>68</mml:mn><mml:mo>,</mml:mo><mml:mn>70</mml:mn> Physical Review Letters, 2022, 128, 022502.	7.8	27
74	Factorization of shell-model ground states. Physical Review C, 2003, 67, .	2.9	25
75	Computing the dipole polarizability of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mmultiscripts><mml:mi>Ca</mml:mi><mml:mprescripts /><mml:none /><mml:mn>48</mml:mn></mml:mmultiscripts></mml:math> with increased precision. Physical Review C, 2018, 98, .	2.9	23
76	Solution of large scale nuclear structure problems by wave function factorization. Physical Review C, 2004, 69, .	2.9	22
77	Density matrix renormalization group and wavefunction factorization for nuclei. Journal of Physics G: Nuclear and Particle Physics, 2005, 31, S1377-S1383.	3.6	22
78	Infrared extrapolations of quadrupole moments and transitions. Physical Review C, 2016, 93, .	2.9	21
79	Shell-model coupled-cluster method for open-shell nuclei. Physical Review C, 2018, 98, .	2.9	21
80	Mass measurements of 99â€“101In challenge ab initio nuclear theory of the nuclide 100Sn. Nature Physics, 2021, 17, 1099-1103.	16.7	21
81	Angular-momentum projection in coupled-cluster theory: Structure of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mmultiscripts><mml:mi>Mg</mml:mi><mml:mprescripts /><mml:none /><mml:mn>34</mml:mn></mml:mmultiscripts></mml:math>. Physical Review C, 2022, 105, .	2.9	21
82	Origin of chaos in the spherical nuclear shell model: Role of symmetries. Nuclear Physics A, 2005, 757, 422-438.	1.5	20
83	Effective field theory in the harmonic oscillator basis. Physical Review C, 2016, 93, .	2.9	20
84	Numerical study of a three-dimensional generalized stadium billiard. Physical Review E, 2000, 61, 4626-4628.	2.1	18
85	Distribution of exchange energy in a bond-alternatingS=1quantum spin chain. Physical Review B, 2004, 69, .	3.2	18
86	Computation of spectroscopic factors with the coupled-cluster method. Physical Review C, 2010, 82, .	2.9	18
87	Effective theory for the nonrigid rotor in an electromagnetic field: Toward accurate and precise calculations ofE2transitions in deformed nuclei. Physical Review C, 2015, 92, .	2.9	18
88	Quantization of a Billiard Model for Interacting Particles. Physical Review Letters, 2000, 84, 262-265.	7.8	17
89	Nuclear Structure Calculations with Coupled Cluster Methods from Quantum Chemistry. Nuclear Physics A, 2005, 752, 299-308.	1.5	16
90	Comment on â€œAbÂinitioStudy ofCa40with an Importance-Truncated No-Core Shell Modelâ€• Physical Review Letters, 2008, 101, 119201; author reply 119202.	7.8	14

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91	Proton inelastic scattering reveals deformation in 8He. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2021, 822, 136710.	4.1	14
92	Universal trend of charge radii of even-even Caâ€“Zn nuclei. Physical Review C, 2022, 105, .	2.9	13
93	Scars of Invariant Manifolds in Interacting Few-Body Systems. Physical Review Letters, 1998, 80, 3057-3060.	7.8	12
94	Effective field theory for vibrations in odd-mass nuclei. Physical Review C, 2016, 94, .	2.9	12
95	Exact solutions for interacting boson systems under rotation. Journal of Physics A, 2001, 34, 603-608.	1.6	11
96	Density-functional theory for the pairing Hamiltonian. Physical Review C, 2007, 75, .	2.9	11
97	Effective field theory of emergent symmetry breaking in deformed atomic nuclei. Journal of Physics G: Nuclear and Particle Physics, 2015, 42, 105103.	3.6	11
98	Low-energy bound states, resonances, and scattering of light ions. Physical Review C, 2019, 100, .	2.9	11
99	Abundance of ground states with positive parity. Physical Review C, 2008, 78, .	2.9	10
100	Lyapunov exponents and Kolmogorov-Sinai entropy for a high-dimensional convex billiard. Physical Review E, 2000, 61, 1337-1341.	2.1	9
101	Rotational constants of multi-phonon bands in an effective theory for deformed nuclei. Physical Review C, 2013, 87, .	2.9	9
102	Collective and chaotic motion in self-bound many-body systems. Physical Review C, 2000, 61, .	2.9	8
103	Rate equations for sympathetic cooling of trapped bosons or fermions. Physical Review A, 2002, 65, .	2.5	8
104	Coupled-cluster calculations for ground and excited states of closed- and open-shell nuclei using methods of quantum chemistry. Journal of Physics G: Nuclear and Particle Physics, 2005, 31, S1291-S1299.	3.6	8
105	Energy functional for the three-level Lipkin model. Physical Review C, 2008, 78, .	2.9	8
106	Effective field theory for deformed atomic nuclei. Physica Scripta, 2016, 91, 053004.	2.5	8
107	A particle-number expansion beyond self-consistent field theory. Physics Letters, Section A: General, Atomic and Solid State Physics, 1996, 218, 229-234.	2.1	7
108	Nonergodic behavior of interacting bosons in harmonic traps. Physical Review A, 1998, 58, 4854-4861.	2.5	7

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109	Universal solutions for interacting bosons in one-dimensional harmonic traps. Physical Review A, 2002, 65, .	2.5	7
110	Phases in weakly interacting finite Bose systems. Physical Review A, 2002, 65, .	2.5	7
111	Chaos in fermionic many-body systems and the metal-insulator transition. Physical Review E, 2011, 83, 031130.	2.1	7
112	Effective field theory for deformed odd-mass nuclei. Physical Review C, 2020, 102, .	2.9	7
113	Effective shell-model interaction for nuclei â€œsoutheastâ€•of <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mmultiscripts><mml:mi>Sn</mml:mi><mml:mprescripts /><mml:none /><mml:mn>100</mml:mn></mml:mmultiscripts></mml:math>. Physical Review C, 2021, 104, .	2.9	7
114	On the special role of symmetric periodic orbits in a chaotic system. Physica D: Nonlinear Phenomena, 1999, 131, 254-264.	2.8	6
115	Sympathetic cooling and growth of a Bose-Einstein condensate. Physical Review A, 2002, 66, .	2.5	6
116	Level repulsion in constrained Gaussian random-matrix ensembles. Journal of Physics A, 2006, 39, 9709-9726.	1.6	6
117	Condensates of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>p</mml:mi></mml:math>-Wave Pairs Are Exact Solutions for Rotating Two-Component Bose Gases. Physical Review Letters, 2012, 108, 075304.	7.8	6
118	Corrections to nucleon capture cross sections computed in truncated Hilbert spaces. Physical Review C, 2017, 95, .	2.9	6
119	Nuclear charge radii of Na isotopes: Interplay of atomic and nuclear theory. Physical Review C, 2022, 105, .	2.9	6
120	Bouncing ball orbits and symmetry breaking effects in a three-dimensional chaotic billiard. Physical Review E, 2008, 77, 046221.	2.1	5
121	Occupation-number-based energy functional for nuclear masses. Physical Review C, 2012, 85, .	2.9	5
122	COUPLED-CLUSTER THEORY FOR NUCLEI. International Journal of Modern Physics B, 2006, 20, 5338-5345.	2.0	4
123	Coupling the Lorentz Integral Transform (LIT) and the Coupled Cluster (CC) Methods: A Way Towards Continuum Spectra of â€œNot-So-Few-Bodyâ€•Systems. Few-Body Systems, 2014, 55, 907-911.	1.5	4
124	Ab initio coupled cluster calculations for nuclei using methods of quantum chemistry. European Physical Journal A, 2005, 25, 485-488.	2.5	3
125	Bridging quantum chemistry and nuclear structure theory: Coupled-cluster calculations for closed- and open-shell nuclei. AIP Conference Proceedings, 2005, , .	0.4	3
126	Effective field theory of pairing rotations. Physical Review C, 2022, 105, .	2.9	3

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127	Spectral correlations in the crossover transition from a superposition of harmonic oscillators to the Gaussian unitary ensemble. Physical Review E, 1999, 59, 330-336.	2.1	2
128	Invariant manifolds and collective coordinates. Journal of Physics A, 2001, 34, 7423-7430.	1.6	2
129	A doubly magic nucleus that has two faces. Nature, 2019, 569, 49-50.	27.8	2
130	Geometric aspects of the shell model. AIP Conference Proceedings, 2005, , .	0.4	1
131	TWO-BODY RANDOM ENSEMBLE FOR NUCLEI. International Journal of Modern Physics E, 2006, 15, 1885-1895.	1.0	1
132	Computational aspects of nuclear coupled-cluster theory. Computational Science & Discovery, 2008, 1, 015008.	1.5	1
133	Electric dipole polarizability: from few- to many-body systems. EPJ Web of Conferences, 2016, 113, 04007.	0.3	1
134	A classical two-body Hamiltonian model and its mean field approximation. Nuclear Physics A, 2000, 665, 285-290.	1.5	0
135	Nuclear shell model frontiers. AIP Conference Proceedings, 2004, , .	0.4	0
136	COUPLED CLUSTER APPROACHES TO NUCLEI, GROUND STATES AND EXCITED STATES. , 2005, , .		0
137	Wave function factorization of shell-model ground states. European Physical Journal A, 2005, 25, 507-508.	2.5	0
138	COUPLED-CLUSTER THEORY FOR NUCLEI. , 2006, , .		0
139	PREPONDERANCE OF GROUND STATES WITH POSITIVE PARITY. International Journal of Modern Physics E, 2008, 17, 286-291.	1.0	0
140	APPLICATION OF GROUND-STATE FACTORIZATION TO NUCLEAR STRUCTURE PROBLEMS. , 2004, , .		0
141	AB-INITIO COUPLED CLUSTER THEORY FOR OPEN QUANTUM SYSTEMS. , 2008, , .		0
142	COUPLED-CLUSTER APPROACH TO AN AB-INITIO DESCRIPTION OF NUCLEI. , 2008, , .		0
143	LIVING AT THE EDGE OF STABILITY: THE ROLE OF CONTINUUM AND THREE-NUCLEON FORCES. , 2013, , .		0
144	Ab initio coupled cluster calculations for nuclei using methods of quantum chemistry. , 2005, , 485-488.		0

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145	Wave function factorization of shell-model ground states. , 2005, , 507-508.		0