Markus Kortelainen

List of Publications by Year
in descending order

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79 papers	3,358 citations	201674 27 h-index	138484 58 g-index
81 all docs	81 docs citations	81 times ranked	1622 citing authors

#	Article	IF	Citations
1	Nuclear energy density optimization. Physical Review C, 2010, 82, .	2.9	385
2	The limits of the nuclear landscape. Nature, 2012, 486, 509-512.	27.8	363
3	Nuclear energy density optimization: Large deformations. Physical Review C, 2012, 85, .	2.9	316
4	Nuclear energy density optimization: Shell structure. Physical Review C, 2014, 89, .	2.9	162
5	Axially deformed solution of the Skyrme-Hartreeâ€“Fockâ€“Bogoliubov equations using the transformed harmonic oscillator basis (II) hfbtho v2.00d: A new version of the program. Computer Physics Communications, 2013, 184, 1592-1604.	7.5	154
6	Improved short-range correlations and0Î½Î²Î²nuclear matrix elements ofGe76andSe82. Physical Review C, 2007, 75, .	2.9	140
7	Nuclear matrix elements of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mn>0</mml:mn><mml:mi>Î½</mml:mi><mml:mi>Î²</mml:mi><mml:mi>Î²</mml:mi></mml:mrow> with improved short-range correlations. Physical Review C, 2007, 76, .	2.9	132
8	Short-range correlations and neutrinoless double beta decay. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2007, 647, 128-132.	4.1	117
9	Local nuclear energy density functional at next-to-next-to-next-to-leading order. Physical Review C, 2008, 78, .	2.9	97
10	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
11	Microscopically based energy density functionals for nuclei using the density matrix expansion: Implementation and pre-optimization. Physical Review C, 2010, 82, .	2.9	78
12	Precision Mass Measurements beyond<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mmultiscripts><mml:mi>Sn</mml:mi><mml:mprescripts /><mml:none /><mml:mn>132</mml:mn></mml:mmultiscripts></mml:math>: Anomalous Behavior of Odd-Even Staggering of Binding Energies. Physical Review Letters, 2012, 109, 032501.	7.8	74
13	Accurate Q value for the 74Se double-electron-capture decay. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2010, 684, 17-21.	4.1	66
14	Large-scale shell-model calculations of elastic and inelastic scattering rates of lightest supersymmetric particles (LSP) on<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mmultiscripts><mml:mi mathvariant="normal">I</mml:mi><mml:mprescripts /><mml:none /><mml:mrow><mml:mn>127</mml:mn></mml:mrow></mml:mmultiscripts></mml:math>,<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mmultiscripts><mml:mi mat	2.9	57
15	Dependence of single-particle energies on coupling constants of the nuclear energy density functional. Physical Review C, 2008, 77, .	2.9	54
16	Monopole strength function of deformed superfluid nuclei. Physical Review C, 2011, 84, .	2.9	54
17	Computational nuclear quantum many-body problem: The UNEDF project. Computer Physics Communications, 2013, 184, 2235-2250.	7.5	52
18	NUCLEAR MATRIX ELEMENTS FOR DOUBLE BETA DECAY. International Journal of Modern Physics E, 2008, 17, 1-11.	1.0	48

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19	Neutron-skin uncertainties of Skyrme energy density functionals. Physical Review C, 2013, 88, .	2.9	48
20	Low-energy collective modes of deformed superfluid nuclei within the finite-amplitude method. Physical Review C, 2013, 87, .	2.9	48
21	Correlating Schiff Moments in the Light Actinides with Octupole Moments. Physical Review Letters, 2018, 121, 232501.	7.8	47
22	Testing the density matrix expansion againstab initiocalculations of trapped neutron drops. Physical Review C, 2011, 84, .	2.9	44
23	Propagation of uncertainties in the Skyrme energy-density-functional model. Physical Review C, 2013, 87, .	2.9	42
24	Error analysis of nuclear mass fits. Physical Review C, 2008, 78, .	2.9	41
25	Multipole modes in deformed nuclei within the finite amplitude method. Physical Review C, 2015, 92, .	2.9	38
26	Finite amplitude method applied to the giant dipole resonance in heavy rare-earth nuclei. Physical Review C, 2016, 93, .	2.9	37
27	Ordinary muon capture as a probe of virtual transitions of Î²Î² decay. Europhysics Letters, 2002, 58, 666-672.	2.0	35
28	First applications of the Fayans functional to deformed nuclei. Journal of Physics G: Nuclear and Particle Physics, 2015, 42, 075102.	3.6	27
29	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
30	Nuclear muon capture as a powerful probe of double-beta decays in light nuclei. Journal of Physics G: Nuclear and Particle Physics, 2004, 30, 2003-2018.	3.6	25
31	Microscopic calculation of the LSP detection rates for the 71Ga, 73Ge and 127I dark-matter detectors. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2004, 584, 31-39.	4.1	25
32	Nuclear moments and charge radii of neutron-deficient francium isotopes and isomers. Physical Review C, 2015, 91, .	2.9	23
33	Nonlocal energy density functionals for pairing and beyond-mean-field calculations. Journal of Physics G: Nuclear and Particle Physics, 2017, 44, 045106.	3.6	23
34	Emergent soft monopole modes in weakly bound deformed nuclei. Physical Review C, 2014, 90, .	2.9	21
35	Probing surface quantum flows in deformed pygmy dipole modes. Physical Review C, 2017, 96, .	2.9	20
36	Microscopic study of muon-capture transitions in nuclei involved in double-beta-decay processes. Nuclear Physics A, 2003, 713, 501-521.	1.5	19

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37	Evidence of a sudden increase in the nuclear size of proton-rich silver-96. Nature Communications, 2021, 12, 4596.	12.8	19
38	Complex-energy approach to sum rules within nuclear density functional theory. Physical Review C, 2015, 91, .	2.9	18
39	Dependence of two-proton radioactivity on nuclear pairing models. Physical Review C, 2017, 96, .	2.9	18
40	The Negeleâ€“Vautherin density-matrix expansion applied to the Gogny force. Journal of Physics G: Nuclear and Particle Physics, 2010, 37, 075106.	3.6	17
41	Lipkin method of particle-number restoration to higher orders. Physical Review C, 2014, 90, .	2.9	17
42	Event rates for CDM detectors from large-scale shell-model calculations. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2006, 632, 226-232.	4.1	16
43	Natural units for nuclear energy density functional theory. Physical Review C, 2010, 82, .	2.9	16
44	Instabilities in the nuclear energy density functional. Journal of Physics G: Nuclear and Particle Physics, 2010, 37, 064039.	3.6	15
45	Solution of universal nonrelativistic nuclear DFT equations in the Cartesian deformed harmonic-oscillator basis. (IX) HFODD (v3.06h): a new version of the program. Journal of Physics G: Nuclear and Particle Physics, 2021, 48, 102001.	3.6	13
46	Universal trend of charge radii of even-even Caâ€“Zn nuclei. Physical Review C, 2022, 105, .	2.9	13
47	Shell-model study on event rates of lightest supersymmetric particles scattering offKr83andTe125. Physical Review D, 2016, 93, .	4.7	12
48	Alpha-decay energies of superheavy nuclei for the Fayans functional. European Physical Journal A, 2017, 53, 1.	2.5	12
49	Dark-matter detection by elastic and inelastic LSP scattering on 129Xe and 131Xe. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2008, 666, 1-4.	4.1	11
50	Propagation of uncertainties in the nuclear DFT models. Journal of Physics G: Nuclear and Particle Physics, 2015, 42, 034021.	3.6	11
51	Gamow-Teller response in the configuration space of a density-functional-theoryâ€“rooted no-core configuration-interaction model. Physical Review C, 2018, 97, .	2.9	10
52	Impact of Nuclear Deformation and Pairing on the Charge Radii of Palladium Isotopes. Physical Review Letters, 2022, 128, 152501.	7.8	10
53	Theoretical direct WIMP detection rates for transitions to the first excited state inKr83. Physical Review D, 2015, 92, .	4.7	9
54	Uncertainty propagation within the UNEDF models. Journal of Physics G: Nuclear and Particle Physics, 2017, 44, 044008.	3.6	9

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55	Mean-field effects on muon-capture observables. Journal of Physics G: Nuclear and Particle Physics, 2000, 26, L33-L37.	3.6	8
56	Analysis of the 2Î½2Î²2Î² decay and muon-capture reactions for the mass A=46 and A=48 nuclei using the nuclear shell model. Physics of Atomic Nuclei, 2004, 67, 1202-1205.	0.4	8
57	Thouless-Valatin rotational moment of inertia from linear response theory. Physical Review C, 2018, 97, .	2.9	8
58	Properties of spherical and deformed nuclei using regularized pseudopotentials in nuclear DFT. Journal of Physics G: Nuclear and Particle Physics, 2020, 47, 105101.	3.6	8
59	Theoretical LSP detection rates for 71Ga, 73Ge, and 127I dark-matter detectors. Physics of Atomic Nuclei, 2004, 67, 1198-1201.	0.4	7
60	Muon-capture rates and their relation with the double-beta decay. European Physical Journal D, 2006, 56, 519-525.	0.4	6
61	Microscopic nuclear mass table with high-performance computing. Journal of Physics: Conference Series, 2012, 402, 012030.	0.4	6
62	UNEDF:Advanced Scientific Computing Collaboration Transforms the Low-Energy Nuclear Many-Body Problem. Journal of Physics: Conference Series, 2012, 402, 012033.	0.4	6
63	Fayans functional for deformed nuclei. Uranium region. EPJ Web of Conferences, 2016, 107, 02003.	0.3	6
64	Inelastic WIMP-nucleus scattering to the first excited state in125Te. Journal of Physics G: Nuclear and Particle Physics, 2016, 43, 115002.	3.6	5
65	Nucleon localization function in rotating nuclei. Physical Review C, 2020, 102, .	2.9	4
66	Nuclear matrix elements for 0Î½2Î²2Î² decay with improved short-range correlations. AIP Conference Proceedings, 2007, , .	0.4	1
67	Nuclear Energy Density Optimization: UNEDF2. , 2015, , .		1
68	Refined shell-model matrix elements for muon-capture processes. European Physical Journal D, 2000, 50, 567-575.	0.4	0
69	Analysis of the 2Î½2Î²2Î² decay and muon capture reactions for the mass A = 46 and A = 48 nuclei using the nuclear shell model. Nuclear Physics, Section B, Proceedings Supplements, 2005, 138, 227-229.	0.4	0
70	Probing double beta decay by nuclear muon capture. Nuclear Physics, Section B, Proceedings Supplements, 2005, 143, 551.	0.4	0
71	Theoretical LSP detection rates for dark-matter detectors. European Physical Journal D, 2006, 56, 467-472.	0.4	0
72	Nuclear Matrix Elements for 0Î½2Î²2Î² Decay: Recent Advances. AIP Conference Proceedings, 2008, , .	0.4	0

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73	Shell-model calculation of LSP-nucleus scattering for medium-heavy nuclei. , 2009, , .		0
74	Elastic and inelastic LSP-nucleus scattering on medium-heavy nuclei. Journal of Physics: Conference Series, 2010, 203, 012043.	0.4	0
75	Surface Flows of Soft Monopole Modes of ⁴⁰Mg. Journal of Physics: Conference Series, 2018, 966, 012051.	0.4	0
76	Small-amplitude collective modes of a finite-size unitary Fermi gas in deformed traps. Physical Review A, 2019, 100, .	2.5	0
77	Towards a Novel Energy Density Functional for Beyond-mean-field Calculations with Pairing and Deformation. Acta Physica Polonica B, 2019, 50, 269.	0.8	0
78	Thouless-Valatin moment of inertia and removal of the spurious mode in the linear response theory. Journal of Physics: Conference Series, 2020, 1643, 012142.	0.4	0
79	Regularized pseudopotential for mean-field calculations. Journal of Physics: Conference Series, 2020, 1643, 012112.	0.4	0