

# 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	Universal Charge Radii of the Nickel Isotopes. $\langle r^2 \rangle = \langle r^2 \rangle_{\text{Ni}} + \langle r^2 \rangle_{\text{charge}}$ Physical Review Letters, 2022, 128, 022502.	7.8	27
2	Universal trend of charge radii of even-even Ca–Zn nuclei. Physical Review C, 2022, 105, .	2.9	13
3	Impact of Nuclear Deformation and Pairing on the Charge Radii of Palladium Isotopes. Physical Review Letters, 2022, 128, 152501.	7.8	10
4	Evidence of a sudden increase in the nuclear size of proton-rich silver-96. Nature Communications, 2021, 12, 4596.	12.8	19
5	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
6	Charge radii of exotic potassium isotopes challenge nuclear theory and the magic character of N=32. Nature Physics, 2021, 17, 439-443.	16.7	79
7	Nucleon localization function in rotating nuclei. Physical Review C, 2020, 102, .	2.9	4
8	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
9	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
10	Regularized pseudopotential for mean-field calculations. Journal of Physics: Conference Series, 2020, 1643, 012112.	0.4	0
11	Small-amplitude collective modes of a finite-size unitary Fermi gas in deformed traps. Physical Review A, 2019, 100, .	2.5	0
12	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
13	Gamow-Teller response in the configuration space of a density-functional-theory–rooted no-core configuration-interaction model. Physical Review C, 2018, 97, .	2.9	10
14	Thouless-Valatin rotational moment of inertia from linear response theory. Physical Review C, 2018, 97, .	2.9	8
15	Correlating Schiff Moments in the Light Actinides with Octupole Moments. Physical Review Letters, 2018, 121, 232501.	7.8	47
16	Surface Flows of Soft Monopole Modes of $^{40}\text{Mg}$ . Journal of Physics: Conference Series, 2018, 966, 012051.	0.4	0
17	Alpha-decay energies of superheavy nuclei for the Fayans functional. European Physical Journal A, 2017, 53, 1.	2.5	12
18	Uncertainty propagation within the UNEDF models. Journal of Physics G: Nuclear and Particle Physics, 2017, 44, 044008.	3.6	9

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19	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
20	Probing surface quantum flows in deformed pygmy dipole modes. Physical Review C, 2017, 96, .	2.9	20
21	Dependence of two-proton radioactivity on nuclear pairing models. Physical Review C, 2017, 96, .	2.9	18
22	Fayans functional for deformed nuclei. Uranium region. EPJ Web of Conferences, 2016, 107, 02003.	0.3	6
23	Finite amplitude method applied to the giant dipole resonance in heavy rare-earth nuclei. Physical Review C, 2016, 93, .	2.9	37
24	Shell-model study on event rates of lightest supersymmetric particles scattering off Kr83 and Te125. Physical Review D, 2016, 93, .	4.7	12
25	Inelastic WIMP-nucleus scattering to the first excited state in 125Te. Journal of Physics G: Nuclear and Particle Physics, 2016, 43, 115002.	3.6	5
26	Nuclear Energy Density Optimization: UNEDF2. , 2015, , .		1
27	Multipole modes in deformed nuclei within the finite amplitude method. Physical Review C, 2015, 92, .	2.9	38
28	Theoretical direct WIMP detection rates for transitions to the first excited state in Kr83. Physical Review D, 2015, 92, .	4.7	9
29	Nuclear moments and charge radii of neutron-deficient francium isotopes and isomers. Physical Review C, 2015, 91, .	2.9	23
30	First applications of the Fayans functional to deformed nuclei. Journal of Physics G: Nuclear and Particle Physics, 2015, 42, 075102.	3.6	27
31	Propagation of uncertainties in the nuclear DFT models. Journal of Physics G: Nuclear and Particle Physics, 2015, 42, 034021.	3.6	11
32	Complex-energy approach to sum rules within nuclear density functional theory. Physical Review C, 2015, 91, .	2.9	18
33	Emergent soft monopole modes in weakly bound deformed nuclei. Physical Review C, 2014, 90, .	2.9	21
34	Lipkin method of particle-number restoration to higher orders. Physical Review C, 2014, 90, .	2.9	17
35	Nuclear energy density optimization: Shell structure. Physical Review C, 2014, 89, .	2.9	162
36	Axially deformed solution of the Skyrme-Hartree-Fock-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

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37	Computational nuclear quantum many-body problem: The UNEDF project. Computer Physics Communications, 2013, 184, 2235-2250.	7.5	52
38	Neutron-skin uncertainties of Skyrme energy density functionals. Physical Review C, 2013, 88, .	2.9	48
39	Propagation of uncertainties in the Skyrme energy-density-functional model. Physical Review C, 2013, 87, .	2.9	42
40	Low-energy collective modes of deformed superfluid nuclei within the finite-amplitude method. Physical Review C, 2013, 87, .	2.9	48
41	Precision Mass Measurements beyond $^{132}\text{Sn}$ : Anomalous Behavior of Odd-Even Staggering of Binding Energies. Physical Review Letters, 2012, 109, 032501.	7.8	74
42	Microscopic nuclear mass table with high-performance computing. Journal of Physics: Conference Series, 2012, 402, 012030.	0.4	6
43	UNEDF:Advanced Scientific Computing Collaboration Transforms the Low-Energy Nuclear Many-Body Problem. Journal of Physics: Conference Series, 2012, 402, 012033.	0.4	6
44	Nuclear energy density optimization: Large deformations. Physical Review C, 2012, 85, .	2.9	316
45	The limits of the nuclear landscape. Nature, 2012, 486, 509-512.	27.8	363
46	Monopole strength function of deformed superfluid nuclei. Physical Review C, 2011, 84, .	2.9	54
47	Testing the density matrix expansion against initial calculations of trapped neutron drops. Physical Review C, 2011, 84, .	2.9	44
48	Elastic and inelastic LSP-nucleus scattering on medium-heavy nuclei. Journal of Physics: Conference Series, 2010, 203, 012043.	0.4	0
49	Accurate Q value for the $^{74}\text{Se}$ double-electron-capture decay. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2010, 684, 17-21.	4.1	66
50	Instabilities in the nuclear energy density functional. Journal of Physics G: Nuclear and Particle Physics, 2010, 37, 064039.	3.6	15
51	Microscopically based energy density functionals for nuclei using the density matrix expansion: Implementation and pre-optimization. Physical Review C, 2010, 82, .	2.9	78
52	Natural units for nuclear energy density functional theory. Physical Review C, 2010, 82, .	2.9	16
53	Nuclear energy density optimization. Physical Review C, 2010, 82, .	2.9	385
54	The Negele-Vautherin density-matrix expansion applied to the Gogny force. Journal of Physics G: Nuclear and Particle Physics, 2010, 37, 075106.	3.6	17

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55	Large shell-model calculations of elastic and inelastic scattering rates of lightest supersymmetric particles (LSP) on $^{127}\text{I}$ . <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2008, 666, 1-4.	2.9	57
56	Shell-model calculation of LSP-nucleus scattering for medium-heavy nuclei. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2009, 677, 1-4.	2.9	0
57	Dark-matter detection by elastic and inelastic LSP scattering on $^{129}\text{Xe}$ and $^{131}\text{Xe}$ . <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2008, 666, 1-4.	4.1	11
58	NUCLEAR MATRIX ELEMENTS FOR DOUBLE BETA DECAY. <i>International Journal of Modern Physics E</i> , 2008, 17, 1-11.	1.0	48
59	Nuclear Matrix Elements for $0^+ \rightarrow 2^+$ Decay: Recent Advances. <i>AIP Conference Proceedings</i> , 2008, 959, 1-11.	0.4	0
60	Local nuclear energy density functional at next-to-next-to-next-to-leading order. <i>Physical Review C</i> , 2008, 78, .	2.9	97
61	Dependence of single-particle energies on coupling constants of the nuclear energy density functional. <i>Physical Review C</i> , 2008, 77, .	2.9	54
62	Error analysis of nuclear mass fits. <i>Physical Review C</i> , 2008, 78, .	2.9	41
63	Nuclear matrix elements for $0^+ \rightarrow 2^+$ decay with improved short-range correlations. <i>AIP Conference Proceedings</i> , 2007, 959, 1-11.	0.4	1
64	Improved short-range correlations and $0^+ \rightarrow 2^+$ nuclear matrix elements of $^{76}\text{Ge}$ and $^{82}\text{Se}$ . <i>Physical Review C</i> , 2007, 75, .	2.9	140
65	Nuclear matrix elements of $0^+ \rightarrow 2^+$ decay with improved short-range correlations. <i>Physical Review C</i> , 2007, 76, .	2.9	132
66	Short-range correlations and neutrinoless double beta decay. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2007, 647, 128-132.	4.1	117
67	Event rates for CDM detectors from large-scale shell-model calculations. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2006, 632, 226-232.	4.1	16
68	Theoretical LSP detection rates for dark-matter detectors. <i>European Physical Journal D</i> , 2006, 56, 467-472.	0.4	0
69	Muon-capture rates and their relation with the double-beta decay. <i>European Physical Journal D</i> , 2006, 56, 519-525.	0.4	6
70	Analysis of the $2^+ \rightarrow 2^+$ decay and muon capture reactions for the mass $A = 46$ and $A = 48$ nuclei using the nuclear shell model. <i>Nuclear Physics, Section B, Proceedings Supplements</i> , 2005, 138, 227-229.	0.4	0
71	Probing double beta decay by nuclear muon capture. <i>Nuclear Physics, Section B, Proceedings Supplements</i> , 2005, 143, 551.	0.4	0
72	Nuclear muon capture as a powerful probe of double-beta decays in light nuclei. <i>Journal of Physics G: Nuclear and Particle Physics</i> , 2004, 30, 2003-2018.	3.6	25

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73	Theoretical LSP detection rates for $^{71}\text{Ga}$ , $^{73}\text{Ge}$ , and $^{127}\text{I}$ dark-matter detectors. <i>Physics of Atomic Nuclei</i> , 2004, 67, 1198-1201.	0.4	7
74	Analysis of the $2\hat{1}1/2\hat{1}2\hat{1}2$ decay and muon-capture reactions for the mass $A=46$ and $A=48$ nuclei using the nuclear shell model. <i>Physics of Atomic Nuclei</i> , 2004, 67, 1202-1205.	0.4	8
75	Microscopic calculation of the LSP detection rates for the $^{71}\text{Ga}$ , $^{73}\text{Ge}$ and $^{127}\text{I}$ dark-matter detectors. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2004, 584, 31-39.	4.1	25
76	Microscopic study of muon-capture transitions in nuclei involved in double-beta-decay processes. <i>Nuclear Physics A</i> , 2003, 713, 501-521.	1.5	19
77	Ordinary muon capture as a probe of virtual transitions of $\hat{1}2\hat{1}2$ decay. <i>Europhysics Letters</i> , 2002, 58, 666-672.	2.0	35
78	Refined shell-model matrix elements for muon-capture processes. <i>European Physical Journal D</i> , 2000, 50, 567-575.	0.4	0
79	Mean-field effects on muon-capture observables. <i>Journal of Physics G: Nuclear and Particle Physics</i> , 2000, 26, L33-L37.	3.6	8