

Igor Mishustin

List of Publications by Year in descending order

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150
papers

3,543
citations

109321

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161849

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155
docs citations

155
times ranked

2165
citing authors

#	ARTICLE	IF	CITATIONS
1	Chiral phase transition within effective models with constituent quarks. <i>Physical Review C</i> , 2001, 64, .	2.9	271
2	Fast Hadronization of Supercooled Quark-Gluon Plasma. <i>Physical Review Letters</i> , 1995, 74, 5005-5008.	7.8	132
3	Physics of ion beam cancer therapy: A multiscale approach. <i>Physical Review E</i> , 2009, 79, 011909.	2.1	124
4	Nonequilibrium Phase Transition in Rapidly Expanding Matter. <i>Physical Review Letters</i> , 1999, 82, 4779-4782.	7.8	92
5	Isospin-dependent multifragmentation of relativistic projectiles. <i>Physical Review C</i> , 2011, 83, .	2.9	88
6	Strange quark stars within the Nambu–Jona-Lasinio model. <i>Physical Review D</i> , 2001, 64, .	4.7	84
7	Bulk-viscosity-driven clusterization of quark-gluon plasma and early freeze-out in relativistic heavy-ion collisions. <i>Physical Review C</i> , 2008, 77, .	2.9	82
8	Statistical evolution of isotope composition of nuclear fragments. <i>Physical Review C</i> , 2001, 63, .	2.9	80
9	Distributions of positron-emitting nuclei in proton and carbon-ion therapy studied with GEANT4. <i>Physics in Medicine and Biology</i> , 2006, 51, 6099-6112.	3.0	71
10	Instability of boost-invariant hydrodynamics with a QCD-inspired bulk viscosity. <i>Physical Review C</i> , 2008, 78, .	2.9	70
11	Equation of state of hadron resonance gas and the phase diagram of strongly interacting matter. <i>Physics of Atomic Nuclei</i> , 2009, 72, 1390-1415.	0.4	69
12	Exactly soluble model for nuclear liquid-gas phase transition. <i>Physical Review C</i> , 2000, 62, .	2.9	67
13	Universality of the diffusion wake from stopped and punch-through jets in heavy-ion collisions. <i>Physical Review C</i> , 2009, 79, .	2.9	66
14	Chiral fluid dynamics with explicit propagation of the Polyakov loop. <i>Physical Review C</i> , 2013, 87, .	2.9	61
15	Mutual heavy ion dissociation in peripheral collisions at ultrarelativistic energies. <i>Physical Review C</i> , 2001, 64, .	2.9	58
16	Antibaryons bound in nuclei. <i>Physical Review C</i> , 2005, 71, .	2.9	58
17	EMMI rapid reaction task force meeting on quark matter in compact stars. <i>Journal of Physics G: Nuclear and Particle Physics</i> , 2014, 41, 123001.	3.6	58
18	Thermodynamics of dense hadronic matter in a parity doublet model. <i>Physical Review C</i> , 2010, 82, .	2.9	57

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19	Neutrons from fragmentation of light nuclei in tissue-like media: a study with the GEANT4 toolkit. <i>Physics in Medicine and Biology</i> , 2005, 50, 5493-5507.	3.0	56
20	Chemical freeze-out of strange particles and possible root of strangeness suppression. <i>Europhysics Letters</i> , 2013, 104, 22002.	2.0	55
21	Production of heavy and superheavy neutron-rich nuclei in neutron capture processes. <i>Physical Review C</i> , 2011, 84, .	2.9	52
22	Role of fluctuations in the linear σ model with quarks. <i>Physical Review C</i> , 2004, 70, .	2.9	50
23	The three-dimensional (2 + 1)-fluid model for relativistic nuclear collisions. <i>Zeitschrift für Physik A</i> , 1993, 346, 209-216.	0.9	48
24	Formation of droplets with high baryon density at the QCD phase transition in expanding matter. <i>Nuclear Physics A</i> , 2014, 925, 14-24.	1.5	47
25	Charge-changing interactions of ultrarelativistic Pb nuclei. <i>Physical Review C</i> , 2004, 70, .	2.9	46
26	Nuclear fragmentation reactions in extended media studied with Geant4 toolkit. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2010, 268, 604-615.	1.4	45
27	Chiral Fluid Dynamics and Collapse of Vacuum Bubbles. <i>Physical Review Letters</i> , 1999, 83, 3134-3137.	7.8	44
28	Antibaryon Λ production in relativistic nuclear collisions. <i>Zeitschrift für Physik A</i> , 1991, 341, 47-52.	0.9	43
29	The impact of dissipation and noise on fluctuations in chiral fluid dynamics. <i>Journal of Physics G: Nuclear and Particle Physics</i> , 2013, 40, 055108.	3.6	42
30	Production of spectator hypermatter in relativistic heavy-ion collisions. <i>Physical Review C</i> , 2011, 84, .	2.9	41
31	Formation and breakup of extra-large composite system in central Au+Au collisions. <i>Physical Review Letters</i> , 1994, 73, 628-631.	7.8	39
32	Isotopic and microcanonical temperatures in nuclear multifragmentation. <i>Physical Review C</i> , 1998, 58, R27-R30.	2.9	39
33	Comparative study of depth-dose distributions for beams of light and heavy nuclei in tissue-like media. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2008, 266, 1094-1098.	1.4	37
34	Modification of surface energy in nuclear multifragmentation. <i>Physical Review C</i> , 2006, 74, .	2.9	36
35	Collective Deceleration of Ultrarelativistic Nuclei and Creation of Quark-Gluon Plasma. <i>Physical Review Letters</i> , 2002, 88, 112501.	7.8	35
36	Multifragmentation reactions and properties of stellar matter at subnuclear densities. <i>Physical Review C</i> , 2005, 72, .	2.9	35

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37	Radial oscillations of neutral and charged hybrid stars. <i>Europhysics Letters</i> , 2014, 105, 39001.	2.0	34
38	Hydrodynamic modeling of the deconfinement phase transition in heavy-ion collisions in the NICA FAIR energy domain. <i>Physical Review C</i> , 2011, 84, .	2.9	33
39	Longitudinal fluid dynamics for ultrarelativistic heavy-ion collisions. <i>Physical Review C</i> , 2007, 75, .	2.9	32
40	Microscopic study of freeze-out in relativistic heavy-ion collisions at 160 A GeV/c energy. <i>Physical Review C</i> , 1999, 60, .	2.9	31
41	Microdosimetry spectra and RBE of 1H, 4He, 7Li and 12C nuclei in water studied with Geant4. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2014, 320, 89-99.	1.4	31
42	Unusual bound states of quark matter within the Nambu Jona-Lasinio model. <i>Physical Review C</i> , 2000, 62, .	2.9	30
43	TABULATED EQUATION OF STATE FOR SUPERNOVA MATTER INCLUDING FULL NUCLEAR ENSEMBLE. <i>Astrophysical Journal</i> , 2014, 789, 33.	4.5	30
44	Particle emission following Coulomb excitation in ultrarelativistic heavy-ion collisions. <i>Physical Review C</i> , 1999, 60, .	2.9	29
45	PET monitoring of cancer therapy with ^3He and ^{12}C beams: a study with the GEANT4 toolkit. <i>Physics in Medicine and Biology</i> , 2007, 52, 7295-7312.	3.0	28
46	Baryon-antibaryon pair production in strong meson fields. <i>Journal of Physics G: Nuclear and Particle Physics</i> , 1993, 19, 1303-1318.	3.6	27
47	Nuclear multifragmentation induced by electromagnetic fields of ultrarelativistic heavy ions. <i>Physical Review C</i> , 1998, 57, 1920-1926.	2.9	27
48	Effective model for hot gluodynamics. <i>Physical Review C</i> , 2000, 61, .	2.9	27
49	Statistical description of nuclear break-up. <i>European Physical Journal A</i> , 2006, 30, 121.	2.5	27
50	Dynamical simulation of bound antiproton-nuclear systems and observable signals of cold nuclear compression. <i>Physical Review C</i> , 2008, 78, .	2.9	26
51	Intermediate mass fragment emission in Fe+Au collisions. <i>Physical Review C</i> , 1992, 46, 1404-1415.	2.9	25
52	Antiproton-nucleus collisions simulation within a kinetic approach with relativistic mean fields. <i>Physical Review C</i> , 2009, 80, .	2.9	24
53	Nuclear liquid-gas phase transition at large N in the van der Waals approximation. <i>Physical Review C</i> , 2010, 82, .	2.9	24
54	Electromagnetic probes of a pure-gluon initial state in nucleus-nucleus collisions at energies available at the CERN Large Hadron Collider. <i>Physical Review C</i> , 2016, 94, .	2.9	24

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55	Glueballs amass at the RHIC and LHC! The early quarkless first-order phase transition at $T = 270$ MeV from pure Yang-Mills glue plasma to Hagedorn glueball states. <i>Journal of Physics G: Nuclear and Particle Physics</i> , 2016, 43, 015105.	3.6	22
56	Bose-Einstein condensation and liquid-gas phase transition in strongly interacting matter composed of \pm particles. <i>Journal of Physics G: Nuclear and Particle Physics</i> , 2017, 44, 125102.	3.6	21
57	Neutron production and energy deposition in fissile spallation targets studied with Geant4 toolkit. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2012, 289, 79-90.	1.4	20
58	Microdosimetry of radiation field from a therapeutic ^{12}C beam in water: A study with Geant4 toolkit. <i>Nuclear Instruments & Methods in Physics Research B</i> , 2013, 310, 37-53.	1.4	20
59	Thermodynamically anomalous regions as a mixed phase signal. <i>Physics of Particles and Nuclei Letters</i> , 2015, 12, 238-245.	0.4	20
60	Metastable quark-antiquark droplets within the Nambu-Jona-Lasinio model. <i>Physical Review C</i> , 1999, 59, 3343-3356.	2.9	19
61	Comparative study of dose distributions and cell survival fractions for ^1H , ^4He , ^{12}C and ^{16}O beams using Geant4 and Microdosimetric Kinetic model. <i>Physics in Medicine and Biology</i> , 2015, 60, 3313-3331.	3.0	19
62	Mechanisms of fragment production in heavy-ion reactions at intermediate energies. <i>Zeitschrift für Physik A</i> , 1993, 345, 297-303.	0.9	18
63	Multipion droplets. <i>Journal of Physics G: Nuclear and Particle Physics</i> , 1993, 19, L101-L109.	3.6	17
64	Surface and symmetry energies in isoscaling for multifragmentation reactions. <i>Journal of Physics G: Nuclear and Particle Physics</i> , 2009, 36, 115106.	3.6	17
65	Equation of state and sound velocity of a hadronic gas with a hard-core interaction. <i>Physical Review C</i> , 2015, 91, .	2.9	17
66	Fluctuations and intermittency in multifragmentation processes. <i>Physical Review C</i> , 1992, 45, R2541-R2544.	2.9	16
67	Thermodynamically anomalous regions and possible new signals of mixed-phase formation. <i>European Physical Journal A</i> , 2016, 52, 1.	2.5	16
68	Elliptic flow and dissipation in heavy-ion collisions at $\sqrt{s} = 160$ AGeV. <i>Physical Review C</i> , 2009, 80, .	2.9	15
69	Possibility of cold nuclear compression in antiproton-nucleus collisions. <i>Physical Review C</i> , 2010, 82, .	2.9	14
70	Phase structure of a chiral model with dilatons in hot and dense matter. <i>Physical Review C</i> , 2012, 85, .	2.9	14
71	Nonequilibrium phase transition in compact stars through a violent shock. <i>Physical Review C</i> , 2015, 91, .	2.9	14
72	Condensation of interacting scalar bosons at finite temperatures. <i>Physical Review C</i> , 2019, 100, .	2.9	14

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73	Phase transitions and Bose-Einstein condensation in $\hat{1}\pm$ -nucleon matter. Physical Review C, 2019, 99, .	2.9	14
74	Strange-quark matter within the Nambu-Jona-Lasinio model. Physics of Atomic Nuclei, 2001, 64, 802-811.	0.4	13
75	Under-saturation of quarks at early stages of relativistic nuclear collisions: The hot glue initial scenario and its observable signatures. Astronomische Nachrichten, 2015, 336, 744-748.	1.2	13
76	Partitioning composite finite systems. Physical Review E, 2000, 62, R64-R67.	2.1	12
77	Isotopic yields and symmetry energy in nuclear multifragmentation reactions. Journal of Physics G: Nuclear and Particle Physics, 2012, 39, 115102.	3.6	12
78	Self-consistent calculation of the nuclear composition in hot and dense stellar matter. Physical Review C, 2017, 95, .	2.9	12
79	(1 + 1) dimensional hydrodynamics for high-energy heavy-ion collisions. Physics of Atomic Nuclei, 2007, 70, 1773-1796.	0.4	10
80	Role of bulk energy in nuclear multifragmentation. Physical Review C, 2008, 77, .	2.9	10
81	Production of exotic hypernuclei from excited nuclear systems. Physical Review C, 2012, 86, .	2.9	10
82	Entropy production in chemically nonequilibrium quark-gluon plasma created in central $Pb-Pb$ collisions at energies available at the CERN Large Hadron Collider. Physical Review C, 2016, 93, .	2.9	10
83	Possible links between the liquid-gas and deconfinement-hadronization phase transitions. European Physical Journal A, 2006, 30, 311-316.	2.5	9
84	Monte Carlo modeling of spallation targets containing uranium and americium. Nuclear Instruments & Methods in Physics Research B, 2014, 334, 8-17.	1.4	9
85	Q -balls of clusterized baryonic matter. Modern Physics Letters A, 2017, 32, 1750010.	1.2	9
86	Phase diagram of $\hat{1}\pm$ matter with a Skyrme-like scalar interaction. Physical Review C, 2021, 103, .	2.9	9
87	Constraints on possible phase transitions above the nuclear saturation density. Physical Review C, 2002, 66, .	2.9	8
88	POSSIBILITY OF SYNTHESIZING SUPERHEAVY ELEMENTS IN NUCLEAR EXPLOSIONS. International Journal of Modern Physics E, 2010, 19, 2063-2075.	1.0	8
89	Evolution of antibaryon abundances in the early universe and in heavy-ion collisions. Physical Review C, 2013, 88, .	2.9	8
90	Distributions of deposited energy and ionization clusters around ion tracks studied with Geant4 toolkit. Physics in Medicine and Biology, 2016, 61, 3698-3711.	3.0	8

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91	Possible Bose-Einstein condensation of $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:mi} \rangle \hat{1} \pm \langle \text{mml:mi} \rangle \langle \text{mml:math} \rangle$ particles in the ground state of nuclear matter. Physical Review C, 2020, 101, .	2.9	8
92	Baryon-antibaryon pair production in time-dependent meson fields. Physical Review C, 1995, 52, 3315-3331.	2.9	7
93	Equilibrium nuclear ensembles taking into account vaporization of hot nuclei in dense stellar matter. Physical Review C, 2018, 97, .	2.9	7
94	Equilibration and freeze-out in an exploding system. Physical Review C, 2001, 65, .	2.9	6
95	Modeling spallation reactions in tungsten and uranium targets with the Geant4 toolkit. EPJ Web of Conferences, 2012, 21, 10006.	0.3	6
96	Nanolesions induced by heavy ions in human tissues: Experimental and theoretical studies. Beilstein Journal of Nanotechnology, 2012, 3, 556-563.	2.8	6
97	Bose-stimulated pion production in relativistic nuclear collisions. Physical Review C, 1995, 51, 2099-2112.	2.9	5
98	Ion-beam therapy: from electron production in tissue like media to DNA damage estimations. , 2008, , .		5
99	Baryon stopping and partonic plasma production by strong chromofields. Physical Review C, 2011, 84, .	2.9	5
100	The QCD phase transition in a fully dynamical model of heavy-ion collisions. Journal of Physics: Conference Series, 2014, 509, 012065.	0.4	5
101	Lateral variations of radiobiological properties of therapeutic fields of $\langle \text{sup} \rangle 1 \langle \text{sup} \rangle \text{H}$, $\langle \text{sup} \rangle 4 \langle \text{sup} \rangle \text{He}$, $\langle \text{sup} \rangle 12 \langle \text{sup} \rangle \text{C}$ and $\langle \text{sup} \rangle 16 \langle \text{sup} \rangle \text{O}$ ions studied with Geant4 and microdosimetric kinetic model. Physics in Medicine and Biology, 2017, 62, 5884-5907.	3.0	5
102	Evolution of pion phase-space density and Bose-enhancement effects in high-energy heavy-ion collisions. Zeitschrift für Physik A, 1992, 342, 309-317.	0.9	4
103	Comment on "Investigating the Phase Diagram of Finite Extensive and Nonextensive Systems", Physical Review Letters, 2003, 90, 179201; author 179202.	7.8	4
104	Possible glueball production in relativistic heavy-ion collisions. Journal of Physics G: Nuclear and Particle Physics, 2006, 32, L59-L63.	3.6	4
105	Effects of medium on nuclear properties in multifragmentation. Physical Review C, 2012, 86, .	2.9	4
106	Baryon deceleration and partonic plasma creation by strong chromofields in ultrarelativistic heavy-ion collisions. Physics of Atomic Nuclei, 2012, 75, 371-392.	0.4	4
107	Monte Carlo simulations of Microdosimetry for Space Research at FAIR. Journal of Physics: Conference Series, 2013, 426, 012006.	0.4	4
108	Strangeness in Quark Matter: Opening Talk. Journal of Physics: Conference Series, 2014, 509, 012002.	0.4	4

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109	Degeneracy effects and Bose condensation in warm nuclear matter with light and heavy clusters. Nuclear Physics A, 2020, 1002, 121991.	1.5	4
110	Microscopic model for rapid hadronization of supercooled Quark-Gluon Plasma. Acta Physica Hungarica A Heavy Ion Physics, 1996, 3, 151-176.	0.4	4
111	Fluid dynamical description of the chiral transition. Acta Physica Hungarica A Heavy Ion Physics, 1997, 5, 377-385.	0.4	4
112	RELATIVISTIC FLUID-DYNAMICAL APPROACH FOR NUCLEAR COLLISIONS AT ENERGIES FROM 1 TO 100 GeV PER NUCLEON. International Review of Nuclear Physics, 1991, , 179-218.	1.0	3
113	The excitation function of Au + Au in the framework of the (2+1)-fluid model. Zeitschrift für Physik A, 1993, 346, 251-252.	0.9	3
114	Dilepton production by bremsstrahlung of meson fields in nuclear collisions. Physical Review C, 1998, 57, 2552-2558.	2.9	3
115	Hydrodynamic modeling of deconfinement phase transition in nuclear collision. Physics of Atomic Nuclei, 2012, 75, 776-780.	0.4	3
116	Implementation of chromomagnetic gluons in Yang-Mills thermodynamics. Physical Review D, 2014, 89, .	4.7	3
117	Instability of ρ -boson vacuum in highly compressed baryonic matter. Journal of Physics G: Nuclear and Particle Physics, 2015, 42, 075104.	3.6	3
118	MCHIT - Monte Carlo model for proton and Heavy-Ion Therapy. , 2007, , .		3
119	Anomalous Fragments and Quasi-One-Dimensional Nuclear Systems. Physica Scripta, 1984, 30, 293-296.	2.5	2
120	Collective mechanism of dilepton production in high-energy nuclear collisions. Journal of Physics G: Nuclear and Particle Physics, 1998, 24, L17-L21.	3.6	2
121	Studying phase transitions in nuclear collisions. AIP Conference Proceedings, 2000, , .	0.4	2
122	Possible production of strongly bound baryonia in relativistic heavy-ion collisions. Journal of Physics G: Nuclear and Particle Physics, 2005, 31, 803-808.	3.6	2
123	Stellar matter in supernova explosions and nuclear multifragmentation. Physics of Atomic Nuclei, 2008, 71, 1088-1093.	0.4	2
124	Electromagnetic and hadronic interactions of ultrarelativistic nuclei. Physics of Atomic Nuclei, 2011, 74, 139-150.	0.4	2
125	Nonequilibrium effects in hadronic fireball expansion. Physical Review C, 2012, 85, .	2.9	2
126	Realistic electrostatic potentials in a neutron star crust. Journal of Physics G: Nuclear and Particle Physics, 2015, 42, 105201.	3.6	2

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127	Possible Production of Neutron-Rich Heavy Nuclei in Fissile Spallation Targets. , 2015, , 151-161.		2
128	Monte Carlo Modeling of Minor Actinide Burning in Fissile Spallation Targets. , 2014, , .		2
129	Cold compression of nuclei induced by antiprotons. Hyperfine Interactions, 2009, 194, 263-269.	0.5	1
130	Surface and Symmetry Energy Effects in Nuclear Multifragmentation. , 2009, , .		1
131	Towards the equation of state for dense stellar matter. Journal of Physics: Conference Series, 2010, 202, 012003.	0.4	1
132	Modeling a delayed phase transition in the early universe. Journal of Physics G: Nuclear and Particle Physics, 2014, 41, 125005.	3.6	1
133	Nonlinear oscillations of compact stars in the vicinity of the maximum mass configuration. Europhysics Letters, 2015, 111, 29001.	2.0	1
134	Nuclear structure calculations for neutron star crusts. European Physical Journal A, 2018, 54, 1.	2.5	1
135	More-Fluid Models for Ultrarelativistic Nuclear Collisions. NATO ASI Series Series B: Physics, 1994, , 697-707.	0.2	1
136	TOWARDS MONTE CARLO CALCULATIONS OF BIOLOGICAL DOSE IN HEAVY-ION THERAPY: MODELING OF NUCLEAR FRAGMENTATION REACTIONS. , 2008, , 401-410.		1
137	Baryons and antibaryons in an anisotropic universe. Astrophysics, 1973, 7, 158-163.	0.5	0
138	ArkadiĀ-Benediktovich Migdal (on his seventieth birthday). Uspekhi Fizicheskikh Nauk, 1981, 24, 336-339.	0.3	0
139	Antibaryons bound in nuclei?. AIP Conference Proceedings, 2005, , .	0.4	0
140	Bulk-viscosity-driven freeze-out in heavy ion collision. Progress in Particle and Nuclear Physics, 2009, 62, 568-573.	14.4	0
141	Quarkyonic Matter and Quark Number Scaling of Elliptic Flow. , 2011, , .		0
142	Formation of super-heavy elements in astrophysical nucleosynthesis. , 2012, , .		0
143	Dynamics and stability of chiral fluid. Physics of Atomic Nuclei, 2014, 77, 1130-1144.	0.4	0
144	How spinodal decomposition influences observables at FAIR energies. Journal of Physics: Conference Series, 2014, 503, 012004.	0.4	0

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145	Synthesis of neutron-rich transuranic nuclei in fissile spallation targets. Nuclear Instruments & Methods in Physics Research B, 2015, 349, 133-140.	1.4	0
146	PROPERTIES OF HEAVY AND SUPERHEAVY NUCLEI IN SUPERNOVA ENVIRONMENTS. , 2008, , 44-51.		0
147	Phase Transitions and Bose-Einstein Condensation in Alpha-Nucleon Matter. Ukrainian Journal of Physics, 2019, 64, 745.	0.2	0
148	Statistical description of nuclear break-up. , 2006, , 121-128.		0
149	Rapid hadronization and strangeness production. Acta Physica Hungarica A Heavy Ion Physics, 1996, 4, 45-54.	0.4	0
150	Bose-Einstein condensation in finite drops of $\langle \text{mml:math} \text{xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:mi} \rangle \hat{\pm} \langle \text{mml:mi} \rangle \langle \text{mml:math} \rangle$ particles. Physical Review C, 2022, 106, .	2.9	0