

Volker Koch

List of Publications by Year in descending order

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120
papers

5,027
citations

76326

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95266

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121
all docs

121
docs citations

121
times ranked

1921
citing authors

#	ARTICLE	IF	CITATIONS
1	Charged Particle Ratio Fluctuation as a Signal for Quark-Gluon Plasma. Physical Review Letters, 2000, 85, 2076-2079.	7.8	355
2	Mapping the phases of quantum chromodynamics with beam energy scan. Physics Reports, 2020, 853, 1-87.	25.6	247
3	Baryon-Strangeness Correlations: A Diagnostic of Strongly Interacting Matter. Physical Review Letters, 2005, 95, 182301.	7.8	227
4	Properties of hot and dense matter from relativistic heavy ion collisions. Physics Reports, 2016, 621, 76-126.	25.6	227
5	Fluctuations of Particle Ratios and the Abundance of Hadronic Resonances. Physical Review Letters, 1999, 83, 5435-5438.	7.8	145
6	Cherenkov Radiation from Jets in Heavy-Ion Collisions. Physical Review Letters, 2006, 96, 172302.	7.8	136
7	K^{\pm} -proton scattering and the $\Lambda(1405)$ in dense matter. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1994, 337, 7-13.	4.1	132
8	Acceptance corrections to net baryon and net charge cumulants. Physical Review C, 2012, 86, .	2.9	124
9	Baryon number conservation and the cumulants of the net proton distribution. Physical Review C, 2013, 87, .	2.9	120
10	Medium modified cross sections, temperature and finite momentum effects for antikaon production in heavy-ion collisions. Nuclear Physics A, 2000, 669, 153-172.	1.5	119
11	Azimuthal correlations from transverse momentum conservation and possible local parity violation. Physical Review C, 2011, 83, .	2.9	117
12	Pion collectivity in relativistic heavy-ion collisions. Nuclear Physics A, 1988, 490, 745-755.	1.5	107
13	Transport-theoretical analysis of relativistic heavy-ion collisions. Reports on Progress in Physics, 1993, 56, 1-62.	20.1	105
14	Event-by-event fluctuations in collective quantities. Physical Review C, 1999, 60, .	2.9	104
15	Remarks on possible local parity violation in heavy ion collisions. Physical Review C, 2010, 81, .	2.9	94
16	Aspects of Chiral Symmetry. International Journal of Modern Physics E, 1997, 06, 203-249.	1.0	89
17	Status of the chiral magnetic effect and collisions of isobars. Chinese Physics C, 2017, 41, 072001.	3.7	88
18	Event-by-event fluctuations of the charged particle ratio from nonequilibrium transport theory. Physical Review C, 2000, 62, .	2.9	84

#	ARTICLE	IF	CITATIONS
19	All the fun of the FAIR: fundamental physics at the facility for antiproton and ion research. Physica Scripta, 2019, 94, 033001.	2.5	79
20	Charge-Dependent Correlations in Relativistic Heavy Ion Collisions and the Chiral Magnetic Effect. Lecture Notes in Physics, 2013, , 503-536.	0.7	77
21	Microscopic study of deuteron production in PbPb collisions at $\sqrt{s} = 2.76$ TeV via hydrodynamics and a hadronic afterburner. Physical Review C, 2019, 99, .	2.9	78
22	PROPERTIES OF HADRONS IN THE NUCLEAR MEDIUM. Annual Review of Nuclear and Particle Science, 1997, 47, 505-539.	10.2	71
23	A relativistic effective interaction for heavy-ion collisions. Nuclear Physics A, 1992, 539, 713-751.	1.5	67
24	Charge separation effect in relativistic heavy ion collisions. Physical Review C, 2010, 82, .	2.9	65
25	Local efficiency corrections to higher order cumulants. Physical Review C, 2015, 91, .	2.9	64
26	Covariant Boltzmann-Uehling-Uhlenbeck approach for heavy-ion collisions. Physical Review C, 1988, 38, 1767-1775.	2.9	58
27	Dynamics of critical fluctuations: Theory $\hat{=}$ phenomenology $\hat{=}$ heavy-ion collisions. Nuclear Physics A, 2020, 1003, 122016.	1.5	54
28	Dynamical and thermal aspects of relativistic heavy-ion collisions. Zeitschrift fr Physik A, 1991, 340, 287-295.	0.9	53
29	Signals of spinodal hadronization: Strangeness trapping. Physical Review C, 2005, 72, .	2.9	53
30	Propagation of quarks in the spatial direction in hot QCD. Physical Review D, 1992, 46, 3169-3179.	4.7	51
31	The BEST framework for the search for the QCD critical point and the chiral magnetic effect. Nuclear Physics A, 2022, 1017, 122343.	1.5	51
32	Model of the thermodynamics of the chiral restoration transition. Nuclear Physics A, 1993, 560, 345-364.	1.5	49
33	Transport model with quasipions. Physical Review C, 1993, 47, 788-794.	2.9	49
34	The pion at finite temperature and density. Nuclear Physics A, 1991, 535, 701-714.	1.5	46
35	Cumulants and correlation functions versus the QCD phase diagram. Physical Review C, 2017, 95, .	2.9	46
36	Kinetic Equation with Exact Charge Conservation. Physical Review Letters, 2001, 86, 5438-5441.	7.8	42

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37	Ŧmeson propagation in a hot hadronic gas. <i>Physical Review C</i> , 2002, 65, .	2.9	42
38	Mean-field effects and apparent temperatures of nucleons and antinucleons. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 1991, 265, 29-34.	4.1	41
39	Dilepton production in ultrarelativistic heavy-ion collisions. <i>Physical Review C</i> , 1996, 54, 1903-1917.	2.9	41
40	A machine learning study to identify spinodal clumping in high energy nuclear collisions. <i>Journal of High Energy Physics</i> , 2019, 2019, 1.	4.7	41
41	Non-equilibrium phase transition in relativistic nuclear collisions: Importance of the equation of state. <i>Physical Review C</i> , 2014, 89, .	2.9	37
42	Event-by-event fluctuations and inclusive distributions. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 1999, 456, 1-4.	4.1	36
43	Connecting fluctuation measurements in heavy-ion collisions with the grand-canonical susceptibilities. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2020, 811, 135868.	4.1	35
44	Multiplicity-dependent and nonbinomial efficiency corrections for particle number cumulants. <i>Physical Review C</i> , 2016, 94, .	2.9	34
45	Event-by-event fluctuations and the QGP. <i>Nuclear Physics A</i> , 2002, 698, 261-268.	1.5	33
46	Transverse flow of fragments in the relativistic BUU model. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 1990, 241, 174-177.	4.1	32
47	Fluidity and supercriticality of the QCD matter created in relativistic heavy ion collisions. <i>Physical Review C</i> , 2010, 81, .	2.9	32
48	Microcanonical Particlization with Local Conservation Laws. <i>Physical Review Letters</i> , 2019, 123, 182302.	7.8	32
49	Crossover transition in bag-like models. <i>Physical Review C</i> , 2009, 79, .	2.9	30
50	The relativistic buu approach: Analysis of retardation effects and meson-field radiation. <i>Nuclear Physics A</i> , 1990, 515, 747-760.	1.5	28
51	Correlated stopping, proton clusters and higher order proton cumulants. <i>European Physical Journal C</i> , 2017, 77, 1.	3.9	28
52	Pion electromagnetic form factor at finite temperature. <i>Physical Review C</i> , 1996, 54, 3218-3231.	2.9	27
53	Chemical relaxation time of pions in hot hadronic matter. <i>Physical Review C</i> , 1997, 55, 3026-3037.	2.9	27
54	Shear viscosity of hadrons with K-matrix cross sections. <i>Physical Review C</i> , 2013, 88, .	2.9	27

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55	Large proton cumulants from the superposition of ordinary multiplicity distributions. Physical Review C, 2018, 98, .	2.9	27
56	Medium effects on kaon and antikaon spectra in heavy-ion collisions. Physical Review C, 1993, 47, 1678-1682.	2.9	26
57	Some remarks on the statistical model of heavy ion collisions. Nuclear Physics A, 2003, 715, 108c-117c.	1.5	25
58	Deuteron production in AuAu collisions at $\sqrt{s} = 2.76$ GeV via pion catalysis. Physical Review C, 2021, 103, .	2.9	25
59	Energy dependence of K fluctuations in relativistic heavy-ion collisions. Physical Review C, 2010, 81, .	2.9	24
60	EVENT BY EVENT FLUCTUATIONS. , 2004, , 430-490.		24
61	Origin of transverse momentum in relativistic heavy-ion collisions: Microscopic study. Physical Review C, 1991, 43, 2728-2733.	2.9	22
62	Thermal effects on dilepton production from $\bar{\chi}\chi$ annihilation. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1996, 366, 379-384.	4.1	22
63	Particization of an interacting hadron resonance gas with global conservation laws for event-by-event fluctuations in heavy-ion collisions. Physical Review C, 2021, 103, .	2.9	22
64	Proton number cumulants and correlation functions in Au-Au collisions at $\sqrt{s} = 2.76$ GeV from hydrodynamics. Physical Review C, 2022, 105, .	2.9	22
65	Six quark cluster effects and binding energy differences between mirror nuclei. Physical Review C, 1985, 31, 602-612.	2.9	20
66	Local thermodynamic properties and equilibration in relativistic heavy-ion collisions. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1990, 245, 147-152.	4.1	20
67	Analysis of intermediate-energy heavy-ion collisions within a relativistic transport model. Nuclear Physics A, 1991, 532, 715-742.	1.5	20
68	Cumulants of multiple conserved charges and global conservation laws. Journal of High Energy Physics, 2020, 2020, 1.	4.7	20
69	Phase transitions and critical behavior in hadronic transport with a relativistic density functional equation of state. Physical Review C, 2021, 104, .	2.9	20
70	Fluctuations of rare particles as a measure of chemical equilibration. Nuclear Physics A, 2002, 697, 546-562.	1.5	19
71	Transverse momentum analysis in the relativistic BUU approach. Nuclear Physics A, 1989, 495, 381-389.	1.5	18
72	Rapidity dependence of proton cumulants and correlation functions. Physical Review C, 2017, 96, .	2.9	18

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73	Effects of collective potentials on pion spectra in relativistic heavy-ion collisions. Nuclear Physics A, 1993, 552, 591-604.	1.5	17
74	Branching ratio change in K^0 absorption at rest and the nature of the $\Lambda(1405)$. Physical Review C, 1997, 56, 2767-2773.	2.9	17
75	Dileptons from disoriented chiral condensates. Physical Review C, 1998, 57, 280-290.	2.9	16
76	Exposing the Noncollectivity in Elliptic Flow. Physical Review Letters, 2009, 103, 042302.	7.8	16
77	Effects of local event-by-event conservation laws in ultrarelativistic heavy-ion collisions at particlization. Physical Review C, 2020, 102, .	2.9	16
78	Influence of the momentum dependence of nuclear interactions on heavy-ion potentials. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1988, 206, 395-398.	4.1	15
79	Charge symmetry breaking and the neutron-proton mass difference. Nuclear Physics A, 1993, 562, 644-658.	1.5	15
80	Mean-field approach to flavor susceptibilities with a vector interaction. Physical Review C, 2011, 83, .	2.9	15
81	Hadronic Fluctuations and Correlations. Landolt-Börnstein - Group I Elementary Particles, Nuclei and Atoms, 2010, , 626-652.	0.2	15
82	Effect of finite particle number sampling on baryon number fluctuations. Physical Review C, 2017, 96, .	2.9	14
83	Speed of Sound and Baryon Cumulants in Heavy-Ion Collisions. Physical Review Letters, 2021, 127, 042303.	7.8	14
84	Photon production in relativistic heavy-ion collisions. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1990, 236, 135-139.	4.1	13
85	Mapping the QCD phase diagram with statistics-friendly distributions. Physical Review C, 2019, 100, .	2.9	13
86	Lifetime of a Disoriented Chiral Condensate. Physical Review Letters, 1998, 81, 4096-4099.	7.8	12
87	Temperature dependence of correlation functions in the spacelike direction in hot QCD. Physical Review D, 1994, 49, 6063-6071.	4.7	11
88	Cold kaons from hot fireballs. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1995, 351, 29-36.	4.1	11
89	Correlations and fluctuations: status and perspectives. Journal of Physics C: Nuclear and Particle Physics, 2008, 35, 104030.	3.6	11
90	Analytical relativistic ideal hydrodynamical solutions in (1+3)D with longitudinal and transverse flows. Physical Review C, 2009, 80, .	2.9	11

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91	Dynamics of heavy-ion reactions and the nuclear equation of state. Nuclear Physics A, 1990, 519, 357-374.	1.5	10
92	Constraining baryon annihilation in the hadronic phase of heavy-ion collisions via event-by-event fluctuations. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2022, 827, 136983.	4.1	10
93	Chemical equilibration volume: Measuring the degree of thermalization. Physical Review C, 2003, 68, .	2.9	9
94	Critical point particle number fluctuations from molecular dynamics. Physical Review C, 2022, 105, .	2.9	9
95	Elliptic Flow at Large Viscosity. Nuclear Physics A, 2009, 830, 479c-482c.	1.5	8
96	Constraining the hadronic spectrum and repulsive interactions in a hadron resonance gas via fluctuations of conserved charges. Physical Review D, 2021, 104, .	4.7	7
97	Cold kaons from hot fireballs. Nuclear Physics A, 1995, 590, 531-534.	1.5	6
98	Net-baryon multiplicity distribution consistent with lattice QCD. Physical Review C, 2019, 99, .	2.9	6
99	Baryon number and strangeness: signals of a deconfined antecedent. Journal of Physics: Conference Series, 2005, 27, 184-193.	0.4	5
100	Charge fluctuations and electric mass in a hot meson gas. Physical Review C, 2007, 76, .	2.9	5
101	Centrality Dependence of Deuteron Production in PbPb Collisions at 2.76 TeV via Hydrodynamics and Hadronic Afterburner +. Proceedings (mdpi), 2019, 10, 6.	0.2	5
102	Efficiency corrections for factorial moments and cumulants of overlapping sets of particles. Nuclear Physics A, 2021, 1010, 122179.	1.5	5
103	Critical point signatures in the cluster expansion in fugacities. Physical Review D, 2020, 101, .	4.7	4
104	The ϕ mean free path in hot hadronic matter. Journal of Physics G: Nuclear and Particle Physics, 2002, 28, 1527-1534.	3.6	3
105	Strangeness at SIS energies. Journal of Physics G: Nuclear and Particle Physics, 2004, 30, S41-S50.	3.6	3
106	Fluctuations and Correlations in Heavy Ion Collisions. Journal of Physics: Conference Series, 2006, 50, 95-102.	0.4	2
107	Baryon-strangeness correlations: a diagnostic of strongly interacting matter. Nuclear Physics A, 2006, 774, 841-844.	1.5	2
108	Strangeness trapping. Nuclear Physics A, 2006, 774, 643-646.	1.5	2

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109	The QCD phase diagram and statistics friendly distributions. Nuclear Physics A, 2021, 1005, 121968.	1.5	2
110	Dileptons from disoriented chiral condensates. Nuclear Physics A, 1998, 638, 447c-450c.	1.5	1
111	Event-by-Event Fluctuations in Heavy Ion Collisions. Acta Physica Hungarica A Heavy Ion Physics, 2001, 14, 227-237.	0.4	1
112	Equilibrium in Heavy Ion Collisions. Acta Physica Hungarica A Heavy Ion Physics, 2004, 21, 273-278.	0.4	1
113	Two particle correlations in jets and triggered distributions in hot and cold matter. Nuclear Physics A, 2006, 774, 561-564.	1.5	1
114	Particle correlations and the chiral magnetic effect. European Physical Journal A, 2016, 52, 1.	2.5	1
115	Cumulants vs correlation functions and the QCD phase diagram at low energies. Nuclear Physics A, 2017, 967, 465-467.	1.5	1
116	Evaluation of particle-anti-particle scaled correlation within effective models. Nuclear Physics A, 2020, 994, 121655.	1.5	1
117	Bremsstrahlung dileptons in ultrarelativistic heavy ion collisions. Physical Review C, 1998, 58, 3763-3766.	2.9	0
118	The Relativistic BUU Approach – Analysis of Retardation Effects and Thermal Properties. NATO ASI Series Series B: Physics, 1989, , 321-330.	0.2	0
119	Momentum Dependent Potentials in Relativistic Heavy Ion Collisions. NATO ASI Series Series B: Physics, 1989, , 471-473.	0.2	0
120	Net-particle number fluctuations in a hydrodynamic description of heavy-ion collisions. EPJ Web of Conferences, 2022, 259, 10011.	0.3	0