Francesco Becattini

List of Publications by Year
in descending order

104 papers	5,941 citations	66343 42 h-index	69250 77 g-index
110 all docs	110 docs citations	110 times ranked	1724 citing authors

#	Article	IF	Citations
1	Energy and system size dependence of chemical freeze-out in relativistic nuclear collisions. Physical Review C, 2006, 73, .	2.9	338
2	Features of particle multiplicities and strangeness production in central heavy ion collisions between1.7Aand158A€‚GeV/c. Physical Review C, 2001, 64, .	2.9	318
3	Angular momentum conservation in heavy ion collisions at very high energy. Physical Review C, 2008, 77, .	2.9	281
4	Relativistic distribution function for particles with spin at local thermodynamical equilibrium. Annals of Physics, 2013, 338, 32-49.	2.8	261
5	Thermal hadron production in pp and $\mathrm{par{p}};$ collisions. Zeitschrift Für Physik C-Particles and Fields, 1997, 76, 269-286.	1.5	250
6	Chemical equilibrium study in nucleus-nucleus collisions at relativistic energies. Physical Review C, 2004, 69, .	2.9	234
7	A thermodynamical approach to hadron production in e^+e^- collisions. Zeitschrift Für Physik C-Particles and Fields, 1996, 69, 485-492.	1.5	233
8	Global hyperon polarization at local thermodynamic equilibrium with vorticity, magnetic field, and feed-down. Physical Review C, 2017, 95, .	2.9	193
9	Study of $$Lambda $$ Λ polarization in relativistic nuclear collisions at $$sqrt{s_\mathrm{NN}}=7.7$$ s NN = 7.7 –200ÂGeV. European Physical Journal C, 2017, 77, 1.	3.9	174
10	`<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>Λ</mml:mi></mml:math>` polarization in peripheral heavy ion collisions. Physical Review C, 2013, 88, .	2.9	169
11	A study of vorticity formation in high energy nuclear collisions. European Physical Journal C, 2015, 75, 1.	3.9	169
12	Collective Longitudinal Polarization in Relativistic Heavy-Ion Collisions at Very High Energy. Physical Review Letters, 2018, 120, 012302.	7.8	145
13	Hadron Formation in Relativistic Nuclear Collisions and the QCD Phase Diagram. Physical Review Letters, 2013, 111, 082302.	7.8	137
14	On chemical equilibrium in nuclear collisions. European Physical Journal C, 1998, 5, 143-153.	3.9	130
15	Numerical magneto-hydrodynamics for relativistic nuclear collisions. European Physical Journal C, 2016, 76, 1.	3.9	128
16	Polarization and Vorticity in the Quark–Gluon Plasma. Annual Review of Nuclear and Particle Science, 2020, 70, 395-423.	10.2	117
17	Statistical hadronization model and transverse momentum spectra of hadrons in high energy collisions. European Physical Journal C, 2002, 23, 551-583.	3.9	116
18	Local thermodynamical equilibrium and the $$eta $$ β frame for a quantum relativistic fluid. European Physical Journal C, 2015, 75, 1.	3.9	95

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19	Spin tensor and its role in non-equilibrium thermodynamics. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2019, 789, 419-425.	4.1	93
20	A comparative analysis of statistical hadron production. European Physical Journal C, 2010, 66, 377-386.	3.9	92
21	Relativistic viscous hydrodynamics for heavy-ion collisions with ECHO-QGP. European Physical Journal C, 2013, 73, 1.	3.9	90
22	The thermal production of strange and non-strange hadrons in Âe + e â˜’ collisions. European Physical Journal C, 2008, 56, 493-510.	3.9	85
23	The ideal relativistic spinning gas: Polarization and spectra. Annals of Physics, 2008, 323, 2452-2473.	2.8	84
24	Spin-thermal shear coupling in a relativistic fluid. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2021, 820, 136519.	4.1	80
25	Chemical freeze-out in ultrarelativistic heavy ion collisions at $\sqrt{s_{NN}} = 130$ 200 GeV. Physical Review C, 2008, 78, .	2.9	79
26	Covariant Statistical Mechanics and the Stress-Energy Tensor. Physical Review Letters, 2012, 108, 244502.	7.8	77
27	Local Polarization and Isothermal Local Equilibrium in Relativistic Heavy Ion Collisions. Physical Review Letters, 2021, 127, 272302.	7.8	76
28	The ideal relativistic rotating gas as a perfect fluid with spin. Annals of Physics, 2010, 325, 1566-1594.	2.8	74
29	Strangeness production from SPS to LHC. Journal of Physics G: Nuclear and Particle Physics, 2008, 35, 104013.	3.6	72
30	Centrality dependence of hadronization and chemical freeze-out conditions in heavy ion collisions at $\sqrt{s_{NN}}$ Physical Review C, 2014, 90, .	2.9	65
31	Polarization transfer in hyperon decays and its effect in relativistic nuclear collisions. European Physical Journal C, 2019, 79, 1.	3.9	62
32	Centrality dependence of strangeness production in heavy-ion collisions as a geometrical effect of coreâ€"corona superposition. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2009, 673, 19-23.	4.1	55
33	Hadronization conditions in relativistic nuclear collisions and the QCD pseudo-critical line. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2017, 764, 241-246.	4.1	54
34	General equilibrium second-order hydrodynamic coefficients for free quantum fields. Journal of High Energy Physics, 2017, 2017, 1.	4.7	54
35	Perfect-fluid Hydrodynamics with Constant Acceleration Along the Stream Lines and Spin Polarization. Acta Physica Polonica B, 2018, 49, 1409.	0.8	51
36	Hadronization and hadronic freeze-out in relativistic nuclear collisions. Physical Review C, 2012, 85, .	2.9	50

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37	Quantum corrections to the stress-energy tensor in thermodynamic equilibrium with acceleration. Physical Review D, 2015, 92, .	4.7	49
38	Statistical hadronization and hadronic micro-canonical ensemble II. European Physical Journal C, 2004, 38, 225-246.	3.9	48
39	Thermal hadron production in high-energy collisions. Journal of Physics G: Nuclear and Particle Physics, 1997, 23, 1933-1940.	3.6	47
40	Statistical hadronisation phenomenology. Nuclear Physics A, 2002, 702, 336-340.	1.5	45
41	On chemical equilibrium in nuclear collisions. European Physical Journal C, 1998, 5, 143.	3.9	45
42	Statistical hadronization and hadronic microcanonical ensemble I. European Physical Journal C, 2004, 35, 243-258.	3.9	40
43	Reworking Zubarevâ€™s Approach to Nonequilibrium Quantum Statistical Mechanics. Particles, 2019, 2, 197-207.	1.7	39
44	The microcanonical ensemble of the ideal relativistic quantum gas with angular momentum conservation. European Physical Journal C, 2007, 52, 597-615.	3.9	36
45	Thermodynamical inequivalence of quantum stress-energy and spin tensors. Physical Review D, 2011, 84, .	4.7	36
46	Thermodynamic equilibrium with acceleration and the Unruh effect. Physical Review D, 2018, 97, .	4.7	35
47	Extreme energy $\frac{1}{2}\tau_\mu$ propagation through the Earth. Astroparticle Physics, 2001, 15, 323-328.	4.3	34
48	Chemical equilibrium in heavy ion collisions: rapidity dependence. Journal of Physics G: Nuclear and Particle Physics, 2007, 34, S959-S963.	3.6	32
49	Nonequilibrium thermodynamical inequivalence of quantum stress-energy and spin tensors. Physical Review D, 2013, 87, .	4.7	31
50	Overpopulation ofÎ©Â¯inppCollisions: A Way to Distinguish Statistical Hadronization from String Dynamics. Physical Review Letters, 2002, 88, 202501.	7.8	29
51	Multiplicity fluctuations in a hadron gas with exact conservation laws. Physical Review C, 2005, 72, .	2.9	29
52	Hadrosynthesis at SPS and RHIC and the statistical model. Journal of Physics G: Nuclear and Particle Physics, 2002, 28, 1553-1560.	3.6	27
53	What is the meaning of the statistical hadronization model?. Journal of Physics: Conference Series, 2005, 5, 175-188.	0.4	27
54	General thermodynamic equilibrium with axial chemical potential for the free Dirac field. Journal of High Energy Physics, 2018, 2018, 1.	4.7	27

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55	Predictions of hadron abundances in *pp* collisions at the LHC. Journal of Physics G: Nuclear and Particle Physics, 2011, 38, 025002.	3.6	26
56	Chemical factors in canonical statistical models for relativistic heavy ion collisions. Physical Review C, 2002, 65, .	2.9	25
57	Multiplicity distributions in a thermodynamical model of hadron production in $e + e^-$ collisions. Zeitschrift Für Physik C-Particles and Fields, 1996, 72, 491-496.	1.5	24
58	Canonical strangeness enhancement. Nuclear Physics A, 1998, 638, 399c-402c.	1.5	24
59	Particle number fluctuations in statistical model with exact charge conservation laws. Journal of Physics G: Nuclear and Particle Physics, 2005, 31, S1095-S1099.	3.6	24
60	Statistical hadronization with exclusive channels in $e+e^-$ annihilation. European Physical Journal C, 2011, 71, 1.	3.9	24
61	Lambda polarization in heavy ion collisions: from RHIC BES to LHC energies. Nuclear Physics A, 2019, 982, 519-522.	1.5	20
62	Polarization in Relativistic Fluids: A Quantum Field Theoretical Derivation. Lecture Notes in Physics, 2021, , 15-52.	0.7	19
63	Exact equilibrium distributions in statistical quantum field theory with rotation and acceleration: scalar field. Journal of High Energy Physics, 2021, 2021, 1.	4.7	16
64	Heavy baryonic resonances, multistrange hadrons, and equilibration at energies available at the GSI Schwerionensynchrotron, SIS18. Physical Review C, 2016, 93, .	2.9	15
65	Exact equilibrium distributions in statistical quantum field theory with rotation and acceleration: Dirac field. Journal of High Energy Physics, 2021, 2021, 1.	4.7	15
66	Transverse momentum spectra of identified particles in high energy collisions with statistical hadronisation model. Nuclear Physics, Section B, Proceedings Supplements, 2001, 92, 137-148.	0.4	13
67	Vorticity in the QGP liquid and Λ polarization at the RHIC Beam Energy Scan. Nuclear Physics A, 2017, 967, 764-767.	1.5	12
68	Extensivity, entropy current, area law, and Unruh effect. Physical Review D, 2019, 99, .	4.7	12
69	Thermal fits of hadron abundances from pp to AA collisions. Nuclear Physics A, 1998, 638, 403c-406c.	1.5	11
70	The microcanonical ensemble of the ideal relativistic quantum gas. European Physical Journal C, 2007, 51, 899-912.	3.9	11
71	Polarization as a signature of local parity violation in hot QCD matter. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2021, 822, 136706.	4.1	11
72	Strangeness counting in high energy collisions. Journal of Physics G: Nuclear and Particle Physics, 1999, 25, 287-294.	3.6	9

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73	Threshold effects in relativistic gases. Journal of Physics G: Nuclear and Particle Physics, 2006, 32, 1003-1020.	3.6	9
74	The QCD Confinement Transition: Hadron Formation. Landolt-Bâˆšâˆ‚rnstein - Group I Elementary Particles, Nuclei and Atoms, 2010, , 208-239.	0.2	9
75	A Monte-Carlo generator for statistical hadronization in high energy e+eâˆ' collisions. European Physical Journal C, 2012, 72, 1.	3.9	8
76	Strange quark production in a statistical effective model. Physical Review C, 2003, 67, .	2.9	7
77	Hydrodynamics of fluids with spin. Physics of Particles and Nuclei Letters, 2011, 8, 801-804.	0.4	7
78	Turbulence, Vorticity and Lambda Polarization. Journal of Physics: Conference Series, 2014, 509, 012054.	0.4	7
79	Study of inclusive strange-baryon production and search for pentaquarks in two-photon collisions at LEP. European Physical Journal C, 2007, 49, 395-410.	3.9	6
80	The QCD Phase Diagram from Statistical Model Analysis. Nuclear Physics A, 2019, 982, 827-830.	1.5	6
81	Strongly Interacting Matter Under Rotation: An Introduction. Lecture Notes in Physics, 2021, , 1-14.	0.7	5
82	Statistical model and microcanonical ensemble. Journal of Physics G: Nuclear and Particle Physics, 2005, 31, S1091-S1094.	3.6	4
83	Thermal production of strange particles. Journal of Physics G: Nuclear and Particle Physics, 2009, 36, 064019.	3.6	4
84	Polarization in relativistic heavy ion collisions: a theoretical perspective. EPJ Web of Conferences, 2018, 171, 07001.	0.3	4
85	Does the spin tensor play any role in non-gravitational physics?. Nuclear Physics A, 2021, 1005, 121833.	1.5	4
86	The canonical effect in statistical models for relativistic heavy ion collisions. Journal of Physics G: Nuclear and Particle Physics, 2002, 28, 2041-2045.	3.6	3
87	Validity of the hadronic freeze-out curve. Journal of Physics G: Nuclear and Particle Physics, 2011, 38, 124075.	3.6	3
88	Heavy ion collision evolution modeling with ECHO-QGP. Nuclear Physics A, 2014, 931, 970-974.	1.5	3
89	Study of Lambda polarization at RHIC BES and LHC energies. EPJ Web of Conferences, 2018, 171, 17001.	0.3	3
90	Relativistic quantum fluid with boost invariance. Physical Review D, 2022, 105, .	4.7	3

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91	Strange quark production in an effective statistical model. Nuclear Physics A, 2003, 715, 557c-560c.	1.5	2
92	Study on Chemical Equilibrium in Nucleus–Nucleus Collisions at Relativistic Energies. Acta Physica Hungarica A Heavy Ion Physics, 2005, 24, 23-29.	0.4	2
93	Vorticity in the QGP liquid and hyperon polarization at the RHIC BES energies. Journal of Physics: Conference Series, 2017, 779, 012068.	0.4	2
94	Polarization and Chirality: the quantum features of the Quark Gluon Plasma. Nuclear Physics A, 2019, 982, 57-63.	1.5	2
95	A study of vorticity formation in high energy nuclear collisions. , 2015, 75, 1.		2
96	Fluctuations in the statistical ensembles. Journal of Physics: Conference Series, 2005, 27, 164-173.	0.4	1
97	Strangeness and onset of deconfinement. Physics of Atomic Nuclei, 2012, 75, 646-649.	0.4	1
98	Thermodynamics and the quantum stress-energy and spin tensor. International Journal of Geometric Methods in Modern Physics, 2014, 11, 1450020.	2.0	1
99	Relativistic distribution function for particles with spin at local thermodynamical equilibrium. Journal of Physics: Conference Series, 2014, 509, 012055.	0.4	1
100	Investigating the QCD phase diagram with hadron multiplicities at NICA. European Physical Journal A, 2016, 52, 1.	2.5	1
101	Particle Production in Nuclear Collisions: Hadronization and QCD. Journal of Physics: Conference Series, 2014, 556, 012021.	0.4	0
102	Freeze-out dynamics in heavy-ion collisions: Recent advances. Pramana - Journal of Physics, 2015, 84, 747-755.	1.8	0
103	Alice in strangeland. Nature Physics, 2017, 13, 531-532.	16.7	0
104	Thermodynamic Equilibrium and Relativity: Killing Vectors and Lie Derivatives. Lecture Notes in Computer Science, 2017, , 442-447.	1.3	0