ÄŒaslav Brukner

List of Publications by Year
in descending order

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76 papers	6,032 citations	109321 35 h-index	98798 67 g-index
77 all docs	77 docs citations	77 times ranked	2767 citing authors

#	Article	IF	Citations
1	Necessary and Sufficient Condition for Nonzero Quantum Discord. Physical Review Letters, 2010, 105, 190502.	7.8	1,026
2	Probing Planck-scale physics with quantum optics. Nature Physics, 2012, 8, 393-397.	16.7	473
3	Quantum correlations with no causal order. Nature Communications, 2012, 3, 1092.	12.8	446
4	Quantum discord as resource for remote stateÂpreparation. Nature Physics, 2012, 8, 666-670.	16.7	397
5	Computational Advantage from Quantum-Controlled Ordering of Gates. Physical Review Letters, 2014, 113, 250402.	7.8	198
6	Experimental superposition of orders of quantum gates. Nature Communications, 2015, 6, 7913.	12.8	193
7	Universal decoherence due to gravitational timeÂdilation. Nature Physics, 2015, 11, 668-672.	16.7	187
8	Experimental delayed-choice entanglement swapping. Nature Physics, 2012, 8, 479-484.	16.7	171
9	Quantum interferometric visibility as a witness of general relativistic proper time. Nature Communications, 2011, 2, 505.	12.8	159
10	Condition for macroscopic realism beyond the Leggett-Garg inequalities. Physical Review A, 2013, 87, .	2.5	152
11	Experimental verification of an indefinite causal order. Science Advances, 2017, 3, e1602589.	10.3	151
12	Quantum-state preparation with universal gate decompositions. Physical Review A, 2011, 83, .	2.5	149
13	Witnessing causal nonseparability. New Journal of Physics, 2015, 17, 102001.	2.9	134
14	Quantum superposition of massive objects and the quantization of gravity. Physical Review D, 2018, 98, .	4.7	133
15	Quantum mechanics and the covariance of physical laws in quantum reference frames. Nature Communications, 2019, 10, 494.	12.8	133
16	Exponential Communication Complexity Advantage from Quantum Superposition of the Direction of Communication. Physical Review Letters, 2016, 117, 100502.	7.8	127
17	Quantum causality. Nature Physics, 2014, 10, 259-263.	16.7	106
18	A No-Go Theorem for Observer-Independent Facts. Entropy, 2018, 20, 350.	2.2	91

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19	Bellâ€™s theorem for temporal order. Nature Communications, 2019, 10, 3772.	12.8	86
20	Quantum superposition of the order of parties as a communication resource. Physical Review A, 2015, 92, .	2.5	85
21	Macroscopic Quantum Resonators (MAQRO): 2015 update. EPJ Quantum Technology, 2016, 3, .	6.3	77
22	Quantum formulation of the Einstein equivalence principle. Nature Physics, 2018, 14, 1027-1031.	16.7	74
23	On the Quantum Measurement Problem. The Frontiers Collection, 2017, , 95-117.	0.2	74
24	General relativistic effects in quantum interference of photons. Classical and Quantum Gravity, 2012, 29, 224010.	4.0	69
25	The simplest causal inequalities and their violation. New Journal of Physics, 2016, 18, 013008.	2.9	68
26	Information Invariance and Quantum Probabilities. Foundations of Physics, 2009, 39, 677-689.	1.3	62
27	Quantum clocks and the temporal localisability of events in the presence of gravitating quantum systems. Nature Communications, 2020, 11, 2672.	12.8	57
28	A graph-separation theorem for quantum causal models. New Journal of Physics, 2015, 17, 073020.	2.9	56
29	Experimental quantum communication enhancement by superposing trajectories. Physical Review Research, 2021, 3, .	3.6	55
30	Communication through quantum-controlled noise. Physical Review A, 2019, 99, .	2.5	53
31	Quantum circuits cannot control unknown operations. New Journal of Physics, 2014, 16, 093026.	2.9	51
32	A purification postulate for quantum mechanics with indefinite causal order. Quantum - the Open Journal for Quantum Science, 0, 1, 10.	0.0	47
33	Time dilation in quantum systems and decoherence. New Journal of Physics, 2017, 19, 025011.	2.9	45
34	Relativistic Quantum Reference Frames: The Operational Meaning of Spin. Physical Review Letters, 2019, 123, 090404.	7.8	44
35	Wignerâ€™s Friend as a Rational Agent. Jerusalem Studies in Philosophy and History of Science, 2020, , 91-99.	0.8	41
36	Quantum non-localityâ€”it ainÊ¼t necessarily so.... Journal of Physics A: Mathematical and Theoretical, 2014, 47, 424009.	2.1	39

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37	Mutually unbiased bases, orthogonal Latin squares, and hidden-variable models. Physical Review A, 2009, 79, .	2.5	37
38	Entanglement of quantum clocks through gravity. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E2303-E2309.	7.1	37
39	Obtaining tight bounds on higher-order interferences with a 5-path interferometer. New Journal of Physics, 2017, 19, 033017.	2.9	37
40	Quantum Temporal Superposition: The Case of Quantum Field Theory. Physical Review Letters, 2020, 125, 131602.	7.8	32
41	Information content of the gravitational field of a quantum superposition. International Journal of Modern Physics D, 2019, 28, 1943001.	2.1	28
42	Focus on gravitational quantum physics. New Journal of Physics, 2017, 19, 050401.	2.9	26
43	Dynamics of Quantum Causal Structures. Physical Review X, 2018, 8, .	8.9	26
44	Experimental entanglement of temporal order. Quantum - the Open Journal for Quantum Science, 0, 6, 621.	0.0	24
45	Observer-dependent locality of quantum events. New Journal of Physics, 2018, 20, 103031.	2.9	22
46	Relativistic Bell Test within Quantum Reference Frames. Physical Review Letters, 2021, 126, 230403.	7.8	20
47	Quantum superposition of spacetimes obeys Einstein's equivalence principle. AVS Quantum Science, 2022, 4, .	4.9	20
48	Entanglement and communication-reducing properties of noisyN-qubit states. Physical Review A, 2010, 81, .	2.5	17
49	Unruh effect for detectors in superposition of accelerations. Physical Review D, 2020, 102, .	4.7	16
50	Semi-device-independent certification of indefinite causal order. Quantum - the Open Journal for Quantum Science, 0, 3, 176.	0.0	15
51	Quantum and classical phases in optomechanics. Physical Review A, 2016, 93, .	2.5	14
52	Does violation of a Bell inequality always imply quantum advantage in a communication complexity problem?. Quantum - the Open Journal for Quantum Science, 0, 4, 316.	0.0	14
53	Computational Advantage from a Quantum Superposition of Qubit Gate Orders. Physical Review Letters, 2022, 128, .	7.8	14
54	Bound entanglement helps to reduce communication complexity. Physical Review A, 2013, 87, .	2.5	13

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55	Noncausal Page-Wootters circuits. Physical Review Research, 2022, 4, .	3.6	13
56	Entanglement between smeared field operators in the Klein-Gordon vacuum. Physical Review D, 2010, 81, .	4.7	12
57	Quantum superpositions of â€˜common-causeâ€™ and â€˜direct-causeâ€™ causal structures. New Journal of Physics, 2017, 19, 123028.	2.9	12
58	A no-go theorem for the persistent reality of Wignerâ€™s friendâ€™s perception. Communications Physics, 2021, 4, .	5.3	10
59	Generalized probability rules from a timeless formulation of Wigner's friend scenarios. Quantum - the Open Journal for Quantum Science, 0, 5, 524.	0.0	10
60	Comment on Healeyâ€™s â€œQuantum Theory and the Limits of Objectivityâ€• Foundations of Physics, 2019, 49, 741-749.	1.3	8
61	Facts are relative. Nature Physics, 2020, 16, 1172-1174.	16.7	8
62	Reassessing the computational advantage of quantum-controlled ordering of gates. Physical Review Research, 2021, 3, .	3.6	7
63	Appearance of causality in process matrices when performing fixed-basis measurements for two parties. Physical Review A, 2016, 93, .	2.5	6
64	Simulating Indefinite Causal Order With Rindler Observers. Frontiers in Physics, 2020, 8, .	2.1	6
65	Reply to 'Questioning universal decoherence due to gravitational time dilation'. Nature Physics, 2016, 12, 2-3.	16.7	4
66	Composition rules for quantum processes: a no-go theorem. New Journal of Physics, 2019, 21, 012001.	2.9	4
67	Inferring work by quantum superposing forward and time-reversal evolutions. Physical Review Research, 2022, 4, .	3.6	3
68	Experimental multipartner quantum communication complexity employing just one qubit. Natural Computing, 2013, 12, 19-26.	3.0	2
69	A spacetime area law bound on quantum correlations. Npj Quantum Information, 2019, 5, .	6.7	2
70	Quantum complementarity and logical indeterminacy. Natural Computing, 2009, 8, 449-453.	3.0	1
71	Reply to â€œComment on â€˜Mutually unbiased bases, orthogonal Latin squares, and hidden-variable modelsâ€™Ââ€• Physical Review A, 2011, 83, .	2.5	1
72	Ein quantenoptischer Blick auf die Planck-Skala?. Physik in Unserer Zeit, 2012, 43, 163-164.	0.0	0

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73	Experimental tests of indefinite causal orders. , 2017, , .		0
74	Experimental Violation of Bell's Inequality for Temporal Orders. , 2019, , .		0
75	Experimental Tests of Indefinite Causal Orders. , 2017, , .		0
76	Experimental Test of Bellâ€™s Inequality for Temporal Orders. , 2018, , .		0