Caslav Brukner

List of Publications by Citations

64 papers	5,579 citations	32 h-index	64 g-index
64 ext. papers	6,373 ext. citations	7.4 avg, IF	5.95 L-index

#	Paper	IF	Citations
64	Necessary and sufficient condition for nonzero quantum discord. *Physical Review Letters*, **2010**, 105, 190502	7.4	895
63	Entanglement purification for quantum communication. *Nature*, **2001**, 410, 1067-70	50.4	553
62	Probing Planck-scale physics with quantum optics. *Nature Physics*, **2012**, 8, 393-397	16.2	359
61	Quantum discord as resource for remote state preparation. *Nature Physics*, **2012**, 8, 666-670	16.2	329
60	Bell's theorem for general N-qubit states. *Physical Review Letters*, **2002**, 88, 210401	7.4	295
59	Quantum correlations with no causal order. *Nature Communications*, **2012**, 3, 1092	17.4	294
58	An experimental test of non-local realism. *Nature*, **2007**, 446, 871-5	50.4	235
57	Bell's inequalities and quantum communication complexity. *Physical Review Letters*, **2004**, 92, 127901	7.4	197
56	Operationally Invariant Information in Quantum Measurements. *Physical Review Letters*, **1999**, 83, 3354-3357	7.4	192
55	Classical world arising out of quantum physics under the restriction of coarse-grained measurements. *Physical Review Letters*, **2007**, 99, 180403	7.4	143
54	Magnetic susceptibility as a macroscopic entanglement witness. *New Journal of Physics*, **2005**, 7, 258-258	2.9	141
53	Experimental delayed-choice entanglement swapping. *Nature Physics*, **2012**, 8, 479-484	16.2	140
52	Quantum communication complexity protocol with two entangled qutrits. *Physical Review Letters*, **2002**, 89, 197901	7.4	138
51	Universal decoherence due to gravitational time dilation. *Nature Physics*, **2015**, 11, 668-672	16.2	135
50	Condition for macroscopic realism beyond the Leggett-Garg inequalities. *Physical Review A*, **2013**, 87,	2.6	116
49	Quantum interferometric visibility as a witness of general relativistic proper time. *Nature Communications*, **2011**, 2, 505	17.4	111
48	Mutually unbiased binary observable sets on N qubits. *Physical Review A*, **2002**, 65,	2.6	109

47	Conceptual inadequacy of the Shannon information in quantum measurements. *Physical Review A*, **2001**, 63,	2.6	93
46	Conditions for quantum violation of macroscopic realism. *Physical Review Letters*, **2008**, 101, 090403	7.4	91
45	Do all pure entangled states violate Bell's inequalities for correlation functions?. *Physical Review Letters*, **2002**, 88, 210402	7.4	84
44	Quantum mechanics and the covariance of physical laws in quantum reference frames. *Nature Communications*, **2019**, 10, 494	17.4	62
43	Macroscopic Quantum Resonators (MAQRO): 2015 update. *EPJ Quantum Technology*, **2016**, 3,	6.9	57
42	Information Invariance and Quantum Probabilities. *Foundations of Physics*, **2009**, 39, 677-689	1.2	54
41	General relativistic effects in quantum interference of photons. *Classical and Quantum Gravity*, **2012**, 29, 224010	3.3	52
40	Tight multipartite Bell's inequalities involving many measurement settings. *Physical Review Letters*, **2004**, 93, 200401	7.4	52
39	Bell's theorem for temporal order. *Nature Communications*, **2019**, 10, 3772	17.4	45
38	Heat capacity as an indicator of entanglement. *Physical Review B*, **2008**, 78,	3.3	44
37	Quantum formulation of the Einstein equivalence principle. *Nature Physics*, **2018**, 14, 1027-1031	16.2	40
36	Entanglement swapping of noisy states: A kind of superadditivity in nonclassicality. *Physical Review A*, **2005**, 72,	2.6	38
35	Experimental quantum communication complexity. *Physical Review A*, **2005**, 72,	2.6	36
34	Time dilation in quantum systems and decoherence. *New Journal of Physics*, **2017**, 19, 025011	2.9	33
33	Experimenter's freedom in Bell's theorem and quantum cryptography. *Physical Review A*, **2006**, 73,	2.6	33
32	Operationally invariant measure of the distance between quantum states by complementary measurements. *Physical Review Letters*, **2003**, 91, 087902	7.4	32
31	Quantum clocks and the temporal localisability of events in the presence of gravitating quantum systems. *Nature Communications*, **2020**, 11, 2672	17.4	29
30	Entanglement of quantum clocks through gravity. *Proceedings of the National Academy of Sciences of the United States of America*, **2017**, 114, E2303-E2309	11.5	24

29	Young's experiment and the finiteness of information. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2002**, 360, 1061-9	3	24
28	Information and Fundamental Elements of the Structure of Quantum Theory **2003**, 323-354		24
27	On the Quantum Measurement Problem. *The Frontiers Collection*, **2017**, 95-117	0.3	21
26	Correspondence between continuous-variable and discrete quantum systems of arbitrary dimensions. *Physical Review A*, **2003**, 68,	2.6	19
25	Non-local setting and outcome information for violation of Bell's inequality. *New Journal of Physics*, **2010**, 12, 083051	2.9	18
24	Photonic entanglement as a resource in quantum computation and quantum communication. *Journal of the Optical Society of America B: Optical Physics*, **2007**, 24, 241	1.7	17
23	Entanglement and communication-reducing properties of noisy N-qubit states. *Physical Review A*, **2010**, 81,	2.6	16
22	Entanglement between collective operators in a linear harmonic chain. *Physical Review A*, **2006**, 73,	2.6	16
21	Bell's experiment with intra- and inter-pair entanglement: Single-particle mode entanglement as a case study. *Physical Review A*, **2009**, 80,	2.6	14
20	Complementarity and Information in "Delayed-choice for Entanglement Swapping". *Foundations of Physics*, **2005**, 35, 1909-1919	1.2	14
19	Quantum and classical phases in optomechanics. *Physical Review A*, **2016**, 93,	2.6	13
18	Entanglement detection with bounded reference frames. *New Journal of Physics*, **2009**, 11, 123007	2.9	12
17	QUANTUM COMMUNICATION COMPLEXITY PROTOCOLS BASED ON HIGHER-DIMENSIONAL ENTANGLED SYSTEMS. *International Journal of Quantum Information*, **2003**, 01, 519-525	0.8	12
16	Quantum Physics as a Science of Information. *The Frontiers Collection*, **2005**, 47-61	0.3	11
15	Bound entanglement helps to reduce communication complexity. *Physical Review A*, **2013**, 87,	2.6	10
14	Entanglement between smeared field operators in the Klein-Gordon vacuum. *Physical Review D*, **2010**, 81,	4.9	10
13	The Classical Limit of a Physical Theory and the Dimensionality of Space. *Fundamental Theories of Physics*, **2016**, 249-282	0.8	10
12	EXPERIMENTAL PROPOSAL OF SWITCHED "DELAYED-CHOICE" FOR ENTANGLEMENT SWAPPING. *International Journal of Quantum Information*, **2005**, 03, 73-79	0.8	6

List of Publications

11	ENTANGLEMENT-ASSISTED ORIENTATION IN SPACE. *International Journal of Quantum Information*, **2006**, 04, 365-370	0.8	5
10	Entanglement in Time and Temporal Communication Complexity. *AIP Conference Proceedings*, **2004**,	0	5
9	Encoding and decoding in complementary bases with quantum gates. *Journal of Modern Optics*, **2000**, 47, 2233-2246	1.1	5
8	Does violation of a Bell inequality always imply quantum advantage in a communication complexity problem?. *Quantum - the Open Journal for Quantum Science*,4, 316		5
7	Reply to 'Questioning universal decoherence due to gravitational time dilation'. *Nature Physics*, **2016**, 12, 2-3	16.2	3
6	Bell's Inequalities Foundations and Quantum Communication **2012**, 1413-1450		3
5	Entanglement distribution revealed by macroscopic observations. *Physical Review A*, **2006**, 74,	2.6	3
4	Experimental multipartner quantum communication complexity employing just one qubit. *Natural Computing*, **2013**, 12, 19-26	1.3	1
3	Transformation of spin in quantum reference frames. *Physical Review Research*, **2021**, 3,	3.9	1
2	Ein quantenoptischer Blick auf die Planck-Skala?. *Physik in Unserer Zeit*, **2012**, 43, 163-164	0.1	
1	The Essence of Entanglement. *Fundamental Theories of Physics*, **2021**, 117-138	0.8	