

Norbert Lutkenhaus

List of Publications by Year in descending order

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155
papers

10,744
citations

57631

44
h-index

31759

101
g-index

161
all docs

161
docs citations

161
times ranked

4376
citing authors

#	ARTICLE	IF	CITATIONS
1	Security proof of practical quantum key distribution with detection-efficiency mismatch. Physical Review Research, 2021, 3, .	1.3	21
2	Numerical calculations of the finite key rate for general quantum key distribution protocols. Physical Review Research, 2021, 3, .	1.3	18
3	Dimension Reduction in Quantum Key Distribution for Continuous- and Discrete-Variable Protocols. PRX Quantum, 2021, 2, .	3.5	20
4	Erasable Bit Commitment From Temporary Quantum Trust. IEEE Journal on Selected Areas in Information Theory, 2020, 1, 536-554.	1.9	2
5	Trusted Detector Noise Analysis for Discrete Modulation Schemes of Continuous-Variable Quantum Key Distribution. Physical Review Applied, 2020, 14, .	1.5	16
6	Beating direct transmission bounds for quantum key distribution with a multiple quantum memory station. Physical Review A, 2020, 101, .	1.0	6
7	Improving key rates of the unbalanced phase-encoded BB84 protocol using the flag-state squashing model. Physical Review Research, 2020, 2, .	1.3	6
8	Characterization of Gram matrices of multimode coherent states. Physical Review A, 2019, 99, .	1.0	4
9	Eavesdropper's ability to attack a free-space quantum-key-distribution receiver in atmospheric turbulence. Physical Review A, 2019, 99, .	1.0	26
10	Asymptotic Security Analysis of Discrete-Modulated Continuous-Variable Quantum Key Distribution. Physical Review X, 2019, 9, .	2.8	64
11	Demonstration of a 6 state-4 state reference frame independent channel for quantum key distribution. Applied Physics Letters, 2019, 115, 211103.	1.5	14
12	Demonstration of analyzers for multimode photonic time-bin qubits. Physical Review A, 2018, 97, .	1.0	30
13	Practical quantum appointment scheduling. Physical Review A, 2018, 97, .	1.0	3
14	Families of quantum fingerprinting protocols. Physical Review A, 2018, 97, .	1.0	7
15	Cryptographic and Non-Cryptographic Network Applications and Their Optical Implementations. , 2018, , .		0
16	Security-proof framework for two-way Gaussian quantum-key-distribution protocols. Physical Review A, 2018, 98, .	1.0	13
17	Simple security analysis of phase-matching measurement-device-independent quantum key distribution. Physical Review A, 2018, 98, .	1.0	126
18	Eavesdropping and countermeasures for backflash side channel in quantum cryptography. Optics Express, 2018, 26, 21020.	1.7	39

#	ARTICLE	IF	CITATIONS
19	Optimized architectures for long distance quantum communication. , 2017, , .		0
20	Numerical evidence for bound secrecy from two-way postprocessing in quantum key distribution. Physical Review A, 2017, 95, .	1.0	9
21	Entanglement verification with detection-efficiency mismatch. Physical Review A, 2017, 95, .	1.0	6
22	Sifting attacks in finite-size quantum key distribution. New Journal of Physics, 2016, 18, 053001.	1.2	15
23	Simulating single photons with realistic photon sources. Physical Review A, 2016, 94, .	1.0	20
24	Quantum technology: from research to application. Applied Physics B: Lasers and Optics, 2016, 122, 1.	1.1	42
25	Practical quantum retrieval games. Physical Review A, 2016, 93, .	1.0	11
26	Role of syndrome information on a one-way quantum repeater using teleportation-based error correction. Physical Review A, 2016, 94, .	1.0	19
27	Optimal architectures for long distance quantum communication. Scientific Reports, 2016, 6, 20463.	1.6	262
28	Numerical approach for unstructured quantum key distribution. Nature Communications, 2016, 7, 11712.	5.8	85
29	Realization of Communication Protocols with a Quantitative Quantum Communication Advantage. , 2016, , .		0
30	Self-Referenced Continuous-Variable Quantum Key Distribution Protocol. Physical Review X, 2015, 5, .	2.8	126
31	Security loophole in free-space quantum key distribution due to spatial-mode detector-efficiency mismatch. Physical Review A, 2015, 91, .	1.0	71
32	Experimental quantum key distribution with simulated ground-to-satellite photon losses and processing limitations. Physical Review A, 2015, 92, .	1.0	42
33	Security of quantum key distribution using a simplified trusted relay. Physical Review A, 2015, 91, .	1.0	19
34	Experimental quantum fingerprinting with weak coherent pulses. Nature Communications, 2015, 6, 8735.	5.8	65
35	Gaussian-only regenerative stations cannot act as quantum repeaters. Physical Review A, 2014, 90, .	1.0	27
36	Average iterations of accessible nonlinear witnesses. , 2014, , .		0

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37	Worldwide standardization activity for quantum key distribution. , 2014, , .		9
38	Quantitative Quantum Communication: Practical Realizations of Exponential Quantum Advantage. , 2014, , .		0
39	Symmetric extension of two-qubit states. Physical Review A, 2014, 90, .	1.0	29
40	Quantum communication with coherent states and linear optics. Physical Review A, 2014, 90, .	1.0	40
41	Memory-assisted measurement-device-independent quantum key distribution. New Journal of Physics, 2014, 16, 043005.	1.2	72
42	Quantum fingerprinting with coherent states and a constant mean number of photons. Physical Review A, 2014, 89, .	1.0	51
43	Ultrafast and Fault-Tolerant Quantum Communication across Long Distances. Physical Review Letters, 2014, 112, 250501.	2.9	204
44	Ultrafast and Fault-Tolerant Quantum Communication over Long Distances. , 2014, , .		1
45	Trapped Ion Implementation of Memory-Assisted Extended Quantum Key Distribution. , 2014, , .		0
46	Quantum Memories in Action. , 2014, , .		1
47	Quantum Key Distribution. , 2014, , 107-146.		5
48	Mapping Qubit Protocols to Coherent-State Protocols in Quantum Communication. , 2014, , .		0
49	Higher-dimensional orbital-angular-momentum-based quantum key distribution with mutually unbiased bases. Physical Review A, 2013, 88, .	1.0	264
50	Optimal working points for continuous-variable quantum channels. Physical Review A, 2013, 88, .	1.0	21
51	Reliable entanglement verification. Physical Review A, 2013, 87, .	1.0	14
52	Security proof of the unbalanced phase-encoded Bennett-Brassard 1984 protocol. Physical Review A, 2012, 86, .	1.0	14
53	Quantum benchmarks from any states of light. , 2012, , .		0
54	Quantum benchmarking with realistic states of light. Physical Review A, 2012, 86, .	1.0	13

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55	Symmetries in quantum key distribution and the connection between optimal attacks and optimal cloning. Physical Review A, 2012, 85, .	1.0	60
56	Accessible nonlinear entanglement witnesses. Physical Review A, 2012, 85, .	1.0	18
57	Improved Data Post-Processing in Quantum Key Distribution and Application to Loss Thresholds in device independent QKD. Quantum Information and Computation, 2012, 12, 203-214.	0.1	24
58	Directions in Optical Implementations of Quantum Key Distribution. , 2012, , .		0
59	Improving Heralded Amplifiers In Device Independent QKD. , 2011, , .		0
60	Linear-optics realization of channels for single-photon multimode qudits. Physical Review A, 2011, 84, .	1.0	17
61	Efficient heralding of photonic qubits with applications to device-independent quantum key distribution. Physical Review A, 2011, 84, .	1.0	56
62	Strong quantitative benchmarking of quantum optical devices. Physical Review A, 2011, 83, .	1.0	17
63	Extending Quantum Optical Benchmarks with Entanglement Measures. , 2011, , .		0
64	Quantifying the strength of optical communication devices using entanglement measures. , 2011, , .		0
65	Quantum Information Theory in Optics. , 2011, , .		0
66	Linear-Optics Realization of Channels for Single-Photon Multimode Qudits. , 2011, , .		1
67	Passive preparation of BB84 signal states with coherent light. Progress in Informatics, 2011, , 57.	0.2	2
68	Security of Quantum Key Distribution. , 2010, , .		0
69	Passive Decoy State Quantum Key Distribution with Coherent Light. , 2010, , .		0
70	Quantum throughput: Quantifying quantum-communication devices with homodyne measurements. Physical Review A, 2010, 82, .	1.0	9
71	Passive sources for the Bennett-Brassard 1984 quantum-key-distribution protocol with practical signals. Physical Review A, 2010, 82, .	1.0	17
72	Quantum benchmarks for the storage or transmission of quantum light from minimal resources. Physical Review A, 2010, 81, .	1.0	21

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73	Entanglement verification with realistic measurement devices via squashing operations. Physical Review A, 2010, 81, .	1.0	33
74	Security of trusted repeater quantum key distribution networks. Journal of Computer Security, 2010, 18, 61-87.	0.5	66
75	Passive Decoy State Quantum Key Distribution. Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, 2010, , 132-141.	0.2	0
76	Witnessing effective entanglement over a 2km fiber channel. Optics Express, 2010, 18, 4499.	1.7	17
77	The Case for Quantum Key Distribution. Lecture Notes of the Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering, 2010, , 283-296.	0.2	21
78	Fundamental Bounds and Performance Tests for the Storage or Transmission of Quantum Light. , 2010, , .		0
79	Witnessing Effective Entanglement over 2km of Optical Fiber. , 2010, , .		0
80	Upper bounds for the secure key rate of the decoy-state quantum key distribution. Physical Review A, 2009, 79, .	1.0	7
81	Unconditional security of the Bennett 1992 quantum-key-distribution scheme with a strong reference pulse. Physical Review A, 2009, 80, .	1.0	41
82	Asymptotic security of binary modulated continuous-variable quantum key distribution under collective attacks. Physical Review A, 2009, 79, .	1.0	77
83	Symmetric extension in two-way quantum key distribution. Physical Review A, 2009, 79, .	1.0	19
84	Spectrum conditions for symmetric extendible states. Physical Review A, 2009, 79, .	1.0	16
85	Focus on Quantum Cryptography: Theory and Practice. New Journal of Physics, 2009, 11, 045005.	1.2	40
86	Detector decoy quantum key distribution. New Journal of Physics, 2009, 11, 045008.	1.2	27
87	Topological optimization of quantum key distribution networks. New Journal of Physics, 2009, 11, 075002.	1.2	40
88	Squashing Models for Optical Measurements in Quantum Communication. , 2009, , .		4
89	Testing Quantum Memories Via Entanglement Verification. , 2009, , .		0
90	Symmetric extension and its application in QKD. , 2009, , .		1

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91	The security of practical quantum key distribution. <i>Reviews of Modern Physics</i> , 2009, 81, 1301-1350.	16.4	2,489
92	Quantum repeaters with imperfect memories: Cost and scalability. <i>Physical Review A</i> , 2009, 80, .	1.0	77
93	Non-Poissonian statistics from Poissonian light sources with application to passive decoy state quantum key distribution. <i>Optics Letters</i> , 2009, 34, 3238.	1.7	56
94	Probing the quantumness of channels with mixed states. <i>Physical Review A</i> , 2009, 80, .	1.0	17
95	Quantum repeaters using coherent-state communication. <i>Physical Review A</i> , 2008, 78, .	1.0	84
96	Comment on "Arbitrated quantum-signature scheme". <i>Physical Review A</i> , 2008, 77, .	1.0	76
97	Truncated $\frac{\text{su}}{2}$ moment problem for spin and polarization states. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2008, 41, 275302.	0.7	13
98	Long-Distance Quantum Communication with Multiple Quantum Memories. , 2008, , .		0
99	Iterations of nonlinear entanglement witnesses. <i>Physical Review A</i> , 2008, 78, .	1.0	20
100	Squashing Models for Optical Measurements in Quantum Communication. <i>Physical Review Letters</i> , 2008, 101, 093601.	2.9	108
101	Testing quantum devices: Practical entanglement verification in bipartite optical systems. <i>Physical Review A</i> , 2008, 77, .	1.0	80
102	Theory of Quantum Key Distribution: The Road Ahead (Invited Talk). <i>Lecture Notes in Computer Science</i> , 2008, , 120-120.	1.0	0
103	Experimental procedures for entanglement verification. <i>Physical Review A</i> , 2007, 75, .	1.0	79
104	Optimal unambiguous state discrimination of two density matrices: A second class of exact solutions. <i>Physical Review A</i> , 2007, 76, .	1.0	21
105	Security of coherent-state quantum cryptography in the presence of Gaussian noise. <i>Physical Review A</i> , 2007, 76, .	1.0	52
106	Nonlinear entanglement witnesses, covariance matrices and the geometry of separable states. <i>Journal of Physics: Conference Series</i> , 2007, 67, 012004.	0.3	22
107	Unconditional security of practical quantum key distribution. <i>European Physical Journal D</i> , 2007, 41, 599-627.	0.6	230
108	Experimental Quantum Cloning with Continuous Variables. , 2007, , 305-322.		1

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109	Quantum cryptography. <i>Progress in Optics</i> , 2006, 49, 381-454.	0.4	94
110	Binary Projective Measurement via Linear Optics and Photon Counting. <i>Physical Review Letters</i> , 2006, 97, 040502.	2.9	36
111	Secret keys from quantum correlations. <i>Computer Science - Research and Development</i> , 2006, 21, 29-37.	0.9	1
112	Nonlinear Entanglement Witnesses. <i>Physical Review Letters</i> , 2006, 96, 170502.	2.9	102
113	Upper bound on the secret key rate distillable from effective quantum correlations with imperfect detectors. <i>Physical Review A</i> , 2006, 73, .	1.0	13
114	Implementing nonprojective measurements via linear optics: An approach based on optimal quantum-state discrimination. <i>Physical Review A</i> , 2006, 73, .	1.0	2
115	One-way quantum key distribution: Simple upper bound on the secret key rate. <i>Physical Review A</i> , 2006, 74, .	1.0	23
116	Entanglement verification for quantum-key-distribution systems with an underlying bipartite qubit-mode structure. <i>Physical Review A</i> , 2006, 73, .	1.0	51
117	Efficiency of coherent-state quantum cryptography in the presence of loss: Influence of realistic error correction. <i>Physical Review A</i> , 2006, 73, .	1.0	51
118	Optimal unambiguous state discrimination of two density matrices: Lower bound and class of exact solutions. <i>Physical Review A</i> , 2005, 72, .	1.0	39
119	Detecting two-party quantum correlations in quantum-key-distribution protocols. <i>Physical Review A</i> , 2005, 71, .	1.0	44
120	Implementation of projective measurements with linear optics and continuous photon counting. <i>Physical Review A</i> , 2005, 71, .	1.0	48
121	Intercept-resend attacks in the Bennett-Brassard 1984 quantum-key-distribution protocol with weak coherent pulses. <i>Physical Review A</i> , 2005, 71, .	1.0	25
122	Unconditional security of the Bennett 1992 quantum key-distribution protocol over a lossy and noisy channel. <i>Physical Review A</i> , 2004, 69, .	1.0	62
123	Effect of finite detector efficiencies on the security evaluation of quantum key distribution. <i>Physical Review A</i> , 2004, 69, .	1.0	23
124	Simple criteria for the implementation of projective measurements with linear optics. <i>Physical Review A</i> , 2004, 69, .	1.0	34
125	Entanglement as a Precondition for Secure Quantum Key Distribution. <i>Physical Review Letters</i> , 2004, 92, 217903.	2.9	245
126	Criteria for the Implementation of Projective Measurements in Quantum Optics. <i>AIP Conference Proceedings</i> , 2004, , .	0.3	0

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127	Quantum key distribution: how do we know it's secure?. Optics and Photonics News, 2004, 15, 24.	0.4	1
128	Upper bounds on success probabilities in linear optics. New Journal of Physics, 2004, 6, 51-51.	1.2	36
129	Quantum key distribution with coherent polarization states. , 2004, , .		0
130	Reduction theorems for optimal unambiguous state discrimination of density matrices. Physical Review A, 2003, 68, .	1.0	70
131	Continuous Variable Quantum Cryptography: Beating the 3ÂdB Loss Limit. Physical Review Letters, 2002, 89, 167901.	2.9	287
132	Quantum key distribution with realistic states: photon-number statistics in the photon-number splitting attack. New Journal of Physics, 2002, 4, 44-44.	1.2	229
133	Dim Coherent States as Signal States in the Bb84 Protocol: Is it Secure?. , 2002, , 387-392.		0
134	THEORETICAL ASPECTS OF PRACTICAL QUANTUM KEY DISTRIBUTION. , 2002, , .		0
135	Removal of a single photon by adaptive absorption. Physical Review A, 2001, 64, .	1.0	17
136	Conditional beam-splitting attack on quantum key distribution. Physical Review A, 2001, 65, .	1.0	16
137	Quantum cloning and distributed measurements. Physical Review A, 2001, 63, .	1.0	29
138	Maximum efficiency of a linear-optical Bell-state analyzer. Applied Physics B: Lasers and Optics, 2001, 72, 67-71.	1.1	231
139	Quantum Key Distribution: from Principles to Practicalities. Applicable Algebra in Engineering, Communications and Computing, 2000, 10, 383-399.	0.3	19
140	Unambiguous state discrimination in quantum cryptography with weak coherent states. Physical Review A, 2000, 62, .	1.0	122
141	Limitations on Practical Quantum Cryptography. Physical Review Letters, 2000, 85, 1330-1333.	2.9	1,016
142	Security against individual attacks for realistic quantum key distribution. Physical Review A, 2000, 61, .	1.0	578
143	Security Aspects of Practical Quantum Cryptography. Lecture Notes in Computer Science, 2000, , 289-299.	1.0	11
144	Quantum key distribution: theory for application. Applied Physics B: Lasers and Optics, 1999, 69, 395-400.	1.1	17

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145	Bell measurements for teleportation. Physical Review A, 1999, 59, 3295-3300.	1.0	423
146	Estimates for practical quantum cryptography. Physical Review A, 1999, 59, 3301-3319.	1.0	156
147	Mimicking a squeezed-bath interaction: Quantum-reservoir engineering with atoms. Physical Review A, 1998, 57, 548-558.	1.0	70
148	Security Against Eavesdropping in Quantum Cryptography. , 1997, , 89-98.		1
149	Security against eavesdropping in quantum cryptography. Physical Review A, 1996, 54, 97-111.	1.0	99
150	Nonclassical effects in phase space. Physical Review A, 1995, 51, 3340-3342.	1.0	174
151	Degree of Nonclassical Behaviour. , 1995, , 81-87.		0
152	Security of quantum key distribution with imperfect devices. , 0, , .		115
153	The Engineering of a Scalable Multi-Site Communications System Utilizing Quantum Key Distribution (QKD). Quantum Science and Technology, 0, , .	2.6	17
154	Hamiltonians for one-way quantum repeaters. Quantum - the Open Journal for Quantum Science, 0, 2, 75.	0.0	8
155	Reliable numerical key rates for quantum key distribution. Quantum - the Open Journal for Quantum Science, 0, 2, 77.	0.0	59