Piotr ChruÅ›ciel

List of Publications by Year
in descending order

161 papers	4,636 citations	87888 38 h-index	118850 62 g-index
170 all docs	170 docs citations	170 times ranked	1770 citing authors

#	Article	IF	Citations
1	Black holes, gravitational waves and fundamental physics: a roadmap. Classical and Quantum Gravity, 2019, 36, 143001.	4.0	451
2	Stationary Black Holes: Uniqueness and Beyond. Living Reviews in Relativity, 2012, 15, 7.	26.7	384
3	On the regularity of solutions to the Yamabe equation and the existence of smooth hyperboloidal initial data for Einstein's field equations. Communications in Mathematical Physics, 1992, 149, 587-612.	2.2	158
4	The mass of asymptotically hyperbolic Riemannian manifolds. Pacific Journal of Mathematics, 2003, 212, 231-264.	0.5	138
5	Semi-global existence and convergence of solutions of the Robinson-Trautman (2-dimensional Calabi) equation. Communications in Mathematical Physics, 1991, 137, 289-313.	2.2	104
6	On space-times with U(1) Ã— U(1) symmetric compact Cauchy surfaces. Annals of Physics, 1990, 202, 100-150.	2.8	102
7	Strong cosmic censorship in polarised Gowdy spacetimes. Classical and Quantum Gravity, 1990, 7, 1671-1680.	4.0	92
8	On the topology of stationary black holes. Classical and Quantum Gravity, 1994, 11, L147-L152.	4.0	91
9	Existence of non-trivial, vacuum, asymptotically simple spacetimes. Classical and Quantum Gravity, 2002, 19, L71-L79.	4.0	91
10	Gravitational waves in general relativity XIV. Bondi expansions and the â€˜polyhomogeneityâ€™ of â„¢ Philosophical Transactions of the Royal Society: Physical and Engineering Sciences, 1995, 350, 113-141.	1.0	71
11	Regularity of Horizons and the Area Theorem. Annales Henri Poincare, 2001, 2, 109-178.	1.7	71
12	On "Asymptotically Flat" Space-Times with G2-Invariant Cauchy Surfaces. Annals of Physics, 1995, 237, 322-354.	2.8	69
13	On the global Structure of Robinsonâ€“Trautman space-times. Proceedings of the Royal Society A, 1992, 436, 299-316.	0.9	68
14	Maximal hypersurfaces in stationary asymptotically flat spacetimes. Communications in Mathematical Physics, 1994, 163, 561-604.	2.2	64
15	Towards the classification of static vacuum spacetimes with negative cosmological constant. Journal of Mathematical Physics, 2001, 42, 1779-1817.	1.1	61
16	On â€œhyperboloidalâ€•Cauchy data for vacuum einstein equations and obstructions to smoothness of Scri. Communications in Mathematical Physics, 1994, 161, 533-568.	2.2	60
17	Killing initial data. Classical and Quantum Gravity, 1997, 14, A83-A92.	4.0	60
18	On non-existence of static vacuum black holes with degenerate components of the event horizon. Classical and Quantum Gravity, 2006, 23, 549-554.	4.0	60

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19	Killing vectors in asymptotically flat spaceâ€“times. I. Asymptotically translational Killing vectors and the rigid positive energy theorem. Journal of Mathematical Physics, 1996, 37, 1939-1961.	1.1	58
20	Boundary regularity of conformally compact Einstein metrics. Journal of Differential Geometry, 2005, 69, .	1.1	57
21	Global Foliations of Vacuum Spacetimes withT2Isometry. Annals of Physics, 1997, 260, 117-148.	2.8	55
22	Boundary value problems for Dirac-type equations. Journal Fur Die Reine Und Angewandte Mathematik, 2005, 2005, 13-73.	0.9	55
23	The classification of static vacuum spacetimes containing an asymptotically flat spacelike hypersurface with compact interior. Classical and Quantum Gravity, 1999, 16, 661-687.	4.0	53
24	Initial Data Engineering. Communications in Mathematical Physics, 2005, 257, 29-42.	2.2	50
25	KIDs are Non-Generic. Annales Henri Poincare, 2005, 6, 155-194.	1.7	50
26	Mathematical general relativity: A sampler. Bulletin of the American Mathematical Society, 2010, 47, 567-567.	1.5	50
27	On Lorentzian causality with continuous metrics. Classical and Quantum Gravity, 2012, 29, 145001.	4.0	48
28	Boundary Conditions at Spatial Infinity. , 1986, , 49-59.		47
29	Non-trivial, static, geodesically complete, vacuum space-times with a negative cosmological constant. Journal of High Energy Physics, 2002, 2002, 063-063.	4.7	46
30	Non-smoothness of event horizons of Robinson-Trautman black holes. Communications in Mathematical Physics, 1992, 147, 137-162.	2.2	45
31	Mass and angular-momentum inequalities for axi-symmetric initial data sets. II. Angular momentum. Annals of Physics, 2008, 323, 2591-2613.	2.8	45
32	Mass and angular-momentum inequalities for axi-symmetric initial data sets I. Positivity of mass. Annals of Physics, 2008, 323, 2566-2590.	2.8	44
33	A remark on the positive-energy theorem. Classical and Quantum Gravity, 1986, 3, L115-L121.	4.0	43
34	On the invariant mass conjecture in general relativity. Communications in Mathematical Physics, 1988, 120, 233-248.	2.2	43
35	The mass of spacelike hypersurfaces in asymptotically anti-de Sitter space-times. Advances in Theoretical and Mathematical Physics, 2001, 5, 697-754.	0.6	42
36	The Cauchy Problem on a Characteristic Cone for the Einstein Equations in Arbitrary Dimensions. Annales Henri Poincare, 2011, 12, 419-482.	1.7	41

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37	Nonisometric vacuum extensions of vacuum maximal globally hyperbolic spacetimes. Physical Review D, 1993, 48, 1616-1628.	4.7	40
38	Hyperboloidal Cauchy data for vacuum Einstein equations and obstructions to smoothness of null infinity. Physical Review Letters, 1993, 70, 2829-2832.	7.8	39
39	On mapping properties of the general relativistic constraints operator in weighted function spaces, with applications. MÃ©moires De La SociÃ©tÃ© MathÃ©matique De France, 2003, 1, 1-103.	0.4	39
40	On Rigidity of Analytic Black Holes. Communications in Mathematical Physics, 1997, 189, 1-7.	2.2	35
41	The Classification of Static Electroâ€“Vacuum Spaceâ€“Times Containing an Asymptotically Flat Spacelike Hypersurface with Compact Interior. Communications in Mathematical Physics, 2007, 271, 577-589.	2.2	35
42	Horizons Non-Differentiable on a Dense Set. Communications in Mathematical Physics, 1998, 193, 449-470.	2.2	34
43	Topological Censorship for Kaluzaâ€“Klein Space-Times. Annales Henri Poincare, 2009, 10, 893-912.	1.7	34
44	On Israelâ€“Wilsonâ€“PerjÃ©s black holes. Classical and Quantum Gravity, 2006, 23, 2519-2540.	4.0	33
45	The many ways of the characteristic Cauchy problem. Classical and Quantum Gravity, 2012, 29, 145006.	4.0	32
46	The Trautman-Bondi mass of hyperboloidal initial data sets. Advances in Theoretical and Mathematical Physics, 2004, 8, 83-139.	0.6	32
47	Towards a classification of static electrovacuum spacetimes containing an asymptotically flat spacelike hypersurface with compact interior. Classical and Quantum Gravity, 1999, 16, 689-704.	4.0	31
48	Mass, angular-momentum and charge inequalities for axisymmetric initial data. Classical and Quantum Gravity, 2009, 26, 235013.	4.0	31
49	Strong Cosmic Censorship in Vacuum Space-Times with Compact, Locally Homogeneous Cauchy Surfaces. Annals of Physics, 1995, 242, 349-385.	2.8	29
50	Some global charges in classical Yang-Mills theory. Physical Review D, 1987, 36, 1874-1881.	4.7	28
51	Asymptotically Simple Solutions of the Vacuum Einstein Equations in Even Dimensions. Communications in Mathematical Physics, 2005, 260, 557-577.	2.2	28
52	Rigid upper bounds for the angular momentum and centre of mass of non-singular asymptotically anti-de Sitter space-times. Journal of High Energy Physics, 2006, 2006, 084-084.	4.7	28
53	Uniqueness of the Trautman-Bondi mass. Physical Review D, 1998, 58, .	4.7	27
54	On maximal surfaces in asymptotically flat space-times. Communications in Mathematical Physics, 1990, 130, 95-109.	2.2	26

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55	The Penrose Inequality. , 2004, , 39-70.		26
56	The isometry group and killing spinors for the pp wave space-time in D = 11 supergravity. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1984, 149, 107-110.	4.1	25
57	On completeness of orbits of Killing vector fields. Classical and Quantum Gravity, 1993, 10, 2091-2101.	4.0	25
58	The cosmological constant and the energy of gravitational radiation. Physical Review D, 2016, 93, .	4.7	24
59	Global solutions of the Einsteinâ€“Maxwell equations in higher dimensions. Classical and Quantum Gravity, 2006, 23, 7383-7394.	4.0	23
60	A Uniqueness Theorem for Degenerate Kerrâ€“Newman Black Holes. Annales Henri Poincare, 2010, 11, 585-609.	1.7	23
61	Construction of N-Body Initial Data Sets in General Relativity. Communications in Mathematical Physics, 2011, 304, 637-647.	2.2	23
62	Killing vectors in asymptotically flat space-times. II. Asymptotically translational Killing vectors and the rigid positive energy theorem in higher dimensions. Journal of Mathematical Physics, 2006, 47, 022502.	1.1	22
63	Gluing constructions for asymptotically hyperbolic manifolds with constant scalar curvature. Communications in Analysis and Geometry, 2009, 17, 343-381.	0.4	22
64	All electrovacuum Majumdar-Papapetrou spacetimes with non-singular black holes. Classical and Quantum Gravity, 1995, 12, L17-L23.	4.0	21
65	Gluing Initial Data Sets for General Relativity. Physical Review Letters, 2004, 93, 081101.	7.8	21
66	Existence of singularities in two-Kerr black holes. Classical and Quantum Gravity, 2011, 28, 245017.	4.0	20
67	Space-time diagrammatics. Physical Review D, 2012, 86, .	4.7	20
68	Singular Yamabe Metrics and Initial Data with Exactly Kottlerâ€“Schwarzschildâ€“de Sitter Ends. Annales Henri Poincare, 2008, 9, 639-654.	1.7	18
69	On fine differentiability properties of horizons and applications to Riemannian geometry. Journal of Geometry and Physics, 2002, 41, 1-12.	1.4	16
70	On Âmany-black-holeÂ vacuum spacetimes. Classical and Quantum Gravity, 2003, 20, 729-754.	4.0	16
71	On higher dimensional black holes with Abelian isometry group. Journal of Mathematical Physics, 2009, 50, 052501.	1.1	16
72	Solutions of the vacuum Einstein equations with initial data on past null infinity. Classical and Quantum Gravity, 2013, 30, 235037.	4.0	16

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73	Hamiltonian mass of asymptotically Schwarzschildâ€“deÂSitter space-times. Physical Review D, 2013, 87, .	4.7	16
74	On Differentiability of Volume Time Functions. Annales Henri Poincare, 2016, 17, 2801-2824.	1.7	16
75	Gravitationally induced phase shift on a single photon. New Journal of Physics, 2017, 19, 033028.	2.9	16
76	The Hamiltonian mass of asymptotically anti-de Sitter space-times. Classical and Quantum Gravity, 2001, 18, L61-L68.	4.0	15
77	The light-cone theorem. Classical and Quantum Gravity, 2009, 26, 135011.	4.0	15
78	Characteristic Initial Data and Smoothness of Scri. I. Framework and Results. Annales Henri Poincare, 2015, 16, 2131-2162.	1.7	15
79	THE EXISTENCE THEOREM FOR THE GENERAL RELATIVISTIC CAUCHY PROBLEM ON THE LIGHT-CONE. Forum of Mathematics, Sigma, 2014, 2, .	0.7	14
80	On the mass aspect function and positive energy theorems for asymptotically hyperbolic manifolds. Classical and Quantum Gravity, 2018, 35, 115015.	4.0	14
81	On the structure of spatial infinity. II. Geodesically regular Ashtekarâ€“Hansen structures. Journal of Mathematical Physics, 1989, 30, 2094-2100.	1.1	12
82	A remark on differentiability of Cauchy horizons. Classical and Quantum Gravity, 1998, 15, 3845-3848.	4.0	12
83	Cauchy horizons in Gowdy spacetimes. Classical and Quantum Gravity, 2004, 21, S153-S169.	4.0	12
84	Non-Singular, Vacuum, Stationary Space-Times with a Negative Cosmological Constant. Annales Henri Poincare, 2007, 8, 219-239.	1.7	12
85	The Isometry Groups of Asymptotically Flat, Asymptotically Empty Space-Times with Timelike ADM Four-Momentum. Communications in Mathematical Physics, 1997, 188, 585-597.	2.2	11
86	On the dynamics of Gowdy space-times. Communications on Pure and Applied Mathematics, 2004, 57, 1015-1074.	3.1	11
87	On free general relativistic initial data on the light cone. Journal of Geometry and Physics, 2012, 62, 578-593.	1.4	11
88	Initial Data Sets with Ends of Cylindrical Type: I. The Lichnerowicz Equation. Annales Henri Poincare, 2015, 16, 1231-1266.	1.7	11
89	On angular momentum at spatial infinity. Classical and Quantum Gravity, 1987, 4, L205-L210.	4.0	10
90	A poor man's positive energy theorem. Classical and Quantum Gravity, 2004, 21, L59-L63.	4.0	10

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91	Asymptotic estimates in Weighted HÃ¶lder spaces for a class of elliptic scale-covariant second order operators. Annales De La FacultÃ© Des Sciences De Toulouse, 1990, 11, 21-37.	0.3	10
92	Manifold structures for sets of solutions of the general relativistic constraint equations. Journal of Geometry and Physics, 2004, 51, 442-472.	1.4	9
93	Conformal boundary extensions of Lorentzian manifolds. Journal of Differential Geometry, 2010, 84, .	1.1	9
94	Bifurcating Solutions of the Lichnerowicz Equation. Annales Henri Poincare, 2017, 18, 643-679.	1.7	9
95	Exotic hyperbolic gluings. Journal of Differential Geometry, 2018, 108, .	1.1	9
96	Initial data sets with ends of cylindrical type: II. The vector constraint equation.. Advances in Theoretical and Mathematical Physics, 2013, 17, 829-865.	0.6	9
97	POLYHOMOGENEOUS SOLUTIONS OF NONLINEAR WAVE EQUATIONS WITHOUT CORNER CONDITIONS. Journal of Hyperbolic Differential Equations, 2006, 03, 81-141.	0.5	8
98	On smoothness of black saturns. Journal of High Energy Physics, 2010, 2010, 1.	4.7	8
99	KIDs like cones. Classical and Quantum Gravity, 2013, 30, 235036.	4.0	8
100	Non-singular space-times with a negative cosmological constant: II. Static solutions of the Einsteinâ€“Maxwell equations. Letters in Mathematical Physics, 2017, 107, 1391-1407.	1.1	8
101	Weakly gravitating isotropic waveguides. Classical and Quantum Gravity, 2018, 35, 244001.	4.0	8
102	Unique continuation and extensions of Killing vectors at boundaries for stationary vacuum space-times. Journal of Geometry and Physics, 2011, 61, 1249-1257.	1.4	7
103	On maximal globally hyperbolic vacuum space-times. Journal of Fixed Point Theory and Applications, 2013, 14, 325-353.	1.1	7
104	Hamiltonian dynamics in the space of asymptotically Kerrâ€“de Sitter spacetimes. Physical Review D, 2015, 92, .	4.7	7
105	Towards a classification of vacuum near-horizons geometries. Classical and Quantum Gravity, 2018, 35, 015002.	4.0	7
106	Energy of weak gravitational waves in spacetimes with a positive cosmological constant. Physical Review D, 2021, 103, .	4.7	7
107	On the canonical energy of weak gravitational fields with a cosmological constant $$varLambda in mathbb {R}$$. European Physical Journal C, 2021, 81, 696.	3.9	7
108	On the structure of spatial infinity. I. The Geroch structure. Journal of Mathematical Physics, 1989, 30, 2090-2093.	1.1	6

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109	The Ernst equation and ergosurfaces. Classical and Quantum Gravity, 2006, 23, 4399-4414.	4.0	6
110	The asymptotics of stationary electro-vacuum metrics in odd spacetime dimensions. Classical and Quantum Gravity, 2007, 24, 867-874.	4.0	6
111	SOLUTIONS OF QUASI-LINEAR WAVE EQUATIONS POLYHOMOGENEOUS AT NULL INFINITY IN HIGH DIMENSIONS. Journal of Hyperbolic Differential Equations, 2011, 08, 269-346.	0.5	6
112	The mass of light-cones. Classical and Quantum Gravity, 2014, 31, 102001.	4.0	6
113	Vacuum spacetimes with controlled singularities and without symmetries. Physical Review D, 2015, 92, .	4.7	6
114	The annoying null boundaries. Journal of Physics: Conference Series, 2018, 968, 012003.	0.4	6
115	Remarks on the energy of asymptotically Horowitz-Myers metrics. Physical Review D, 2020, 101, .	4.7	6
116	On linearised vacuum constraint equations on Einstein manifolds. Classical and Quantum Gravity, 2020, 37, 215012.	4.0	6
117	On the global structure of the Pomeranskyâ€“Senkov black holes. Advances in Theoretical and Mathematical Physics, 2010, 14, 1779-1856.	0.6	6
118	A poor man's positive energy theorem: II. Null geodesics. Classical and Quantum Gravity, 2004, 21, 4399-4415.	4.0	5
119	Uniqueness of static black holes without analyticity. Classical and Quantum Gravity, 2010, 27, 152001.	4.0	5
120	A lower bound for the mass of axisymmetric connected black hole data sets. Classical and Quantum Gravity, 2011, 28, 125001.	4.0	5
121	Shielding linearized gravity. Physical Review D, 2017, 95, .	4.7	5
122	Energy in higher-dimensional spacetimes. Physical Review D, 2017, 96, .	4.7	5
123	Radiation fields. Bulletin De La Societe Mathematique De France, 2005, 133, 1-72.	0.2	5
124	On the characteristic initial value problem for nonlinear symmetric hyperbolic systems, including Einstein equations. Dissertationes Mathematicae, 0, , 1-72.	1.0	5
125	Uniqueness of Scalar Field Energy and Gravitational Energy in the Radiating Regime. Physical Review Letters, 1998, 80, 5052-5055.	7.8	4
126	Non-singular space-times with a negative cosmological constant: V. Boson stars. Letters in Mathematical Physics, 2018, 108, 2009-2030.	1.1	4

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127	Uniqueness and energy bounds for static AdS metrics. Physical Review D, 2020, 101, .	4.7	4
128	Positive mass theorems for asymptotically hyperbolic Riemannian manifolds with boundary. Classical and Quantum Gravity, 0, , .	4.0	4
129	On the Dynamics of Generators of Cauchy Horizons. NATO ASI Series Series B: Physics, 1994, , 113-125.	0.2	4
130	Maximal analytic extensions of the Emparan-Reall black ring. Journal of Differential Geometry, 2010, 85, .	1.1	4
131	Nonsingular spacetimes with a negative cosmological constant: Stationary solutions with matter fields. Physical Review D, 2017, 95, .	4.7	3
132	Long time existence from interior gluing. Classical and Quantum Gravity, 2017, 34, 145016.	4.0	3
133	Weakly trapped surfaces in asymptotically de Sitter spacetimes. Classical and Quantum Gravity, 2018, 35, 135001.	4.0	3
134	Structure of the singular ring in Kerr-like metrics. Physical Review D, 2020, 101, .	4.7	3
135	A remark on the positive-energy theorem. Classical and Quantum Gravity, 1987, 4, 1049-1049.	4.0	2
136	Editor's Note: Lectures on General Relativity by Andrzej Trautman. General Relativity and Gravitation, 2002, 34, 715-719.	2.0	2
137	Some potentials for the curvature tensor on three-dimensional manifolds. General Relativity and Gravitation, 2005, 37, 891-905.	2.0	2
138	On Masonâ€™s Rigidity Theorem. Communications in Mathematical Physics, 2009, 285, 1-29.	2.2	2
139	Ghost points in inverse scattering constructions of stationary Einstein metrics. General Relativity and Gravitation, 2011, 43, 1615-1624.	2.0	2
140	The Euclidean quantisation of Kerr-Newman-de Sitter black holes. Journal of High Energy Physics, 2016, 2016, 1-37.	4.7	2
141	Compact singularity-free Kerrâ€“Newmanâ€“de Sitter instantons. Physical Review D, 2017, 95, .	4.7	2
142	An angular momentum bound at null infinity. Advances in Theoretical and Mathematical Physics, 2009, 13, 1317-1334.	0.6	2
143	Stable causality of the Pomeranskyâ€“Senkov black holes. Advances in Theoretical and Mathematical Physics, 2011, 15, 175-178.	0.6	2
144	On the total mass of asymptotically hyperbolic manifolds. Pure and Applied Mathematics Quarterly, 2019, 15, 683-706.	0.4	2

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145	On non-degeneracy of Riemannian Schwarzschild-antiÂdeÂSitter metrics. Advances in Theoretical and Mathematical Physics, 2019, 23, 1215-1269.	0.6	2
146	RECENT RESULTS IN MATHEMATICAL RELATIVITY. , 2005, , .		1
147	A property of light-cones in Einstein's gravity. Comptes Rendus Mathematique, 2009, 347, 971-977.	0.3	1
148	Initial data for the relativistic gravitational N -body problem. Classical and Quantum Gravity, 2010, 27, 222002.	4.0	1
149	Outer trapped surfaces are dense near MOTSs. Classical and Quantum Gravity, 2014, 31, 045013.	4.0	1
150	Non-singular spacetimes with a negative cosmological constant: IV. Stationary black hole solutions with matter fields. Classical and Quantum Gravity, 2018, 35, 035007.	4.0	1
151	The electromagnetic field in gravitational wave interferometers [*]. Classical and Quantum Gravity, 2021, 38, 215004.	4.0	1
152	Stationary Black Holes: Uniqueness and Beyond. , 0, .		1
153	Asymptotic flatness in higher dimensions. Journal of Mathematical Physics, 2022, 63, 032501.	1.1	1
154	The Hamiltonian Mass and Asymptotically Anti-de Sitter Space-times. Fortschritte Der Physik, 2002, 50, 624-629.	4.4	0
155	BLACK HOLES â€“ AN INTRODUCTION. , 2005, , 93-123.		0
156	Maximal analytic extensions of the Emparan-Reall black ring. Journal of Physics: Conference Series, 2010, 229, 012030.	0.4	0
157	A2: Mathematical relativity and other progress in classical gravity theoryâ€”a session report. General Relativity and Gravitation, 2014, 46, 1.	2.0	0
158	Asymptotically flat Einsteinâ€“Maxwell fields are inheriting. Communications in Analysis and Geometry, 2021, 29, 579-627.	0.4	0
159	A Brief Review of Initial Data Engineering. , 2006, , .		0
160	Mathematical Aspects of General Relativity. Oberwolfach Reports, 2010, 6, 2585-2646.	0.0	0
161	EINSTEIN CONSTRAINTS ON A CHARACTERISTIC CONE. , 2010, , .		0