

Fabian Becherer

List of Publications by Year in descending order

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108
papers

2,501
citations

236925

25
h-index

243625

44
g-index

115
all docs

115
docs citations

115
times ranked

5353
citing authors

#	ARTICLE	IF	CITATIONS
1	Combined measurements of Higgs boson production and decay using up to 80 fb^{-1} of proton-proton collision data at $\sqrt{s} = 13 \text{ TeV}$ with the ATLAS detector. Physical Review D, 2020, 103, 1.	1.2	24
2	ATLAS b-jet identification performance and efficiency measurement with 36.1 fb^{-1} events in pp collisions at $\sqrt{s} = 13 \text{ TeV}$. European Physical Journal C, 2019, 79, 1.	3.9	130
3	Electron and photon performance measurements with the ATLAS detector using the 2015–2017 LHC proton-proton collision data. Journal of Instrumentation, 2019, 14, P12006-P12006.	1.2	124
4	Performance of electron and photon triggers in ATLAS during LHC Run 2. European Physical Journal C, 2020, 80, 1.	3.9	93
5	Muon reconstruction and identification efficiency in ATLAS using the full Run 2 pp collision data set at $\sqrt{s} = 13 \text{ TeV}$. European Physical Journal C, 2021, 81, 1.	3.9	82
6	ATLAS data quality operations and performance for 2015–2018 data-taking. Journal of Instrumentation, 2020, 15, P04003-P04003.	1.2	68
7	Search for new phenomena in events with an energetic jet and missing transverse momentum in 36.1 fb^{-1} of proton-proton collisions at $\sqrt{s} = 13 \text{ TeV}$ with the ATLAS detector. Physical Review D, 2021, 103, 1.	4.7	64
8	Jet energy scale and resolution measured in proton-proton collisions at $\sqrt{s} = 13 \text{ TeV}$ with the ATLAS detector. European Physical Journal C, 2021, 81, 1.	3.9	64
9	Cross-section measurements of the Higgs boson decaying into a pair of τ -leptons in proton-proton collisions at $\sqrt{s} = 13 \text{ TeV}$ with the ATLAS detector. Physical Review D, 2019, 99, 1.	4.7	63
10	Performance of the ATLAS muon triggers in Run 2. Journal of Instrumentation, 2020, 15, P09015-P09015.	1.2	62
11	A search for the dimuon decay of the Standard Model Higgs boson with the ATLAS detector. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2021, 812, 135980.	4.1	61
12	Search for charged Higgs bosons decaying into a top quark and a bottom quark at $\sqrt{s} = 13 \text{ TeV}$ with the ATLAS detector. Journal of High Energy Physics, 2021, 2021, 1.	4.7	46
13	Higgs boson production cross-section measurements and their EFT interpretation in the 4ℓ decay channel at $\sqrt{s} = 13 \text{ TeV}$ with the ATLAS detector. European Physical Journal C, 2020, 80, 1.	3.9	41
14	Search for heavy resonances decaying into a pair of Z bosons in the $e^+e^- \rightarrow e^+e^- Z Z$ and $e^+e^- \rightarrow e^+e^- \gamma Z$ final states using 139 fb^{-1} of proton-proton collisions at $\sqrt{s} = 13 \text{ TeV}$ with the ATLAS detector. European Physical Journal C, 2021, 81, 1.	3.9	40
15	Measurements of WH and ZH production in the $H \rightarrow b\bar{b}$ decay channel in pp collisions at $\sqrt{s} = 13 \text{ TeV}$ with the ATLAS detector. European Physical Journal C, 2021, 81, 1.	3.9	38
16	Search for squarks and gluinos in final states with jets and missing transverse momentum using 139 fb^{-1} of $\sqrt{s} = 13 \text{ TeV}$ pp collision data with the ATLAS detector. Journal of High Energy Physics, 2021, 2021, 1.	4.7	37
17	Search for pairs of scalar leptoquarks decaying into quarks and electrons or muons in $\sqrt{s} = 13 \text{ TeV}$ pp collisions with the ATLAS detector. Journal of High Energy Physics, 2020, 2020, 1.	4.7	36
18	Search for a scalar partner of the top quark in the all-hadronic $t\bar{t}$ plus missing transverse momentum final state at $\sqrt{s} = 13 \text{ TeV}$ with the ATLAS detector. European Physical Journal C, 2020, 80, 1.	3.9	36

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19	Measurements of top-quark pair differential and double-differential cross-sections in the $\ell\ell+b\bar{b}$ jets channel with pp collisions at $\sqrt{s}=13$ TeV using the ATLAS detector. European Physical Journal C, 2019, 79, 1.	3.9	34
20	Search for direct production of electroweakinos in final states with one lepton, missing transverse momentum and a Higgs boson decaying into two b-jets in pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector. European Physical Journal C, 2020, 80, 1.	3.9	34
21	Measurements of the Higgs boson inclusive and differential fiducial cross sections in the $\ell\ell$ decay channel at $\sqrt{s}=13$ TeV. European Physical Journal C, 2020, 80, 1.	3.9	32
22	Evidence for $\tau\tau$ production in the multilepton final state in proton-proton collisions at $\sqrt{s}=13$ TeV with the ATLAS detector. European Physical Journal C, 2020, 80, 1.	3.9	30
23	Search for heavy diboson resonances in semileptonic final states in pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector. European Physical Journal C, 2020, 80, 1.	3.9	29
24	Search for chargino-neutralino pair production in final states with three leptons and missing transverse momentum in $\sqrt{s}=13$ TeV pp collisions with the ATLAS detector. European Physical Journal C, 2021, 81, 1.	3.9	28
25	Search for pair production of third-generation scalar leptoquarks decaying into a top quark and a τ -lepton in pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector. Journal of High Energy Physics, 2021, 2021, 1.	4.7	27
26	Search for a heavy Higgs boson decaying into a Z boson and another heavy Higgs boson in the $\ell\ell b\bar{b}$ and $\ell\ell W\bar{W}$ final states in pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector. European Physical Journal C, 2021, 81, 1.	3.9	26
27	Search for a heavy Higgs boson decaying into a Z boson and another heavy Higgs boson in the $\ell\ell b\bar{b}$ and $\ell\ell W\bar{W}$ final states in pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector. European Physical Journal C, 2021, 81, 1.	4.7	25
28	Measurement of the cross-section and charge asymmetry of W bosons produced in proton-proton collisions at $\sqrt{s}=8$ TeV with the ATLAS detector. European Physical Journal C, 2019, 79, 1.	3.9	24
29	Measurement of fiducial and differential W^+W^- production cross-sections at $\sqrt{s}=13$ TeV with the ATLAS detector. European Physical Journal C, 2019, 79, 1.	3.9	24
30	Search for new non-resonant phenomena in high-mass dilepton final states with the ATLAS detector. Journal of High Energy Physics, 2020, 2020, 1.	4.7	24
31	Search for doubly and singly charged Higgs bosons decaying into vector bosons in multi-lepton final states with the ATLAS detector using proton-proton collisions at $\sqrt{s}=13$ TeV. Journal of High Energy Physics, 2021, 2021, 1.	4.7	23
32	AtlFast3: The Next Generation of Fast Simulation in ATLAS. Computing and Software for Big Science, 2022, 6, 1.	2.9	23
33	Search for heavy neutral Higgs bosons produced in association with top quarks and decaying into $b\bar{b}$ -quarks at $\sqrt{s}=13$ TeV with the ATLAS detector. European Physical Journal C, 2021, 81, 1.	4.7	22
34	Search for new phenomena in events with two opposite-charge leptons, jets and missing transverse momentum in pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector. Journal of High Energy Physics, 2021, 2021, 1.	4.7	22
35	Search for squarks and gluinos in final states with same-sign leptons and jets using 139 fb ⁻¹ of data collected with the ATLAS detector. Journal of High Energy Physics, 2020, 2020, 1.	4.7	19
36	Measurement of light-by-light scattering and search for axion-like particles with 2.2 nb ⁻¹ of Pb+Pb data with the ATLAS detector. Journal of High Energy Physics, 2021, 2021, 1.	4.7	19

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37	Search for dark matter in association with an energetic photon in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector. Journal of High Energy Physics, 2021, 2021, 1.	4.7	18
38	Search for pair production of scalar leptoquarks decaying into first- or second-generation leptons and top quarks in proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector. European Physical Journal C, 2021, 81, 1.	3.9	18
39	Search for new phenomena in final states with b-jets and missing transverse momentum in $\sqrt{s} = 13$ TeV pp collisions with the ATLAS detector. Journal of High Energy Physics, 2021, 2021, 1.	4.7	18
40	Performance of the missing transverse momentum triggers for the ATLAS detector during Run-2 data taking. Journal of High Energy Physics, 2020, 2020, 1.	4.7	17
41	Search for the HH $\hat{\tau}^+ \tau^-$ process via vector-boson fusion production using proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector. Journal of High Energy Physics, 2020, 2020, 1.	4.7	17
42	Search for type-III seesaw heavy leptons in dilepton final states in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector. European Physical Journal C, 2021, 81, 1.	3.9	17
43	Search for Higgs boson decays into a pair of pseudoscalar particles in the $b\bar{b}$ final state with the ATLAS detector in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector. Journal of High Energy Physics, 2021, 2021, 1.	4.7	17
44	Optimisation of large-radius jet reconstruction for the ATLAS detector in 13 TeV proton-proton collisions. European Physical Journal C, 2021, 81, 1.	3.9	15
45	Test of the universality of \tilde{l}_μ and \tilde{l}_τ lepton couplings in W-boson decays with the ATLAS detector. Nature Physics, 2021, 17, 813-818.	16.7	15
46	Search for new phenomena with top quark pairs in final states with one lepton, jets, and missing transverse momentum in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector. Journal of High Energy Physics, 2021, 2021, 1.	4.7	14
47	Measurements of Higgs bosons decaying to bottom quarks from vector boson fusion production with the ATLAS experiment at $\sqrt{s} = 13$ TeV. European Physical Journal C, 2021, 81, 1.	3.9	14
48	Search for New Phenomena in Final States with Two Leptons and One or No b-Tagged Jets at $\sqrt{s} = 13$ TeV Using the ATLAS Detector. Physical Review Letters, 2021, 127, 141801.	7.8	14
49	Measurements of top-quark pair single- and double-differential cross-sections in the all-hadronic channel in pp collisions at $\sqrt{s} = 13$ TeV using the ATLAS detector. Journal of High Energy Physics, 2021, 2021, 1.	4.7	14
50	Search for $\overline{t}t$ resonances in fully hadronic final states in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector. Journal of High Energy Physics, 2020, 2020, 1.	4.7	14
51	Measurement of the c-jet mistagging efficiency in $t\bar{t}$ events using pp collision data at $\sqrt{s} = 13$ TeV collected with the ATLAS detector. European Physical Journal C, 2022, 82, .	3.9	14
52	Search for new phenomena in pp collisions in final states with tau leptons, b-jets, and missing transverse momentum with the ATLAS detector. Physical Review D, 2021, 104, .	4.7	14
53	Measurement of the CP-violating phase $\phi_{1,2}$ in $B_{s,d} \rightarrow J/\psi \phi$ decays in ATLAS at 13 TeV. European Physical Journal C, 2021, 81, .	3.9	13
54	Search for squarks and gluinos in final states with one isolated lepton, jets, and missing transverse momentum at $\sqrt{s} = 13$ TeV with the ATLAS detector. European Physical Journal C, 2021, 81, 1.	3.9	13

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55	Search for long-lived charginos based on a disappearing-track signature using 136 fb ⁻¹ of pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector. European Physical Journal C, 2022, 82, .	3.9	13
56	Observation of the associated production of a top quark and a Z boson in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector. Journal of High Energy Physics, 2020, 2020, 1.	4.7	12
57	Differential cross-section measurements for the electroweak production of dijets in association with a Z boson in proton-proton collisions at ATLAS. European Physical Journal C, 2021, 81, 1.	3.9	12
58	Search for supersymmetry in events with four or more charged leptons in 139 fb ⁻¹ of $\sqrt{s} = 13$ TeV pp collisions with the ATLAS detector. Journal of High Energy Physics, 2021, 2021, 1.	4.7	12
59	Measurements of the inclusive and differential production cross sections of a top-quark-antiquark pair in association with a Z boson at $\sqrt{s} = 13$ TeV with the ATLAS detector. European Physical Journal C, 2021, 81, 1.	3.9	12
60	Search for dark matter in events with missing transverse momentum and a Higgs boson decaying into two photons in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector. Journal of High Energy Physics, 2021, 2021, 1.	4.7	12
61	Alignment of the ATLAS Inner Detector in Run 2. European Physical Journal C, 2020, 80, 1.	3.9	12
62	Determination of the parton distribution functions of the proton using diverse ATLAS data from pp collisions at $\sqrt{s} = 7, 8$ and 13 TeV. European Physical Journal C, 2022, 82, 1.	3.9	12
63	Measurements of the production cross-section for a Z boson in association with b-jets in proton-proton collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector. Journal of High Energy Physics, 2020, 2020, 1.	4.7	11
64	Two-particle azimuthal correlations in photonuclear ultraperipheral collisions at 5.02 TeV with ATLAS. Physical Review C, 2021, 104, .	2.9	11
65	Exclusive dimuon production in ultraperipheral collisions at $\sqrt{s} = 5.02$ TeV with ATLAS. Physical Review C, 2021, 104, .	2.9	11
66	Determination of the parton distribution functions of the proton from ATLAS measurements of differential W [±] and Z boson production in association with jets. Journal of High Energy Physics, 2021, 2021, 1.	4.7	10
67	Measurement of the t \bar{t} production cross section in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector. Journal of High Energy Physics, 2021, 2021, 1.	4.7	10
68	Search for Higgs bosons decaying into new spin-0 or spin-1 particles in four-lepton final states with the ATLAS detector with 139 fb ⁻¹ of pp collision data at $\sqrt{s} = 13$ TeV. Journal of High Energy Physics, 2022, 2022, 1.	4.7	10
69	Search for dark matter produced in association with a Standard Model Higgs boson decaying into b-quarks using the full Run 2 dataset from the ATLAS detector. Journal of High Energy Physics, 2021, 2021, 1.	4.7	10
70	Search for resonant pair production of Higgs bosons in the final state using the ATLAS detector. Journal of High Energy Physics, 2021, 2021, 1.	4.7	10
71	Search for single production of a vectorlike quark decaying into a Higgs boson and top quark with fully hadronic final states using the ATLAS detector. Physical Review D, 2022, 105, .	4.7	10
72	Measurement of the inclusive cross-section for the production of jets in association with a Z boson in proton-proton collisions at 8 TeV using the ATLAS detector. European Physical Journal C, 2019, 79, 1.	3.9	9

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73	Search for dark matter produced in association with a single top quark in $\sqrt{s}=13$ TeV pp collisions with the ATLAS detector. European Physical Journal C, 2021, 81, 1. Evidence for electroweak production of two jets in association with a Z^0 pair in pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector. European Physical Journal C, 2022, 82, 1.	3.9	9
74	Search for associated production of a Z boson with an invisibly decaying Higgs boson or dark matter candidates at $\sqrt{s}=13$ TeV with the ATLAS detector. European Physical Journal C, 2022, 82, 1.	4.1	9
75	Measurements of $W+W^0$ + 1 jet production cross-sections in pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector. Journal of High Energy Physics, 2021, 2021, 1.	4.7	8
76	Search for charged-lepton-flavour violation in Z-boson decays with the ATLAS detector. Nature Physics, 2021, 17, 819-825.	16.7	8
77	Measurements of differential cross-sections in four-lepton events in 13 TeV proton-proton collisions with the ATLAS detector. Journal of High Energy Physics, 2021, 2021, 1.	4.7	8
78	Reconstruction and identification of boosted $d\bar{l}$ systems in a search for Higgs boson pairs using 13 TeV proton-proton collision data in ATLAS. Journal of High Energy Physics, 2020, 2020, 1.	4.7	8
79	Observation of electroweak production of two jets in association with an isolated photon and missing transverse momentum, and search for a Higgs boson decaying into invisible particles at $\sqrt{s}=13$ TeV with the ATLAS detector. European Physical Journal C, 2022, 82, 1.	3.9	8
80	Search for associated production of a Z boson with an invisibly decaying Higgs boson or dark matter candidates at $\sqrt{s}=13$ TeV with the ATLAS detector. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2022, 847, 157066.	4.1	8
81	Search for Lepton-Flavor Violation in Z-Boson Decays with the ATLAS Detector. Physical Review Letters, 2021, 127, 271801.	7.8	8
82	Search for R-parity-violating supersymmetry in a final state containing leptons and many jets with the ATLAS experiment using $\sqrt{s}=13$ TeV proton-proton collision data. European Physical Journal C, 2021, 81, 1.	3.9	7
83	Configuration and performance of the ATLAS b-jet triggers in Run 2. European Physical Journal C, 2021, 81, 1.	3.9	7
84	Search for flavour-changing neutral-current interactions of a top quark and a gluon in pp collisions at $\sqrt{s}=13$ TeV with the ATLAS detector. European Physical Journal C, 2022, 82, .	3.9	7
85	Search for Higgs boson production in association with a high-energy photon via vector-boson fusion with decay into bottom quark pairs at $\sqrt{s}=13$ TeV with the ATLAS detector. Journal of High Energy Physics, 2021, 2021, 1.	4.7	6
86	Performance of the ATLAS RPC detector and Level-1 muon barrel trigger at $\sqrt{s}=13$ TeV. Journal of Instrumentation, 2021, 16, P07029.	1.2	6
87	Performance of the ATLAS Level-1 topological trigger in Run 2. European Physical Journal C, 2022, 82, 1.	3.9	6
88	A search for the decays of stopped long-lived particles at $\sqrt{s}=13$ TeV with the ATLAS detector. Journal of High Energy Physics, 2021, 2021, 1.	4.7	5
89	The ATLAS Fast Tracker system. Journal of Instrumentation, 2021, 16, P07006.	1.2	5
90	Search for phenomena beyond the Standard Model in events with large b-jet multiplicity using the ATLAS detector at the LHC. European Physical Journal C, 2021, 81, 1.	3.9	5

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91	Emulating the impact of additional proton-proton interactions in the ATLAS simulation by presampling sets of inelastic Monte Carlo events. <i>Computing and Software for Big Science</i> , 2022, 6, 1.	2.9	5
92	The ATLAS inner detector trigger performance in pp collisions at 13 TeV during LHC Run 2. <i>European Physical Journal C</i> , 2022, 82, 1.	3.9	5
93	Constraints on Higgs boson production with large transverse momentum using $H \rightarrow b\bar{b}$ decays in the ATLAS detector. <i>Physical Review D</i> , 2022, 105, .	4.7	5
94	Performance of the upgraded PreProcessor of the ATLAS Level-1 Calorimeter Trigger. <i>Journal of Instrumentation</i> , 2020, 15, P11016-P11016.	1.2	4
95	Measurement of hadronic event shapes in high-pT multijet final states at $\sqrt{s} = 13$ TeV with the ATLAS detector. <i>Journal of High Energy Physics</i> , 2021, 2021, 1.	4.7	4
96	Search for top squarks in events with a Higgs or Z boson using 139 fb ⁻¹ of pp collision data at $\sqrt{s} = 13$ TeV with the ATLAS detector. <i>European Physical Journal C</i> , 2020, 80, 1.	3.9	4
97	Measurement of the energy response of the ATLAS calorimeter to charged pions from $W \rightarrow \mu \nu$ events in Run 2 data. <i>European Physical Journal C</i> , 2022, 82, 1.	3.9	4
98	Measurement of the production cross section of pairs of isolated photons in pp collisions at 13 TeV with the ATLAS detector. <i>Journal of High Energy Physics</i> , 2021, 2021, 1.	4.7	4
99	Search for exotic decays of the Higgs boson into long-lived particles in pp collisions at $\sqrt{s} = 13$ TeV using displaced vertices in the ATLAS inner detector. <i>Journal of High Energy Physics</i> , 2021, 2021, 1.	4.7	4
100	Measurement of single top-quark production in association with a W boson in the single-lepton channel at $\sqrt{s} = 8$, ext {TeV} with the ATLAS detector. <i>European Physical Journal C</i> , 2021, 81, 1.	3.9	3
101	Measurements of sensor radiation damage in the ATLAS inner detector using leakage currents. <i>Journal of Instrumentation</i> , 2021, 16, P08025.	1.2	3
102	Measurement of b-quark fragmentation properties in jets using the decay $B \rightarrow J/\psi K$ in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector. <i>Journal of High Energy Physics</i> , 2021, 2021, 1.	4.7	3
103	Two-particle Bose-Einstein correlations in $\{pp\}$ collisions at $\sqrt{s} = 13$ TeV measured with the ATLAS detector at the LHC. <i>European Physical Journal C</i> , 2022, 82, .	3.9	3
104	Search for heavy particles in the b-tagged dijet mass distribution with additional b-tagged jets in proton-proton collisions at $s = 13$ TeV with the ATLAS experiment. <i>Physical Review D</i> , 2022, 105, .	4.7	2
105	Search for exotic decays of the Higgs boson into $b\bar{b}$ and missing transverse momentum in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector. <i>Journal of High Energy Physics</i> , 2022, 2022, 1.	4.7	2
106	Measurement of the energy asymmetry in $t\bar{t}$ production at $\sqrt{s} = 13$ TeV with the ATLAS experiment and interpretation in the SMEFT framework. <i>European Physical Journal C</i> , 2022, 82, .	3.9	2
107	Operation and performance of the ATLAS semiconductor tracker in LHC Run 2. <i>Journal of Instrumentation</i> , 2022, 17, P01013.	1.2	1
108	A search for an unexpected asymmetry in the production of e^+e^- and e^+e^- pairs in proton-proton collisions recorded by the ATLAS detector at $\sqrt{s} = 13$ TeV. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2022, 830, 137106.	4.1	1