

Sven-Olaf Moch

List of Publications by Year in descending order

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126
papers

9,501
citations

38742

50
h-index

36028

97
g-index

128
all docs

128
docs citations

128
times ranked

7765
citing authors

#	ARTICLE	IF	CITATIONS
1	The three-loop splitting functions in QCD: the non-singlet case. Nuclear Physics B, 2004, 688, 101-134.	2.5	938
2	The three-loop splitting functions in QCD: the singlet case. Nuclear Physics B, 2004, 691, 129-181.	2.5	661
3	A facility to search for hidden particles at the CERN SPS: the SHiP physics case. Reports on Progress in Physics, 2016, 79, 124201.	20.1	496
4	HATHOR – HAdronic Top and Heavy quarks cross section calculator. Computer Physics Communications, 2011, 182, 1034-1046.	7.5	454
5	A Large Hadron Electron Collider at CERN Report on the Physics and Design Concepts for Machine and Detector. Journal of Physics G: Nuclear and Particle Physics, 2012, 39, 075001.	3.6	406
6	The top quark and Higgs boson masses and the stability of the electroweak vacuum. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2012, 716, 214-219.	4.1	308
7	The third-order QCD corrections to deep-inelastic scattering by photon exchange. Nuclear Physics B, 2005, 724, 3-182.	2.5	288
8	Parton distribution functions, $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"> < \text{mml:msub} < \text{mml:mi} > \pm < / \text{mml:mi} > < \text{mml:mi} > s < / \text{mml:mi} > < / \text{mml:msub} > < / \text{mml:math} >$, and heavy-quark masses for LHC Run II. Physical Review D, 2017, 96, .	4.7	258
9	Higher-order soft corrections to lepton pair and Higgs boson production. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2005, 631, 48-57.	4.1	241
10	Higgs Boson Production via Vector-Boson Fusion at Next-to-Next-to-Leading Order in QCD. Physical Review Letters, 2010, 105, 011801.	7.8	224
11	Theoretical status and prospects for top-quark pair production at hadron colliders. Physical Review D, 2008, 78, .	4.7	218
12	Parton distribution functions and benchmark cross sections at next-to-next-to-leading order. Physical Review D, 2012, 86, .	4.7	214
13	Measuring the running top-quark mass. Physical Review D, 2009, 80, .	4.7	187
14	3-, 4-, and 5-flavor next-to-next-to-leading order parton distribution functions from deep-inelastic-scattering data and at hadron colliders. Physical Review D, 2010, 81, .	4.7	178
15	Deep-inelastic structure functions at two loops. Nuclear Physics B, 2000, 573, 853-907.	2.5	170
16	The ABM parton distributions tuned to LHC data. Physical Review D, 2014, 89, .	4.7	170
17	The quark form factor at higher orders. Journal of High Energy Physics, 2005, 2005, 049-049.	4.7	166
18	Three-loop results for quark and gluon form factors. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2005, 625, 245-252.	4.1	165

#	ARTICLE	IF	CITATIONS
19	The longitudinal structure function at the third order. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2005, 606, 123-129.	4.1	136
20	Higher-order corrections in threshold resummation. <i>Nuclear Physics B</i> , 2005, 726, 317-335.	2.5	123
21	-XSummer- Transcendental functions and symbolic summation in Form. <i>Computer Physics Communications</i> , 2006, 174, 759-770.	7.5	109
22	Four-loop non-singlet splitting functions in the planar limit and beyond. <i>Journal of High Energy Physics</i> , 2017, 2017, 1.	4.7	103
23	Hadronic top-quark pair-production with one jet and parton showering. <i>Journal of High Energy Physics</i> , 2012, 2012, 1.	4.7	101
24	Next-to-next-to-leading order evolution of non-singlet fragmentation functions. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2006, 638, 61-67.	4.1	94
25	The singular behavior of massive QCD amplitudes. <i>Journal of High Energy Physics</i> , 2007, 2007, 001-001.	4.7	93
26	A critical appraisal and evaluation of modern PDFs. <i>European Physical Journal C</i> , 2016, 76, 1.	3.9	90
27	The Large Hadronâ€“Electron Collider at the HL-LHC. <i>Journal of Physics G: Nuclear and Particle Physics</i> , 2021, 48, 110501.	3.6	89
28	Heavy-quark production in gluon fusion at two loops in QCD. <i>Nuclear Physics B</i> , 2008, 798, 210-250.	2.5	87
29	Heavy-quark pair production at two loops in QCD. <i>Nuclear Physics, Section B, Proceedings Supplements</i> , 2008, 183, 75-80.	0.4	85
30	On quartic colour factors in splitting functions and the gluon cusp anomalous dimension. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2018, 782, 627-632.	4.1	82
31	The three-loop splitting functions in QCD: The helicity-dependent case. <i>Nuclear Physics B</i> , 2014, 889, 351-400.	2.5	80
32	Vector boson fusion at next-to-next-to-leading order in QCD: Standard model Higgs boson and beyond. <i>Physical Review D</i> , 2012, 85, .	4.7	77
33	Heavy-quark production in massless quark scattering at two loops in QCD. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2007, 651, 147-159.	4.1	76
34	Heavy-quark deep-inelastic scattering with a running mass. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2011, 699, 345-353.	4.1	72
35	On third-order timelike splitting functions and top-mediated Higgs decay into hadrons. <i>Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics</i> , 2008, 659, 290-296.	4.1	71
36	Third-order QCD corrections to the charged-current structure function. <i>Nuclear Physics B</i> , 2009, 813, 220-258.	2.5	69

#	ARTICLE	IF	CITATIONS
37	Approximate N ³ LO Higgs-boson production cross section using physical-kernel constraints. Journal of High Energy Physics, 2014, 2014, 1.	4.7	68
38	Top-quark pair production near threshold at LHC. European Physical Journal C, 2009, 60, 375-386.	3.9	66
39	Non-singlet structure functions at three loops: Fermionic contributions. Nuclear Physics B, 2002, 646, 181-200.	2.5	65
40	QCD corrections to semi-inclusive hadron production in electron-positron annihilation at two loops. Nuclear Physics B, 2006, 751, 18-52.	2.5	63
41	Analytic continuation of the harmonic sums for the 3-loop anomalous dimensions. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2005, 614, 53-61.	4.1	62
42	On the next-to-next-to-leading order evolution of flavour-singlet fragmentation functions. Nuclear Physics B, 2012, 854, 133-152.	2.5	62
43	Precise charm-quark mass from deep-inelastic scattering. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2013, 720, 172-176.	4.1	60
44	AutoDipole – Automated generation of dipole subtraction terms –. Computer Physics Communications, 2010, 181, 1802-1817.	7.5	57
45	On Higgs-exchange DIS, physical evolution kernels and fourth-order splitting functions at large x. Nuclear Physics B, 2010, 832, 152-227.	2.5	57
46	Lepton fluxes from atmospheric charm revisited. Journal of High Energy Physics, 2015, 2015, 1.	4.7	57
47	A new observable to measure the top-quark mass at hadron colliders. European Physical Journal C, 2013, 73, 1.	3.9	54
48	NLO PDFs from the ABMP16 fit. European Physical Journal C, 2018, 78, 1.	3.9	53
49	Soft gluon resummation for heavy quark electroproduction. Physical Review D, 1999, 59, .	4.7	51
50	On non-singlet physical evolution kernels and large- x coefficient functions in perturbative QCD. Journal of High Energy Physics, 2009, 2009, 099-099.	4.7	50
51	On the next-to-next-to-leading order QCD corrections to heavy-quark production in deep-inelastic scattering. Nuclear Physics B, 2012, 864, 399-468.	2.5	45
52	Determination of strange sea quark distributions from fixed-target and collider data. Physical Review D, 2015, 91, .	4.7	43
53	Higher-order soft corrections to squark hadro-production. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2009, 675, 210-221.	4.1	42
54	Top-quark pair production at hadron colliders: differential cross section and phenomenological applications with DiffTop. Journal of High Energy Physics, 2015, 2015, 1.	4.7	41

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55	Prompt neutrinos from atmospheric charm in the general-mass variable-flavor-number scheme. Journal of High Energy Physics, 2017, 2017, 1.	4.7	40
56	The QCD form factor of heavy quarks at NNLO. Journal of High Energy Physics, 2009, 2009, 001-001.	4.7	39
57	On top-pair hadro-production at next-to-next-to-leading order. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2012, 714, 48-54.	4.1	38
58	Prompt neutrino fluxes in the atmosphere with PROSA parton distribution functions. Journal of High Energy Physics, 2017, 2017, 1.	4.7	38
59	Five-loop contributions to low-N non-singlet anomalous dimensions in QCD. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2019, 790, 436-443.	4.1	37
60	Analytic integration of real-virtual counterterms in NNLO jet cross sections II. Journal of High Energy Physics, 2009, 2009, 079-079.	4.7	36
61	On higher-order QCD calculations and the NNLO evolution of the polarized valence distribution. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2015, 748, 432-438.	4.1	36
62	Towards the NNLO evolution of polarised parton distributions. Nuclear Physics, Section B, Proceedings Supplements, 2008, 183, 155-161.	0.4	34
63	Threshold resummation of the structure function F_L . Journal of High Energy Physics, 2009, 2009, 081-081.	4.7	32
64	On threshold resummation of the structure function F_L and the NNLO evolution of the polarized valence distribution. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2011, 700, 294-304.	4.1	32
65	Three-loop evolution equation for flavor-nonsinglet operators in off-forward kinematics. Journal of High Energy Physics, 2017, 2017, 1.	4.7	32
66	Threshold and Jet Radius Joint Resummation for Single-Inclusive Jet Production. Physical Review Letters, 2017, 119, 212001.	7.8	31
67	NNLO benchmarks for gauge and Higgs boson production at TeV hadron colliders. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2011, 697, 127-135.	4.1	30
68	Strange sea determination from collider data. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2018, 777, 134-140.	4.1	29
69	Soft corrections to inclusive deep-inelastic scattering at four loops and beyond. Journal of High Energy Physics, 2020, 2020, 1.	4.7	29
70	Higher order QCD corrections to charged-lepton deep-inelastic scattering and global fits of parton distributions. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2009, 672, 166-171.	4.1	27
71	Higher order QCD corrections to charged-lepton deep-inelastic scattering and global fits of parton distributions. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2009, 672, 166-171.	4.1	27
72	Calibration of the Top-Quark Monte-Carlo Mass. Physical Review Letters, 2016, 116, 162001.	7.8	24

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73	Next-to-next-to-leading order QCD corrections to the photon's parton structure. Nuclear Physics B, 2002, 621, 413-458.	2.5	23
74	Higher-order constraints on the Higgs production rate from fixed-target DIS data. European Physical Journal C, 2011, 71, 1.	3.9	23
75	QCD threshold corrections for gluino pair production at hadron colliders. Journal of High Energy Physics, 2012, 2012, 1.	4.7	23
76	Approximate four-loop QCD corrections to the Higgs-boson production cross section. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2020, 807, 135546.	4.1	23
77	Higgs production at NNLO in QCD: the VBF channel. Nuclear Physics, Section B, Proceedings Supplements, 2010, 205-206, 314-319.	0.4	22
78	Differential distributions for top-quark hadro-production with a running mass. European Physical Journal C, 2014, 74, 1.	3.9	22
79	Low moments of the four-loop splitting functions in QCD. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2022, 825, 136853.	4.1	22
80	Higher-order threshold resummation for semi-inclusive $e^+e^- \rightarrow e^+e^- + \text{jet} + \text{jet}$ annihilation. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2009, 680, 239-246.	4.1	22
81	Phenomenology of single-inclusive jet production with jet radius and threshold resummation. Physical Review D, 2018, 97, .	4.7	21
82	Differences between charged-current coefficient functions. Nuclear Physics B, 2008, 790, 317-335.	2.5	20
83	Two-loop coefficient function for DVCS: vector contributions. Journal of High Energy Physics, 2020, 2020, 1.	4.7	20
84	Charged current deep-inelastic scattering at three loops. Nuclear Physics B, 2007, 782, 51-78.	2.5	18
85	Phenomenology of threshold corrections for inclusive jet production at hadron colliders. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2014, 730, 122-129.	4.1	18
86	Precision studies for Drell-Yan processes at NNLO. European Physical Journal C, 2021, 81, 1.	3.9	18
87	Hypergeometric Functions and Feynman Diagrams. Texts and Monographs in Symbolic Computation, 2021, 189-234.	0.4	17
88	Determination of the charm-quark mass in the $e^+e^- \rightarrow e^+e^- + \text{charm} + \text{charm}$ process. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2011, 695, 238-241.	4.1	16
89	Parton distribution uncertainties using smoothness prior. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2011, 695, 238-241.	4.1	15
90	Isospin asymmetry of quark distributions and implications for single top-quark production at the LHC. Physical Review D, 2016, 94, .	4.7	15

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91	The QCD Splitting Functions at Three Loops: Methods and Results. Nuclear Physics, Section B, Proceedings Supplements, 2004, 135, 137-146.	0.4	14
92	Determination of the top-quark mass from hadro-production of single top-quarks. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2016, 763, 341-346.	4.1	14
93	Two-loop conformal generators for leading-twist operators in QCD. Journal of High Energy Physics, 2016, 2016, 1.	4.7	14
94	Running of the charm-quark mass from HERA deep-inelastic scattering data. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2017, 775, 233-238.	4.1	14
95	First results for three-loop deep-inelastic structure functions in QCD. Nuclear Physics, Section B, Proceedings Supplements, 2003, 116, 100-104.	0.4	11
96	Axial-vector contributions in two-photon reactions: Pion transition form factor and deeply-virtual Compton scattering at NNLO in QCD. Physical Review D, 2021, 104, .	4.7	11
97	Two-loop evolution equations for flavor-singlet light-ray operators. Journal of High Energy Physics, 2019, 2019, 1.	4.7	10
98	Mathematics for structure functions. Nuclear Physics, Section B, Proceedings Supplements, 2000, 89, 131-136.	0.4	9
99	Third-order QCD results on form factors and coefficient functions. Nuclear Physics, Section B, Proceedings Supplements, 2006, 160, 44-50.	0.4	9
100	Heavy-flavor PDF evolution and variable-flavor-number scheme uncertainties in deep-inelastic scattering. Physical Review D, 2020, 102, .	4.7	8
101	Heavy-flavor hadro-production with heavy-quark masses renormalized in the $\overline{\text{MS}}$, MSR and on-shell schemes. Journal of High Energy Physics, 2021, 2021, 1.	4.7	7
102	Anti- k_T jet function at next-to-next-to-leading order. Physical Review D, 2021, 104, .	4.7	7
103	DETERMINATION OF $\hat{\Gamma}_S$ AND m_c IN DEEP-INELASTIC SCATTERING. Modern Physics Letters A, 2013, 28, 1360018.	1.2	5
104	The three-loop splitting functions in QCD. Nuclear Physics, Section B, Proceedings Supplements, 2006, 152, 110-115.	0.4	4
105	Expectations at LHC from hard QCD. Journal of Physics G: Nuclear and Particle Physics, 2008, 35, 073001.	3.6	4
106	On higher-order flavour-singlet splitting and coefficient functions at large x. Nuclear Physics, Section B, Proceedings Supplements, 2010, 205-206, 250-255.	0.4	4
107	Phenomenology of $t\bar{t} + X$ production at the LHC. Journal of High Energy Physics, 2022, 2022, .	4.7	4
108	Deep-inelastic structure functions: Reconstruction from Mellin moments. Nuclear Physics, Section B, Proceedings Supplements, 2000, 89, 137-142.	0.4	3

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109	Symbolic summation and higher orders in perturbation theory. Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, 2006, 559, 285-288.	1.6	3
110	PDF fit in the fixed-flavor-number scheme. Nuclear Physics, Section B, Proceedings Supplements, 2012, 222-224, 41-51.	0.4	3
111	Statistical issues in the parton distribution analysis of the Tevatron jet data. Journal of High Energy Physics, 2014, 2014, 1.	4.7	3
112	Top quark production at the LHC: differential cross section and phenomenological perspectives. , 2013, , .		3
113	Non-singlet coefficient functions for charged-current deep-inelastic scattering to the third order in QCD. , 2016, , .		3
114	NNLO splitting and coefficient functions with time-like kinematics. Nuclear Physics, Section B, Proceedings Supplements, 2006, 160, 51-56.	0.4	2
115	Renormalization of non-singlet quark operator matrix elements for off-forward hard scattering. Nuclear Physics B, 2021, 971, 115536.	2.5	2
116	Soft corrections to inclusive DIS at four loops and beyond. , 2019, , .		2
117	Differential cross sections for top pair production at the LHC. Nuclear and Particle Physics Proceedings, 2016, 273-275, 2177-2180.	0.5	1
118	Heavy meson hadroproduction:open issues. , 2019, , .		1
119	Sudakov resummations at higher orders. Nuclear Physics, Section B, Proceedings Supplements, 2006, 157, 179-186.	0.4	0
120	Status of perturbative QCD calculations for deep-inelastic scattering and related processes. Nuclear Physics, Section B, Proceedings Supplements, 2012, 222-224, 101-107.	0.4	0
121	Top-quark mass measurements at LHC: a new approach. Journal of Physics: Conference Series, 2013, 452, 012050.	0.4	0
122	Top-quark mass measurements using jet rates at LHC. EPJ Web of Conferences, 2013, 60, 16005.	0.3	0
123	Precise heavy-quark masses. Nuclear and Particle Physics Proceedings, 2015, 261-262, 130-139.	0.5	0
124	Present theoretical uncertainties on charm hadroproduction in QCD and prompt neutrino fluxes. EPJ Web of Conferences, 2016, 116, 08002.	0.3	0
125	Nucleon PDF separation with the collider and fixed-target data. Nuclear and Particle Physics Proceedings, 2016, 273-275, 1961-1966.	0.5	0
126	Calculating Four-Loop Corrections in QCD. Texts and Monographs in Symbolic Computation, 2021, , 321-334.	0.4	0