Konstantin Stepanyantz

List of Publications by Year
in descending order

80 papers	1,415 citations	257450 24 h-index	377865 34 g-index
80 all docs	80 docs citations	80 times ranked	67 citing authors

#	Article	IF	Citations
1	NSVZ scheme with the higher derivative regularization for SQED. Nuclear Physics B, 2013, 875, 459-482.	2.5	69
2	Three-Loop Â-Function of N=1 Supersymmetric Electrodynamics Regularized by Higher Derivatives. Theoretical and Mathematical Physics(Russian Federation), 2004, 140, 1264-1282.	0.9	63
3	Derivation of the exact NSVZ Î²-function in SQED, regularized by higher derivatives, by direct summation of Feynman diagrams. Nuclear Physics B, 2011, 852, 71-107.	2.5	60
4	The NSVZ Î²-function in supersymmetric theories with different regularizations and renormalization prescriptions. Theoretical and Mathematical Physics(Russian Federation), 2014, 181, 1531-1540.	0.9	59
5	Scheme-independent consequence of the NSVZ relation for ‹mml:math altimg="si1.gif" overflow="scroll" xmlns:xocs="http://www.elsevier.com/xml/xocs/dtd" xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.elsevier.com/xml/ja/dtd" xmlns:ja="http://www.elsevier.com/xml/ja/dtd" xmlns:mml="http://www.w3.org/1998/Math/MathML"	4.1	58
6	Calculation of two-loop Î²-function for general ‹mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.gif" overflow="scroll">‹mml:mi›N‹/mml:mi›‹mml:mo›=‹/mml:mo›‹mml:mn›1‹/mml:mn›‹/mml:math› supersymmetric Yangâ€"Mills theory with the higher covariant derivative regularization. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2010, 686, 293-297.	4.1	47
7	Non-renormalization of theVcÂ¯c-vertices inN=1supersymmetric theories. Nuclear Physics B, 2016, 909, 316-335.	2.5	42
8	The NSVZ Î²-function and the Schwinger-Dyson equations for N $$ mathcal{N} $$ = 1 SQED with N f flavors, regularized by higher derivatives. Journal of High Energy Physics, 2014, 2014, 1.	4.7	37
9	ManifestlyN=2supersymmetric regularization forN=2supersymmetric field theories. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2015, 751, 434-441.	4.1	37
10	The higher derivative regularization and quantum corrections in ‹mml:math altimg="si1.gif" overflow="scroll" xmlns:xocs="http://www.elsevier.com/xml/xocs/dtd" xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns="http://www.elsevier.com/xml/ja/dtd" xmlns:ja="http://www.elsevier.com/xml/ja/dtd" xmlns:mml="http://www.w3.org/1998/Math/MathML" xmlns:tb="http://www.elsevier.com/xml/common/table/dtd" xmlns:sb="http://www.elsevier.com/xml/co	2.5	34
11	One-loop divergences in non-Abelian supersymmetric theories regularized by BRST-invariant version of the higher derivative regularization. Journal of High Energy Physics, 2016, 2016, 1.	4.7	34
12	Three-loop NSVZ relation for terms quartic in the Yukawa couplings with the higher covariant derivative regularization. Nuclear Physics B, 2017, 920, 345-367.	2.5	34
13	The NSVZ scheme for‹mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.gif" overflow="scroll">‹mml:mi mathvariant="script">N‹/mml:mi›‹mml:mo›=‹/mml:mo›‹mml:mn›1‹/mml:mn›‹/mml:math›SQED with N f flavors, regularized by the dimensional reduction, in the three-loop approximation. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2017, 764, 222-227.	4.1	31
14	One-loop counterterms for higher derivative regularized Lagrangians. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 1997, 414, 117-122.	4.1	29
15	Relation between two-point Greenâ€™s functions of $$mathcal{N} = 1$$ SQED with N f flavors, regularized by higher derivatives, in the three-loop approximation. Journal of Experimental and Theoretical Physics, 2015, 120, 618-631.	0.9	28
16	Structure of three-loop contributions to the Î²-function of N = 1 supersymmetric QED with N f flavors regularized by the dimensional reduction. JETP Letters, 2016, 103, 77-81.	1.4	27
17	One-loop polarization operator of the quantum gauge superfield for ? = 1 SYM regularized by higher derivatives. Modern Physics Letters A, 2017, 32, 1750194.	1.2	26
18	New form of the exact NSVZ Î²-function: the three-loop verification for terms containing Yukawa couplings. Journal of High Energy Physics, 2018, 2018, 1.	4.7	26

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19	Derivation of the exact expression for the <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>D</mml:mi></mml:mrow></mml:math>function in<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi mathvariant="script">N</mml:mi><mml:mo>=</mml:mo><mml:mn>1</mml:mn></mml:mrow></mml:math>SQCD. Physical Review D, 2015, 91, .	4.7	25
20	New form of the NSVZ relation at the two-loop level. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2018, 776, 417-423.	4.1	25
21	The Adler D-function for N=1 SQCD regularized by higher covariant derivatives in the three-loop approximation. Nuclear Physics B, 2018, 926, 295-320.	2.5	25
22	A class of the NSVZ renormalization schemes for <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.gif" overflow="scroll"><mml:mi mathvariant="script">N</mml:mi><mml:mo>=</mml:mo><mml:mn>1</mml:mn></mml:math> SQED. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2018, 785, 561-566.	4.1	25
23	Universal Invariant Renormalization for Supersymmetric Theories. Theoretical and Mathematical Physics(Russian Federation), 2003, 135, 673-684.	0.9	24
24	NSVZ-like scheme for the photino mass in softly broken N = 1 SQED regularized by higher derivatives. JETP Letters, 2017, 105, 69-73.	1.4	24
25	Universal Invariant Renormalization for the Supersymmetric Yang–Mills Theory. Theoretical and Mathematical Physics(Russian Federation), 2004, 139, 599-608.	0.9	23
26	Supergraph analysis of the one-loop divergences in 6 D ,<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.gif" overflow="scroll"><mml:mi mathvariant="script">N</mml:mi><mml:mo>=</mml:mo><mml:mo stretchy="false">(</mml:mo><mml:mn>1</mml:mn><mml:mo>,</mml:mo><mml:mn>0</mml:mn><mml:mo>) Tj ETQq0 0 0 rgBT /Overl</mml:mo></mml:math> xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si2.gif" overflow="scroll"><mml:mi math	2.5	23
27	Derivation of the exact NSVZÎ²-function inN= 1 SQED regularized by higher derivatives by summation of Feynman diagrams. Journal of Physics: Conference Series, 2012, 343, 012115.	0.4	22
28	One-loop divergences in the 6D, <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.gif" overflow="scroll"><mml:mi mathvariant="script">N</mml:mi><mml:mo>=</mml:mo><mml:mo stretchy="false">(</mml:mo><mml:mn>1</mml:mn><mml:mo>,</mml:mo><mml:mn>0</mml:mn><mml:mo>) Tj ETQq0 0 0 rgBT /Overl</mml:mo></mml:math> Elementary Particle and High-Energy Physics, 2016, 763, 375-381.	4.1	22
29	The Î²-function of $$ \mathcal{N} $$ = 1 supersymmetric gauge theories regularized by higher covariant derivatives as an integral of double total derivatives. Journal of High Energy Physics, 2019, 2019, 1.	4.7	22
30	The all-loop perturbative derivation of the NSVZ $$\eta$$-function and the NSVZ scheme in the non-Abelian case by summing singular contributions. European Physical Journal C, 2020, 80, 1.	3.9	22
31	One-loop divergences in 6D, N $$ \mathcal{N} $$ = (1, 0) SYM theory. Journal of High Energy Physics, 2017, 2017, 1.	4.7	21
32	On-shell renormalization scheme for $${{\mathcal {N}}}=1$$ SQED and the NSVZ relation. European Physical Journal C, 2019, 79, 1.	3.9	20
33	Title is missing!. Theoretical and Mathematical Physics(Russian Federation), 2003, 134, 377-391.	0.9	19
34	Investigating the anomaly puzzle in N=1 supersymmetric electrodynamics. Theoretical and Mathematical Physics(Russian Federation), 2005, 142, 29-47.	0.9	19
35	Exact renormalization of the photino mass in softly broken N $$ \mathcal{N} $$ = 1 SQED with N f flavors regularized by higher derivatives. Journal of High Energy Physics, 2017, 2017, 1.	4.7	19
36	Two-loop renormalization of the Faddeev-Popov ghosts in $$ \mathcal{N}=1 $$ supersymmetric gauge theories regularized by higher derivatives. Journal of High Energy Physics, 2018, 2018, 1.	4.7	19

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37	Detailed analysis of the dependence of 1-loop counter-terms on gauge and parametrization in Einstein gravity with a cosmological constant. Classical and Quantum Gravity, 1998, 15, 3777-3794.	4.0	17
38	Higher covariant derivative regularization for calculations in supersymmetric theories. Proceedings of the Steklov Institute of Mathematics, 2011, 272, 256-265.	0.3	17
39	Two-loop renormalization of the matter superfields and finiteness of $\mathcal{N} = 1$ supersymmetric gauge theories regularized by higher derivatives. Journal of High Energy Physics, 2020, 2020, 1.	4.7	16
40	The NSVZ β-function for theories regularized by higher covariant derivatives: the all-loop sum of matter and ghost singularities. Journal of High Energy Physics, 2020, 2020, 1.	4.7	16
41	Three-loop contribution of the Faddeev–Popov ghosts to the η-function of $\mathcal{N}=1$ supersymmetric gauge theories and the NSVZ relation. European Physical Journal C, 2019, 79, 1.	3.9	15
42	Summation of diagrams in N=1 supersymmetric electrodynamics regularized by higher derivatives. Theoretical and Mathematical Physics(Russian Federation), 2006, 146, 321-334.	0.9	14
43	The three-loop Adler D-function for $\mathcal{N}=1$ SQCD regularized by dimensional reduction. Journal of High Energy Physics, 2019, 2019, 1.	4.7	13
44	The NSVZ relations for $\mathcal{N} = 1$ supersymmetric theories with multiple gauge couplings. Journal of High Energy Physics, 2021, 2021, 1.	4.7	13
45	Multiloop calculations in supersymmetric theories with the higher covariant derivative regularization. Journal of Physics: Conference Series, 2012, 368, 012052.	0.4	12
46	On the two-loop divergences of the 2-point hypermultiplet supergraphs for 6D, N=(1,1) SYM theory. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2018, 778, 252-255.	4.1	12
47	Three-loop verification of a new algorithm for the calculation of a β-function in supersymmetric theories regularized by higher derivatives for the case of N=1 SQED. Nuclear Physics B, 2020, 956, 115020.	2.5	12
48	Four-loop verification of an algorithm for summing Feynman diagrams in the N=1 supersymmetric electrodynamics. Theoretical and Mathematical Physics(Russian Federation), 2006, 147, 687-697.	0.9	11
49	Projective invariance and one-loop effective action in affine metric gravity interacting with a scalar field. Classical and Quantum Gravity, 1994, 11, 2645-2652.	4.0	10
50	Harmonic Superspace Approach to the Effective Action in Six-Dimensional Supersymmetric Gauge Theories. Symmetry, 2019, 11, 68.	2.2	10
51	The Higher Covariant Derivative Regularization as a Tool for Revealing the Structure of Quantum Corrections in Supersymmetric Gauge Theories. Proceedings of the Steklov Institute of Mathematics, 2020, 309, 284-298.	0.3	10
52	Quantum corrections in N = 1 supersymmetric theories with cubic superpotential, regularized by higher covariant derivatives. Physics of Particles and Nuclei Letters, 2011, 8, 321-324.	0.4	9
53	Finiteness of the two-loop matter contribution to the triple gauge-ghost vertices in N=1 supersymmetric gauge theories regularized by higher derivatives. Physical Review D, 2021, 104, .	4.7	9
54	The three-loop anomalous dimension and the four-loop β-function for $\mathcal{N} = 1$ SQED regularized by higher derivatives. Journal of High Energy Physics, 2022, 2022, 1.	4.7	9

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55	Gauge dependence of the one-loop divergences in 6D, $\mathcal{N}=(1,0)$...	2.5	8
56	Finiteness of the triple gauge-ghost vertices in $\mathcal{N}=1$ supersymmetric gauge theories: the two-loop verification. European Physical Journal C, 2022, 82, 1.	3.9	7
57	Exact η-functions for $\mathcal{N}=1$ supersymmetric theories finite in the lowest loops. European Physical Journal C, 2021, 81, 1.	3.9	6
58	ONE-LOOP BACKGROUND CALCULATIONS IN THE GENERAL FIELD THEORY. , 1996, , 441-469.		5
59	On gauge dependence of the one-loop divergences in 6D, N=(1,0) and N=(1,1) SYM theories. Physics Letters, Section B: Nuclear, Elementary Particle and High-Energy Physics, 2019, 798, 134957.	4.1	5
60	One-loop effective action for an arbitrary theory. Theoretical and Mathematical Physics(Russian)	0.9	4
61	Regularization by higher derivatives and quantum correction for N = 1 supersymmetric theories. Russian Physics Journal, 2008, 51, 444-479.	0.4	3
62	Factorization of Integrals Defining the β-Function into Integrals of Total Derivatives in N=1 SQED, Regularized by Higher Derivatives. International Journal of Theoretical Physics, 2012, 51, 276-291.	1.2	3
63	On the two-loop divergences in 6D, $\mathcal{N}=(1,1)$...	1.1	3
64	Supergraph calculation of one-loop divergences in higher-derivative 6D SYM theory. Journal of High Energy Physics, 2020, 2020, 1.	4.7	3
65	The β-function of supersymmetric theories from vacuum supergraphs: A three-loop example. Modern Physics Letters A, 2022, 37, .	1.2	2
66	Quantum properties of affine-metric gravity with the cosmological term. Classical and Quantum Gravity, 2018, 35, 085006.	4.0	1
67	A new relation restricting the Green functions of N = 1 supersymmetric electrodynamics. Moscow University Physics Bulletin (English Translation of Vestnik Moskovskogo Universiteta, Fizika), 2009, 64, 250-254.	0.4	0
68	Some aspects of N= 1 SYM renormalization. EPJ Web of Conferences, 2016, 125, 05014.	0.3	0
69	Equation for one-loop divergences in two dimensions and its application to higher-spin fields. Theoretical and Mathematical Physics(Russian Federation), 2016, 187, 888-898.	0.9	0
70	RENORMALIZATION OF THE COUPLING CONSTANT AND THE HD REGULARIZATION IN SUPERSYMMETRIC THEORIES. , 2017, , 491-494.		0
71	Quantum properties of supersymmetric theories regularized by higher covariant derivatives. Journal of Physics: Conference Series, 2018, 965, 012039.	0.4	0
72	NSVZ Relation in Supersymmetric Theories Regularized by Higher Derivatives. Physics of Particles and Nuclei, 2018, 49, 908-910.	0.7	0

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73	Exact Results in Explicit Three-Loop Calculations Using Higher Derivatives for $\mathcal{N} = 1$ SQCD. Physics of Particles and Nuclei, 2018, 49, 911-913.	0.7	0
74	Supersymmetry, quantum corrections, and the higher derivative regularization. EPJ Web of Conferences, 2018, 191, 06002.	0.3	0
75	The NSVZ relation and the NSVZ scheme for N = 1 non-Abelian supersymmetric theories, regularized by higher covariant derivatives. Journal of Physics: Conference Series, 2019, 1416, 012037.	0.4	0
76	NSVZ Relation and NSVZ Scheme in $\mathcal{N} = 1$ Non-Abelian Supersymmetric Gauge Theories. Physics of Particles and Nuclei, 2020, 51, 599-603.	0.7	0
77	NSVZ WITH HIGHER DERIVATIVES. , 2021, , .		0
78	THE THREE-LOOP ADLER D-FUNCTION FOR N=1 SQCD WITH VARIOUS RENORMALIZATION PRESCRIPTIONS. , 2021, , .		0
79	TWO-LOOP ANOMALOUS DIMENSION OF THE FADDEEV-POPOV GHOSTS IN N=1 SUPERSYMMETRIC THEORIES. , 2021, , .		0
80	REVEALING STRUCTURE OF QUANTUM CORRECTIONS IN N = 1 SUPERSYMMETRIC THEORIES USING THE SCHWINGER–DYSON EQUATIONS. , 2010, , .		0