Steven Duplij's selected publications 1980-2011

Books:

1. S. Duplij, W. Siegel, J. Bagger, eds, *Concise Encyclopedia of Supersymmetry and noncommutative structures in mathematics and physics*, **Springer Science**, Berlin-Heidelberg-New York-Tokyo, April 2005.
2. S.A. Duplij, *Semisupermanifolds and semigroups.* - **Krok**, Kharkov, 2000. - 220 c.
3. S. Duplij, and V. Zima, eds, *Supersymmetric Structures in Mathematics and Physics*. - **UkrNTI**, Kiev, 2000. - 262 c.
4. S. Duplij, and J. Wess, eds, *Noncommutative Structures in Mathematics and Physics*. - **Kluwer Academic Publishers**, Dordrecht-Boston-London, 2001. - 493 p.

Articles in journals:

5. S. Duplij, *A new Hamiltonian formalism for singular Lagrangian theories,* **Journal of Kharkov National University**, ser. Nuclei, Particles and Fields. - 2011. - V. **969**.- № 3(51).- P. 34–39.
6. S. A. Duplij , G. Ch. Kurinnoj, *Representations, quivers and their supersymmetric generalizations,* **Journal of Kharkov National University**, ser. Nuclei, Particles and Fields. - 2011. - V. **969**.- № 3(51).- P. 81–93.
7. S. Duplij, S. Sinel'shchikov, *Classification of $U_q(sl_2)$-module algebra structures on the quantum plane*, **Journal of Mathematical Physics, Analysis, Geometry**, 2010.-V. **6**.- №4.- P. 21-46, arXiv:0905.1719.
8. S. Duplij, *The Clairaut-type formalism for degenerate Lagrangian theories,* preprint, arXiv: 1002.1565, 2010, 22 pp.
9. S. Duplij, S. Sinel'shchikov, *Quantum enveloping algebras with von Neumann regular Cartan-like generators and the Pierce decomposition*, **Communications in Mathematical Physics**, - 2009. - V. **287**. - № 4. - P. 769-785.
10. S. Duplij, S. Sinel'shchikov, *Quantum universal enveloping algebras with idempotents and the Pierce decomposition*, **Journal of Kharkov National University**, ser. Nuclei, Particles and Fields. - 2009. - V. **845**.- № 1(41).- P. 3–15.
11. S. A. Duplij, G. A. Goldin, V. M. Shtelen, Generalizations of nonlinear and supersymmetric classical electrodynamics, **Journal of Physics A: Math. and Gen.** – 2008. – V.41.- P. 304007.
12. S. A. Duplij, G. A. Goldin, V. M. Shtelen, Nonlinear supersymmetric classical electrodynamics, **Journal of Kharkov National University**, ser. Nuclei, Particles and Fields. - 2007. - V. **781**.- № 3(35).- P. 37–47.
13. A. Borowiec, W. Dudek, S. Duplij, *Bi-element representations of ternary groups*, **Communications in Algebra** - 2006 - V. **34** (5).-P.1651-1670.
14. S. A. Duplij, O. I. Kotulska, and A. S. Sadovnikov, *Quantum Yang-Baxter equation and constant R-matrix over Grassmann algebra*, **J. Zhejiang Univ. Science**. - 2005. - V.**6A** (10) 1065-1079.
15. S. A. Duplij and A. T. Kotvytskiy, **Coincidence limit and generalized interaction term structure in multigravity**, Journal of Kharkov National University, ser. Nuclei, Particles and Fields. - 2007. - V. **784**, №4(36), p. 67–72.
16. S.A. Duplij, D.V. Soroka, V.A. Soroka, *A special fermionic generalization of lineal gravity*, **J. Zhejiang Univ. Science**. - 2006. - V. **7A** (4) 629-632.
17. S.A.Duplij, I.I.Shapoval, **Quantum computations: fundamentals and algorithms**, Problems Of Atomic Science And Technology (PAST).-2007.-No.3(1).-p.230-235.
18. S. A. Duplij, I. I. Shapoval, *Topological Methods In Quantum Computations*, **Journal of Kharkov National University**, ser. "Nuclei, particles and fields". - 2007. - V. 781. - N 3(35). - S. 3–31.

19. S. Duplij, O. Kotulska, A. Sadovnikov, *Constant solutions of quantum Yang-Baxter equation over Grassmann algebra,* **Journal of Kharkov National University**, ser. Nuclei, Particles and Fields. - 2005. - V. 657. - N 1(26). - P. 23–34.

20. S. A. Duplij, I. I. Shapoval, *Topological methods in quantum computations*, **Journal of Kharkov National University**, ser. "Nuclei, particles and fields". - 2007. - V. 781. - N 3(35). - P. 3–31.

21. S. Duplij, V. Kalashnikov, E. Maslov, *Quantum information, qubits and quantum algorithms.* **Journal of Kharkov National University**, ser. Nuclei, Particles and Fields. - 2005. - V. 657. - N 1(26). - P. 103–108.

22. D. Duplij and S. Duplij, *DNA sequence representation by trianders and determinative degree of nucleotides*, **J. Zhejiang Univ. Science 6B(8)** (2005) 743-755.

23. S. A. Duplij and A. T. Kotvytskiy, *Lagrangians in nonlinear multigravity models*, **Journal of Kharkov National University**, ser. Nuclei, Particles and Fields. - 2004. - V. **642**, 3–7.

24. S. A. Duplij, I. I. Shapoval, *Decays of B meson, supersymmetry and polarization*, **Journal of Kharkov National University**, ser. "Nuclei, particles and fields". - 2004. - V. 642. - N 3(25). - S. 16–21.

25. S. A. Duplij, A.T. Kotvytskiy, *Lagrangians in nonlinear multigravity models,* In: "**Journal of Kharkov National University**, ser. "Nuclei, particles and fields". - 2004. - V. 642. - № 3(25). - С. 3–7.

26. S. Duplij, W. Marcinek, *Toposes and categories in quantum theory and gravity*, **Journal of Kharkov National University**, ser. Nuclei, Particles and Fields. - 2002. - V. 579. - N 4(20). - P. 17–31.

27. S. Duplij, W. Marcinek, *Braid semistatistics and doubly regular R-matrix,* **Journal of Kharkov National University**, ser. "Nuclei, Particles and Fields". - 2003. - V. 601. - N 2(22). - S. 75–80.

28. S. Duplij, A. Sadovnikov, *Regular supermatrix solutions of quantum Yang-Baxter equation,* **Journal of Kharkov National University**, ser. Nuclei, Particles and Fields. - 2002. - V. 569. - N 3(19). - P. 15–22.

29. S. Duplij, W. Marcinek, *Regular obstructed categories and topological quantum field theory*. **Journal of Mathematical Physics** - 2002. - V. **43**. - №6. - P. 3329-3341.

30. S. Duplij, *On supermatrix operator semigroups.* **Quasigroups and Related Systems**. - 2000/2001. - V. **7**. - N 1. - P. 71-98.

31. S. Duplij and M. Chursin, On structure of smooth semisupermanifolds, Kharkov State University Journal (Vestnik KSU), ser. Nuclei, Particles and Fields 481 (2000), 22–26.

32. S. Duplij, F. Li, *Regular solutions of quantum Yang-Baxter equation from weak Hopf algebras*. **Czech. Journal of Physics** - 2001. - V. 51 . N 12. - P. 1306-1311.

33. D. Duplij and S. Duplij, *Symmetry analysis of genetic code and determinative degree*, Biophysical Bull. Kharkov Univ. **488** (2000), 60–70.

34. D. Duplij, S. Duplij, and N. Chashchin, *Symmetric properties of genetic code*, Biopolymers and Cell **16** (2000), 449–454.

35. D. Duplij and S. Duplij, *Determinative degree and nucleotide content of DNA strands*, Biophysical Bull. Kharkov Univ. **525** (2001), 86–92.

36. S. Duplij, *On semi-supermanifolds*, **Pure Mathematics and Applications** - 1998. - V. **9**. - N 3-4. - P. 283—310.

37. V. P. Akulov, S. Duplij, V. V. Chitov, Differential calculus for q-deformed twistors, **Theoretical and Mathematical Physics** - 1998. - V. **115**. - N 2. - P. 177-184.

38. S. Duplij, Superconformal-like transformations and nonlinear realizations, **Southwest Journal of Pure and Applied Mathematics** - 1998. - V. **2**. - P. 85-112.

39. S. Duplij, *Some abstract properties of semigroups appearing in superconformal theories*, **Semigroup Forum**. - 1997. - V. **54**. - N 2. - P. 253-260.

40. S. Duplij, *Noninvertible N=1 superanalog of complex structure*, **Journal of Mathematical Physics** - 1997. - V. **38**. - N 2. - P. 1035-1040.

41. S. Duplij, *Supermatrix representations of semigroup bands*, **Pure Mathematics and Applications** - 1996. - V. **7**. - N 3-4. - P. 235-261.

42. S. Duplij, *Ideal structure of superconformal semigroups*, **Theoretical and Mathematical Physics** - 1996. - V. **106**. - N 3. - P. 355-374.

43. S. Duplij, *On an alternative supermatrix reduction*, **Letters in Mathematical Physics** - 1996. - V. **37**. - N 3. - P. 385-396.

44. S. Duplij, *Towards gauge principle for semigroups*, **Acta Physica Polonica** - 1992. - V. **B23**. - N 7. - P. 733-743.

45. S. Duplij, *On semigroup nature of superconformal symmetry*, **Journal of Mathematical Physics** - 1991. - V. **32**. - N 11. - P. 2959-2965.

46. S. Duplij, *On N=4 super Riemann surfaces and superconformal semigroup*, **Journal of Physics** (Math. and General) - 1991. - V. **A24**. - N 13. - P. 3167-3179.

47. S. Duplij, *On types of N=2 superconformal transformations*, **Theoretical and Mathematical Physics** - 1991. - V. **86**. - N 2. - P. 138-143.

48. S. Duplij, *Semigroup of N=1,2 superconformal transformations and conformal superfields*, **Acta Physica Polonica** - 1990. - V. **B21**. - N 10. - P. 783-811.

49. S. Duplij, *On N=1 superconformal invariance*, **Sov. J. Nucl. Phys.**. - 1990. - V. **52**. - N 4(10). - S. 1169-1175.

50. S. Duplij, *Search for superpartners at high energy accelerators. part I.*, Probl. Nucl. Phys. Cosm. Rays **24** (1985), 82–96.

51. S. Duplij, *Search for superpartners at high energy accelerators. part II.*, Probl. Nucl. Phys. Cosm. Rays **26** (1986), 1–22.

52. S. Duplij, *Nilpotent mechanics and supersymmetry*, Probl. Nucl. Phys. Cosm. Rays **30** (1988), 41–49.

53. S. Duplij, On $N=2$ superconformal transformations, Probl. Nucl. Phys. Cosm. Rays **33** (1990), 22–38.

1980-1989

54. S. Duplij, *Calculation of differential and total cross-sections of γp -interaction*, Russian Phys. J. (Historical Archive) **23** (1980), 827 – 831 (Izvestiya Vyzov. Fizika, **23** N9 (1980) 83–88).

55. S. Duplij, *P-invariance breaking in pion photo- and electroproduction on pions*, Probl. Nucl. Phys. Cosm. Rays **13** (1980), 57–65.

56. S. A. Duplij and M. P. Rekalo, *On a possibility of gluon spin determination in experiments with linear-polarized photons*, Ukrainian Phys. J. **25** (1980), 1569–1570.

57. S. Duplij, *Heavy quark pair formation in hadron-hadron collisions*, Russian Phys. J. (Historical Archive) **24** (1981), 805 – 809 (Izvestiya Vyzov. Fizika, **24** N9 (1981) 30–34).

58. . Duplij, *Leptoproduction of heavy quark pairs on scalar gluons*, Probl. Nucl. Phys. Cosm. Rays **14** (1981), 47–55.

59. S. A. Duplij and M. P. Rekalo, *Leptoproduction of heavy quarks with the anomalous chromomagnetic moment*, Acta Phys. Pol. **B12** (1981), 549–561.

60. S. Duplij, *Hadroproduction of heavy quark pairs with the anomalous chromomagnetic moment*, Probl. Nucl. Phys. Cosm. Rays **15** (1981), 31–37.

61. S. A. Duplij and M. P. Rekalo, *Three-jets processes in e^+e^- collisions and chromomagnetic moment of quarks*, Ukrainian Phys. J. **26** (1981), 1216–1218 (Ukrainian Fiz. Zh. **26** (1981) 1569–1570).

62. S. A. Duplij and M. P. Rekalo, *Complete analysis of polarization in two-particle QCD processes*, Bogolyubov Inst. Theor. Phys., ITP-122E, Kiev, 1982, 12 p. (KEK scan http://ccdb3fs.kek.jp/cgi-bin/img_index?198212078).

63. S. Duplij, *Gluon bound state production in hadronic collisions*, Probl. Nucl. Phys. Cosm. Rays **16** (1982), 90–92.

64. S. A. Duplij and M. P. Rekalo, *Invariant integration in $2 \to 3$ QCD processes*, Sov. J. Nucl. Phys. **36** (1982), 1319–1327.

65. S. A. Duplij and M. P. Rekalo, *The calculation of $2 \to 3$ QCD processes characteristics by invariant integration method*, Inst. Theor. Phys., ITF-82-20R, Kiev, 1982, 23 p. (KEK scan http://ccdb3fs.kek.jp/cgi-bin/img_index?198205058).

66. O. M. Getmanets, S. A. Duplij, N. M. Pelykhaty, V. M. Puzh, and Z. S. Sagan, *Calculation of recoil atom implantation into silicon substrate*, Probl. Nucl. Phys. Cosm. Rays **19** (1983), 80–84.

67. S. Duplij, *Bound state production in QCD*, in Creative Development of Young Physicists, Kharkov State Univ., Kharkov, 1982, p. 10.

68. N. I. Gavrilova and S. A. Duplij, *The complex representation for nonstationary random processes*, Radiophysics (Deponent VINITI) **6130-83** (1983), 18 p.

69. S. Duplij, *Photoproduction on polarized quarks in QCD*, Probl. Nucl. Phys. Cosm. Rays **20** (1984), 23–29.

70. O. M. Getmanetz, S. A. Duplij, I. I. Zalyubovsky, N. M. Pelykhaty, and M. A. Rukavitsyn, *Analytic method applications for backscattering spectra analysis*, Probl. Nucl. Phys. Cosm. Rays **22** (1984), 71–80.

71. S. Duplij, *Gluonium production in QCD processes*, Probl. Nucl. Phys. Cosm. Rays **23** (1985), 37–42.

72. S. A. Duplij, N. M. Pelykhaty, and Z. S. Sagan, *On the analytical connection between energy and depth scales in ion backscattering*, Russian Phys. J. (Izvestiya Vyzov. Fizika) **28** (1985), 112–114.

73. N. I. Gavrilova, S. A. Duplij, and N. A. Sivozalizov, *On the calculation of noise spectral characteristics for nonlinear functional units of radiosystems*, Deponent VINITI (Moscow) **9091-B88** (1988), 18 p.

74. S. A. Duplij, N. M. Pelykhaty, and S. A. Steshenko, *Recoil implantation of nickel surface layer atoms into silicon*, Russian Phys. J. (Historical Archive) **32** (1989), 533 – 536 (Izvestiya Vyzov. Fizika, **32** N7 (1989) 36–40).

75. O. M. Getmanetz, S. A. Duplij, I. I. Zalyubovsky, and N. M. Pelykhaty, *Formation of recoil atom implantation profiles in thin surface layers*, Surface **2** (1989), 60–65.

76. S. A. Duplij, N. M. Pelykhaty, and S. A. Steshenko, *On recoil implantation of thin nickel film atoms into silicon*, in Microanalysis on Ion Beams, State Univ., Sumy, 1990, p. 72.

77. L. V. Verozub, S. A. Duplij, and S. P. Kotelnikov, *The method of measuring the gravitational geopotential second derivatives on artificial earth satellite*, in Metrology in Gravimetry, State Univ., Kharkov, 1991, p. 25.

78. S. A. Duplij, N. M. Pelykhaty, and S. A. Steshenko, *To the theory of recoil atom implantation*, Surface **3** (1992), 12–17.

79. S. A. Duplij and Y. G. Mashkarov, *Helicity formalism in description of many-nucleon transfer reactions*, in Nuclear Spectroscopy and Structure of Nuclei, JINR, Dubna, 1993, p. 276.

Articles written by S. Duplij

for «Concise Encyclopedia Of Supersymmetry And Noncommutative Structures In Mathematics And Physics» (Springer Science 2005)

1. • A-Field
2. • Alloff-Wallach Space
3. • Azumaya Algebra
4. • B-Field
5. • Berenstein-Maldacena-Nastase Operator
6. • BFSS Model
7. • Bigravity
8. • Borcherds Superalgebra
9. • BPS Preon
10. • Braided Supersymmetry
11. • Coderivation
12. • Colored Hopf Superalgebra
13. • Conformal Supergravity
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15. • Coquasitriangular Structure
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35. • Gromov-Hausdorff Limit
36. • Gromov-Witten Class
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51. • Manifold, of exceptional holonomy
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53. • Manin Triple
54. • Melvin Space
55. • Murray-Von Neumann Equivalence
56. • Nambu-Goto Action
57. • Neumann Coefficient
58. • Neveu-Schwarz-Ramond String
59. • Nicolai Mapping
60. • Nilpotent Mapping
61. • Noncommutative Determinants
62. • Noninvertible Regularization-• Nonlinear Holomorphic Supersymmetry
63. • Obstructor
64. • Operad
65. • Oxidation
66. • P-Manifold
67. • Parent Action Approach
68. • Penrose Limit
69. • Phantom Field
70. • Polyakov Action
71. • Q-Manifold
72. • QP-Manifold
73. • Quantum Cartan Domain
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75. • Quantum General Linear Supergroup
76. • Quantum Groupoid

77. • Quantum Superspace
78. • Quasi-Hopf Superalgebra
79. • Quasideterminants
80. • Queer Superalgebra
81. • Regular Category
82. • Regular Coalgebra
83. • Regular Functor
84. • Regular Yang-Baxter Equation
85. • Resolution Via Transgression
86. • Reverse Geometric Engineering
87. • Satake Diagram
88. • Schouten Superalgebra
89. • Semisupermanifold
90. • Set-Theoretical Solution
91. • Shadow Multiplet
92. • Simple Supergravity
93. • Skew-Whiffing
94. • Spacelike Brane
95. • Spinors
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97. • Stainless Superbrane
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102. • Super Kadomtsev-Petviashvili Hierarchy
103. • Super Loday Algebra
104. • Super Reshetikhin-Semenov-Tian-Shansky Algebra
105. • Super Schlesinger Equations
106. • Supercomplexification
107. • Superderivation
108. • Superfield, definition
109. • Superfield, N = 1
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112. • Supergroup
113. • Supermanifold
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118. • Supersymmetric PP-Wave
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121. • Supertwistor
122. • Ternary Algebra
123. • Ternary Group
124. • Ternary Hopf Algebra
125. • Toron
126. • Universal Enveloping Superalgebra
127. • Volkov, Dmitrij Vasilievich
128. • Volkov-Akulov Theory
129. • Weak Hopf Algebra