

List of Published Works

1. Growth of the Lie algebra generated by two vector fields on the line (with A.A.Kirillov), Moscow Univ.Math.Bull.,no.4(1983),14-20.
2. Algebras of Intermediate Growth (with A.A.Kirillov and A.I.Molev), Selecta Mathematica Sovietica,vol.9,No.2(1990),137-153.
3. Virasoro algebra and Teichmueller spaces, Functional Anal.Appl., 21:2(1987),156-158.
4. Rational Conformal Field Theory and Invariants of 3-dimensional Manifolds, preprint CPT-88/P.2189.
5. Intersection theory on the moduli spaces of curves, Functional Anal.Appl.,25:2(1991).
6. Intersection theory on the moduli spaces of curves and the matrix Airy function, Comm.Math.Phys.,vol.147(1992),1-23.
7. Vassiliev's knot invariants, Adv.Soviet Math.,vol.16,Part 2(1993),137-150.
8. Formal (non)-commutative symplectic geometry, The Gelfand Mathematical Seminars, 1990-1992, Ed. L.Corwin, I.Gelfand, J.Lepowsky, Birkhauser 1993, 173-187.
9. A_∞ -algebras in Mirror Symmetry, in 1. Mathematische Arbeitstagung (Neue Serie), Bonn 1993, preprint MPI/93-57.
10. Feynman diagrams and low-dimensional topology, First European Congress of Mathematics, 1992, Paris, Volume II, Progress in Mathematics 120, Birkhauser 1994, 97-121.
11. Determinants of elliptic pseudo-differential operators (with S.Vishik), preprints IHES/M/94/30 and MPI/94-30, e-print hep-th/9404046.
12. Geometry of Determinants of Elliptic Operators (with S.Vishik), Functional Analysis on the Eve of the 21-st Century, vol. I, Ed. S.Gindikin, J.Lepowsky, R.Wilson, Progress in Mathematics 131, Birkhauser 1995, 173-197, e-print hep-th/9406140.
13. Gromov-Witten classes, quantum cohomology, and enumerative geometry, (with Yu.Manin), Comm.Math.Phys.,164:3 (1994), 525-562, and Mirror Symmetry II, B.Greene and S.-T.Yau (editors), 1997 AMS and International Press, 607-654, e-print hep-th/9402147.
14. Enumeration of rational curves via torus actions, The Moduli Space of Curves, edited by R.Dijkgraaf, C.Faber and G. Van der Geer, Progress in Mathematics 129, Birkhauser 1995, 335-368, e-print hep-th/9405035.
15. Homological algebra of Mirror Symmetry, Proceedings of the International Congress of Mathematicians, Zuerich 1994, vol. I, Birkhauser 1995, 120-139, e-print alg-geom/9411018.

16. Rigorous results in the topological sigma-model, XIth International Congress of Mathematical Physics, Paris 1994, Editor D. Iagolnitzer, International Press Inc. 1995, 47-59.
17. Mirror symmetry in dimension 3, Seminar N. Bourbaki, Juin 1995, Expose 801.
18. Product formulas for modular forms on $O(2,n)$ (after R.Borcherds), Seminar N. Bourbaki, Novembre 1996, Expose 821, e-print alg-geom/9709006.
19. Quantum Cohomology of a Product (with Yu.Manin and R.Kaufmann) Invent.Math. 124, 313-339 (1996), e-print q-alg/9502009.
20. The Geometry of the Master Equation and Topological Quantum Field Theory (with M.Alexandrov, A.Schwarz and O.Zaboronsky), Intern. Jour. of Modern Phys. A, Vol. 12, No. 7 (1997), 1405-1429, e-print hep-th/9502010.
21. Lyapunov exponents and Hodge structures, in "The mathematical beauty of physics: in memory of Claude Itzykson: Saclay, 5-7 June 1996", edited by J.M.Drouffe and J.B.Zuber, Advanced series in mathematical physics: vol. 24, World Scientific 1997, 318-332, e-print hep-th/9701164.
22. Formality conjecture, in "Deformation Theory and Symplectic Geometry", Proceedings of the Ascona Meeting, June 1996, ed. D.Sternheimer, J.Rawnsley and S.Gutt, Kluwer Academic Publishers 1997, 139-156.
23. Relations between the correlators of the topological sigma-model coupled to gravity (with Yu.Manin), Commun.Math.Phys. 196 (1998) 385-398, e-print alg-geom/9708024.
24. Frobenius Manifolds and Formality of Lie Algebras of Polyvector Fields, (with S.Barannikov), Int. Math. Res. Notices 4 (1998), 201-215, e-print alg-geom/9710032.
25. Statistics of Klein polyhedra and multidimensional continued fractions (with Yu.Suhov), in collection "Pseudoperiodic topology", ed. V.Arnold, M.Kontsevich, A.Zorich Amer. Math.Soc. Transl., Ser.2, vol. 197 (1999), 9-28.
26. Rozansky-Witten classes via formal geometry, Compositio Mathematica, 115 (1999), 115-127, e-print dg-ga/9704009.
27. Operads and Motives in Deformation Quantization, Lett. Math. Phys. 48 (1999), 35-72, e-print math.QA/9904055.
28. Noncommutative smooth spaces (with A.Rosenberg), in "The Gelfand Gelfand Seminars 1996-1999", ed. I.M.Gelfand, V.S.Retakh, Birkhauser 2000, 85-108, e-print math.AG/9812158.

29. Deformations of algebras over operads and Deligne's conjecture (with Y. Soibelman), in "Conference Moshe Flato 1999, Quantization, Deformations, and Symmetries", vol. I, Ed. G. Dito and D. Sternheimer, Kluwer Academic Publishers, 2000, 255-307, e-print math.QA/0001151.
30. The $1+1/2$ logarithm, Appendix to On Poly(ana)logs I by Philippe Elbaz-Vincent, Herbert Gangl, Comp. Mth. 130 (2002), 211-214, e-print math.KT/0008089.
31. Periods (with D. Zagier), in "Mathematics Unlimited, Year 2001 and Beyond", Eds. B. Engquist and W. Schmidt, Springer, 2001.
32. Homological mirror symmetry and torus fibrations (with Y. Soibelman), in "Symplectic Geometry and Mirror Symmetry", Proceedings of 4th KIAS conference, Eds. K. Fukaya, Y.-G. Oh, K. Ono and G. Tian, World Scientific, 2001, e-print math.SG/0011041.
33. Deformation quantization of algebraic varieties, Lett. Math. Physics. 56 (2001), 271-294, e-print math.AG/0106006.
34. Deformation quantization of Poisson manifolds, Lett. Math. Phys. 66 (2003), 157-216, e-print q-alg/9709040.
35. Connected components of the moduli spaces of Abelian differentials with prescribed singularities (with A. Zorich), Invent. Math. 153 (2003), 631-678, e-print math.GT/0201292.
36. CFT, SLE and phase boundaries, talk on Arbeitstagung 2003, preprint MPI 2003 - 60 - a.
37. Affine structures and non-archimedean analytic spaces (with Y. Soibelman), in "The Unity of Mathematics" in honor of the 90-th anniversary of I.M. Gelfand, Progress in Mathematics Volume 244, Birkhauser, 2005, 312-385, e-print math.AG/0406564.
38. Symmetries of WDVV equations (with Y. Chen and A. Schwarz), Nucl. Phys. B730 (2005), 352-363, e-print hep-th/0508221.
39. The Jacobian Conjecture is stably equivalent to the Dixmier Conjecture (with A. Belov-Kanel), Moscow Mathematical Journal, 7 (2007), no.2, 209-218, e-print math.RA/0512171.
40. Automorphisms of the Weyl algebra (with A. Belov-Kanel), Lett. Math. Phys., vol.74(2005), No. 2, 181-199, e-print math.RA/0512169.
41. Hochschild and Harrison cohomology of complete intersections, Appendix to Quantization on Curves by Chris Fronsdal, Lett. Math. Physics. 79(2007), no.2, 124-129, e-print math-ph/0507021.
42. Integrality of instanton numbers and p-adic B-model (with A. Schwarz and V. Vologodsky), Phys. Lett. B637 (2006), 97-101, e-print hep-th/0603106.

43. Notes on A-infinity algebras, A-infinity categories and non-commutative geometry. I (with Y. Soibelman), in "Homological Mirror Symmetry: New Developments and Perspectives" (A.Kapustin et al. (Eds.)), Lect. Notes in Physics 757 (Springer, Berlin Heidelberg 2009) 153-219, e-print math.RA/0606241.
44. On Malliavin measures, SLE and CFT (with Yu. Suhov), Proceedings of the Steklov Institute of Mathematics, vol. 258 (2007), pages 100-146, e-print math-ph/0609056.
45. Notes on motives in finite characteristic, "Algebras, Arithmetic and Geometry (In Honor of Yu.Manin)", ed. Yu. Zarkhin and Yu. Tschinkel, vol.II, Progress in Mathematics 270, Birkhauser (2009), pp.213-247, e-print math/0702206.
46. Motivic Donaldson-Thomas invariants, talk on Arbeitstagung 2007, preprint MPIM2007-75f.
47. XI Solomon Lefschetz Memorial Lecture Series: Hodge structures in non-commutative geometry.(Notes by Ernesto Lupercio), Contemp. Math. vol. 462 (2008), 1-21, e-print 0801.4760.
48. Hodge theoretic aspects of mirror symmetry (with L. Katzarkov and T. Pantev), Proceedings of Symposia in Pure Mathematics vol. 78 (2008), "From Hodge theory to integrability and TQFT: tt*-geometry", eds. Ron Y. Donagi and Katrin Wendland, 87-174, e-print 0806.0107.
49. Stability structures, motivic Donaldson-Thomas invariants and cluster transformations (with Y. Soibelman), e-print 0811.2435.
50. Holonomic D-modules and positive characteristic, Japan. J. Math. 4, 1-25 (2009), e-print 1010.2908.
51. Generalized Tian-Todorov theorems, talk on Kinosaki conference 2008.
52. Symplectic geometry of homological algebra, talk on Arbeitstagung 2009, preprint MPIM2009-40a.
53. Motivic Donaldson-Thomas invariants: summary of results (with Y. Soibelman), Contemp. Math. vol. 527 (2010), 55-89, e-print 0910.4315.
54. Cohomological Hall algebra, exponential Hodge structures and motivic Donaldson-Thomas invariants (with Y. Soibelman), Communications in Number Theory and Physics, vol. 5, no. 2 (2011), 231-352, e-print 1006.2706.
55. Lyapunov spectrum of square-tiled cyclic covers (with A. Eskin and A. Zorich), Journal of Modern Dynamics, volume 5, no.2 (2011), 319-353, e-print 1007.5330.

56. Noncommutative identities, talk on Arbeitstagung 2011, e-print 1109.2469.
57. Sum of Lyapunov exponents of the Hodge bundle with respect to the Teichmüller geodesic flow (with A.Eskin and A.Zorich), Publ. IHES, 120(2014), 207-333, e-print 1112.5872.
58. Wall-crossing structures in Donaldson-Thomas invariants, integrable systems and Mirror Symmetry (with Y.Soibelman), in "Homological Mirror Symmetry and Tropical Geometry" (Lecture Notes of the Unione Matematica Italiana, 15), Springer 2014, pages 197-308, e-print 1303.3252.
59. Dynamical systems and categories, (with G.Dimitrov, F.Haiden and L.Katzarkov), in "The influence of Solomon Lefschetz in Geometry and Topology, 50 Years of Mathematics at CINESTAV", eds. L.Katzarkov, E.Lupercio, F.Turrubiates, Contemp. Math. volume 621 (2014), 133-170, e-print 1307.8418.
60. Algebra of the infrared and secondary polytopes (with M.Kapranov and Y.Soibelman), Adv. in Math.300 (2016) 616-761, e-print 1408.2673.
61. Bogomolov-Tian-Todorov theorems for Landau-Ginzburg models (with L.Katzarkov and T.Pantev), J. Differential Geom. 105 (2017), no. 1, 55-117, e-print 1409.5996.
62. Stability in Fukaya categories of surfaces (with F.Haiden and L.Katzarkov), e-print 1409.8611, Publications mathématiques de l'IHÉS, 126(1) (2017), 247-318.
63. Canonical bases for cluster algebras (with M.Gross, P.Hacking and S.Keel), Journal of AMS, vol 31, Number 2 (2018), 497-608, e-print 1411.1394.
64. Lower bounds for Lyapunov exponents of flat bundles on curves (with A.Eskin, M.Moeller, A. Zorich), Geometry & Topology 22(2018), 2299-2338, e-print 1609.01170.
65. Airy structures and symplectic geometry of topological recursion (with Y.Soibelman), Proc. Symp. Pure Math., vol. 100 (2018), 433-489, e-print 1701.09137.
66. Semistability, modular lattices, and iterated logarithms (with F.Haiden, L.Katzarkov, P.Pandit), Journal of Differential Geometry 123.1 (2023): 21-66, e-print 1706.01073.
67. Specialization of birational types (with Y.Tschinkel), Invent. Math., Volume 217 (2019), Issue 2, pp 415-432, e-print 1708.05699.
68. Iterated logarithms and gradient flows (with F.Haiden, L.Katzarkov, P.Pandit), e-print 1802.04123.

69. Equivariant birational geometry and modular symbols (with Vasily Pestun, Yuri Tschinkel), *Journal of the European Mathematical Society* 25.1 (2021): 153-202, arXiv:1902.09894.
70. Quantum Minimal Surfaces (with Joakim Arnlind, Jens Hoppe), arXiv:1903.10792.
71. A Generalization of King's Equation via Noncommutative Geometry (with G.Bhattacharya), in "Geometry and Topology, A Collection of Essays Dedicated to Vladimir Turaev", EMS Publishing House, Berlin, 2021, arXiv: 2003.03171.
72. Analyticity and resurgence in wall-crossing formulas (with Y.Soibelman), *Letters in Mathematical Physics* 112.2 (2022): 32, arXiv: 2005.10651.
73. p-Determinants and monodromy of differential operators (with A.Odesskii), *Selecta Mathematica* (2022) 28:5, arXiv: 2009.12159 *Selecta Mathematica* (2022) 28:5.
74. Pre-Calabi-Yau algebras and noncommutative calculus on higher cyclic Hochschild cohomology (with N.Iyudu), arXiv:2011.11888.
75. Multiplication kernels (with A.Odesskii), *Letters in Mathematical Physics* 111.6 (2021): 152, arXiv:2105.04238.
76. Wick rotation and the positivity of energy in quantum field theory (with G.Segal), arXiv:2105.10161, *The Quarterly Journal of Mathematics*, Volume 72, Issue 1-2, June 2021, Pages 673–699.
77. Spectral description of non-commutative local systems on surfaces and non-commutative cluster varieties (with A.Goncharov), arXiv:2108.04168, in *Arithmetic and Algebraic Geometry: A Mathematical Tribute to Yuri Manin*, pp. 109-238, Springer Nature Switzerland, 2024.
78. Pre-Calabi-Yau algebras and topological quantum field theories (with A.Takeda and Y.Vlassopoulos), arXiv:2112.14667, *European Journal of Mathematics* 11, no. 1 (2025): 1-101.
79. Smooth Calabi-Yau structures and the noncommutative Legendre transform (with A.Takeda and Y.Vlassopoulos), arXiv:2301.01567, *Journal of Noncommutative Geometry*, 2025 Feb 24.
80. Burnside rings and volume forms with logarithmic poles (with A.Chambet-Loir and Yu.Tschinkel), arXiv:2301.02899, submitted to the *Journal of EMS*.
81. When the Fourier transform is one loop exact? (with A.Odesskii), *Selecta Mathematica* 30.3 (2024): 35, arXiv:2306.02178.
82. The miracle of integer eigenvalues (with R.Kenyon, O.Ogievetsky, C.Pohoata, W.Sawin, S.Shlosman), *Functional Analysis and Its Applications* 58.2 (2024): 182-194, arXiv:2401.05291.

- 83. Holomorphic Floer theory I: exponential integrals in finite and infinite dimensions (with Y.Soibelman), arXiv:2402.07343.
- 84. Explicit formulas for arithmetic support of differential and difference operators (with A.Odesskii), arXiv:2506.12480.