

# Sergey Yu. Vernov

## Full List of publications

70 publications, including 32 journal papers and 2 chapters in books.

### Journal papers:

1. Vernov S.Yu., Khrustalev O.A., *Approximate double-periodic solutions in (1+1)-dimensional  $\varphi^4$ -theory*, Theor. Math. Phys., **116** (1998) 881–889
2. Khrustalev O.A., Vernov S.Yu., *Construction of doubly periodic solutions via the Poincare-Lindstedt method in the case of massless  $\varphi^4$  theory*, Mathematics and Computers in Simulations **57** (2001) 239–252
3. Vernov S.Yu., *Constructing Solutions for the Generalized Hénon–Heiles System Through the Painlevé Test*, Theor. Math. Phys., **135** (2003) 792–801
4. Khrustalev O.A., Vernov S.Yu., Tchitchikina M.V., *Quantization of Relativistic Invariant Systems in terms of Bogolyubov Group Variables. I: Coordinate and Impulse Operators*, Mosc. Univ. Phys. Bull. 59 (2004) No. **1**, p. 3–6
5. Khrustalev O.A., Vernov S.Yu., Tchitchikina M.V., *Quantization of Relativistic Invariant Systems in terms of Bogolyubov Group Variables. II: Construction of Perturbation Theory*, Mosc. Univ. Phys. Bull. 59 (2004) No. **1**, p. 6–9
6. Aref'eva I.Ya., Koshelev A.S., Vernov S.Yu., *Stringy Dark Energy Model with Cold Dark Matter*, Phys. Lett. B **628** (2005) 1–10.
7. Aref'eva I.Ya., Koshelev A.S., Vernov S.Yu., *Crossing the  $w = -1$  barrier in the D3-brane dark energy model*, Phys. Rev. D **72** (2005) 064017.
8. Vernov S.Yu., Timoshkova E.I., *On two nonintegrable cases of the generalized Henon-Heiles system with an additional nonpolynomial term*, Phys. Atom. Nucl. **68** (2005) 1947–1955
9. Vernov S.Yu., *Construction of Special Solutions for Nonintegrable Systems*, J. Nonlin. Math. Phys. **13** (2006) 50–63
10. Vernov S.Yu., *Proof of the Absence of Elliptic Solutions of the Cubic Complex Ginzburg-Landau Equation*, Theor. Math. Phys. **146** (2006) 131–139.
11. Vernov S.Yu., *Construction of Exact Special Solutions for Nonintegrable Systems due to Formal Laurent and Puiseux series*, Programming and Computer Software, **32**, No. 2 (2006) 77–83.
12. Aref'eva I.Ya., Koshelev A.S., Vernov S.Yu., *Exact Solutions in  $w < -1$  SFT Inspired Cosmological Models*, Bulgarian Journal of Physics, **33**, Suppl. 1a, (2006) 360–367.
13. Aref'eva I.Ya., Koshelev A.S., Vernov S.Yu., *Exactly Solvable SFT Inspired Phantom Model*, Theor. Math. Phys. **148** (2006) 895–909.
14. Aref'eva I.Ya., Joukovskaya L.V., Vernov S.Yu., *Bouncing and accelerating solutions in nonlocal stringy models*, JHEP **0707** (2007) 087.
15. Vernov S.Yu., *Elliptic solutions of the quintic complex one-dimensional Ginzburg-Landau equation*, J. of Physics A: Math. Theor. **40** (2007) 9833–9844
16. Vernov S.Yu., *Construction of Exact Solutions in Two-Fields Models and the Crossing of the Cosmological Constant Barrier*, Theor. Math. Phys. **155** (2008) 544–556.
17. Aref'eva I.Ya., Joukovskaya L.V., Vernov S.Yu., *Dynamics in nonlocal linear models in the Friedmann–Robertson–Walker metric*, J. Phys. A: Math. Theor. **41** (2008) 304003.
18. I.Ya. Aref'eva, N.V. Bulatov, L.V. Joukovskaya, S.Yu. Vernov, *Null energy condition violation and classical stability in the Bianchi I metric*, Phys. Rev. D **80** (2009) 083532, [arXiv:0907.0468]

19. S.Yu. Vernov, *Localization of Non-local Cosmological Models with Quadratic Potentials in the case of Double Roots*, *Class. Quantum Grav.* **27** (2010) 035006, [arXiv:0907.0468]
20. I.Ya. Aref'eva, N.V. Bulatov, S.Yu. Vernov, *Stable Exact Solutions in Cosmological Models with Two Scalar Fields*, *Theor. Math. Phys.* **163** (2010) 788-803, [arXiv:0910.5105]
21. Vernov S.Yu., *Localization of the SFT inspired Nonlocal Linear Models and Exact Solutions*, *Phys. Particl. Nucl. Lett.*, 8 (2011) 310-320, [arXiv:1005.0372]
22. Vernov S.Yu., *Exact Solutions for Nonlocal Nonlinear Field Equations in Cosmology*, *Theor. Math. Phys.* 166 (2011) 392-402, [arXiv:1005.5007]
23. Koshelev A.S., Vernov S.Yu., *Analysis of scalar perturbations in cosmological models with a non-local scalar field*, *Class. Quant. Grav.* 28 (2011) 085019, [arXiv:1009.0746]
24. Koshelev A.S., Vernov S.Yu., *Cosmological perturbations in SFT inspired non-local scalar field models*, *Eur. Phys. J. C* 72 (2012) 2198, [arXiv:0903.5176]
25. Elizalde E., Pozdeeva E.O., Vernov S.Yu., *De Sitter universe in nonlocal gravity*, *Phys. Rev. D* 85 (2012) 044002, [arXiv:1110.5806].
26. Vernov S.Yu., *Nonlocal Gravitational Models and Exact Solutions*, *Phys. Part. Nucl.* 43 (2012) 694-696, [arXiv:1202.1172].
27. Koshelev A.S., Vernov S.Yu., *On bouncing solutions in non-local gravity*, *Phys. Part. Nucl.* 43 (2012) 666-668, [arXiv:1202.1289].
28. Biswas T., Koshelev A.S., Mazumdar A., Vernov S.Yu., *Stable bounce and inflation in non-local higher derivative cosmology*, *J. Cosmol. Astropart. Phys.* **1208** (2012) 024, [arXiv:1206.6374].
29. Elizalde E., Pozdeeva E.O., Vernov S.Yu., *Reconstruction Procedure in Nonlocal Cosmological Models*, *Class. Quantum Grav.* 30 (2013) 035002, [arXiv:1209.5957].
30. Kamenshchik A.Yu., Tronconi A., Venturi G., Vernov S.Yu., *Reconstruction of Scalar Potentials in Modified Gravity Models*, *Phys. Rev. D* 87 (2013) 063503, [arXiv:1211.6272]
31. Elizalde E., Pozdeeva E.O., Vernov S.Yu., Zhang Y.-l., *Cosmological Solutions of a Nonlocal Model with a Perfect Fluid*, *J. Cosmol. Astropart. Phys.* 1307 (2013) 034, [arXiv:1302.4330]
32. Elizalde E., Lopez-Revelles A.J., Odintsov S.D., Vernov S.Yu., *Cosmological models with Yang-Mills fields*, *Phys. Atom. Nucl.* 76 (2013) 996-1003, [arXiv:1201.4302].

## Chapters:

33. Vernov S.Yu., *Construction of Three-parameter Solutions for the Generalized Henon-Heiles system with the help of the Painleve Test*, chapter in the book "Mathematical Physics Frontiers", F. Columbus (Ed.), Nova Science Publishers, New York, 2004, pp. 123–140.
34. Vernov S.Yu., *Gravitational Models with Nonlocal Scalar Fields*, chapter 15 in the book "Classical and Quantum Gravity: Theory, Analysis and Applications", ed. V.R. Frignanni, Nova Science Publisher, New York, 2011, 22pp. ISBN: 978-1-61122-957-8.

## In Proceedings of Conferences:

35. Khrustalev O.A., Vernov S.Yu., *Quantization close to periodic classical solutions ( $\phi^4$  theory)*, the Proceedings of the XI International Workshop on High Energy Physics and Quantum Field Theory (QFTHEP'1996, Saint-Petersburg, Russia, 1996) Moscow, 1997, pp. 353–360.
36. Khrustalev O.A., Vernov S.Yu., *Construction of asymptotic periodic solutions for quasilinear wave equation in the case of massless  $\varphi^4$  theory*, the Proceedings of the XII International Workshop on High Energy Physics and Quantum Field Theory (QFTHEP'1997, Samara, Russia, 1997), Moscow, 1998, pp. 408–414.
37. Khrustalev O.A., Vernov S.Yu., *Approximate Standing Wave Solutions in Massless  $\varphi^4$  Theory*, Proceedings of the International Seminar "Quarks-98" (Suzdal, Russia, 1998), Moscow, 1999, Vol. 2, pp. 158–168.
38. Khrustalev O.A., Vernov S.Yu., Tchitchikina M.V., *Quantization in terms of Bogolyubov Group Variables*, Proceedings of the XXII-th International Workshop on the Fundamental Problems of High Energy Physics and Field Theory (Protvino, Russia, 1999), Protvino, 2000, pp. 260–271.
39. Khrustalev O.A., Vernov S.Yu., Tchitchikina M.V., *Bogolyubov Group Variables for Poincare-invariant Systems*, Proceedings of the XIV-th International Workshop on High Energy Physics and Quantum Field Theory (QFTHEP'1999) (Moscow, Russia, 1999), Moscow, 2000, pp. 653–659.
40. Vernov S.Yu., *The Painleve Analysis and Asymptotic Solutions of the General Henon-Heiles System*, Proceedings of the Int. School-Seminar Actual Problems of Particle Physics, (Gomel, Belorussia, 2001), eds. A. Bogush, J. Fedotova, A. Ilyichev, N. Maksimenko, N. Russakovich, S. Shulga, N. Shumeiko, A. Sissakian, N. Schachkov, S. Timoshin, Dubna, JINR, 2002, V. 2, pp. 98–112.
41. Vernov S.Yu., *Exact and Asymptotic Solutions for the General Henon-Heiles System*, Proceedings of the International Workshop on Computer Algebra and its Application to Physics "CAAP-2001" (Dubna, Russia, 2001), Dubna, 2002, pp. 337–347.
42. Vernov S.Yu., *The Painleve Analysis and Special Solutions for Nonintegrable Systems*, 12pp., math-ph/0203003, 2002.
43. Vernov S.Yu., *Construction of solutions for the generalized Henon-Heiles system with the help of the Painleve test*, 21pp., math-ph/0209063, 2002.
44. Vernov S.Yu., *Construction of asymptotic solutions for the generalized Henon-Heiles system in nonintegrable case*, Proceedings of the International Workshop on High Energy Physics and Quantum Field Theory (QFTHEP'2001) (Moscow, Russia, 2001), eds. M.N. Dubinin and V.I. Savrin, Moscow, 2002, pp. 406–413.
45. Vernov S.Yu., *Construction of special solutions for nonintegrable systems with the help of the Painleve test*, the Proceedings of the XXII-th International Workshop on the Fundamental Problems of High Energy Physics and Field Theory (Protvino, Russia, 2002), ed. V.A. Petrov, Protvino, 2003, 260–271.
46. Vernov S.Yu., *The Painleve Analysis and Solutions with Critical Points*, Proceedings of the International Seminar "Quarks-2002" (Novgorod the Great, Russia, 2002), eds. V.A. Matveev, V.A. Rubakov, S.M. Sibiryakov, A.N. Tavkhelidze, Moscow, 2003, pp. 158–168.
47. Timoshkova E.I., Vernov S.Yu., *New exact solutions for the generalized Henon-Heiles system*, Proceedings of the XVII International Workshop on High Energy Physics and Quantum Field Theory (QFTHEP'2003) (Samara-Volgograd, 2003), eds. M.N. Dubinin and V.I. Savrin, Moscow, 2004, pp. 450–457

48. Vernov S.Yu., *Construction of Special Solutions for Nonintegrable Dynamical Systems with the help of the Painlevé Analysis*, Proc. Institute Mathematics of NAS of Ukraine, Mathematics and its Applications, V. 50, part 1, pp. 504–512
49. Edneral V.F., Smolyakov M.N., Vernov S.Yu., Volobuev I.P., *On periodic solutions in five-dimensional gravity*, Proceedings of the XVII International Workshop on High Energy Physics and Quantum Field Theory (QFTHEP'2003) (Samara-Volgograd, 2003), eds. M.N. Dubinin and V.I. Savrin, Moscow, 2004, pp. 321–324
50. Timoshkova E.I., Vernov S.Yu., *The Painleve analysis and construction of solutions for the generalized Henon-Heiles system*, Proceedings of the International Conference "Order and Chaos in Stellar and Planetary Systems (AGAVA'03), ASP Conference Series **316** (2004) 28–33.
51. Timoshkova E.I., Vernov S.Yu., *The Painleve analysis and construction of solutions for the generalized Henon-Heiles system*, Proceedings of the XXVI-th International Workshop on the Fundamental Problems of High Energy Physics and Field Theory (Protvino, Russia, 2003), ed. V.A. Petrov, Protvino, 2004, pp. 133–142.
52. Vernov S.Yu., *Construction of Single-valued Solutions for Nonintegrable Systems with the Help of the Painleve Test*, Proceedings of the International Conference "Computer Algebra in Scientific Computing" (CASC'2004, Saint-Petersburg, Russia), eds. V.G. Ganzha, E.W. Mayr, E.V. Vorozhtsov, Technische Universitat, Munchen, Garching, Germany, 2004, pp. 457–465.
53. Vernov S.Yu., *Construction of Solutions for Nonintegrable Systems with the Help of the Painleve Test*, in Lecture Notes in Computer Science V. 3039 (Computational Science - ICCS 2004: 4th International Conference, Kraków, Poland, June 6-9, 2004, Proceedings, Part IV), eds. Marian Bubak, Geert Dick van Albada, Peter M. A. Sloot, et al., Springer-Verlag, Berlin, Germany, 2004, pp. 382–387.
54. Vernov S.Yu., *Single-valued and multivalued solutions for the generalized Henon-Heiles system with an additional nonpolynomial term*, Proc. of International Conference on Geometry, Integrability and Quantization (2-10 June, 2004, Varna, Bulgaria), eds. I.M. Mladenov, A.C. Hirshfeld, SOFTEX, Sofia, Bulgaria, 2005 pp. 297–310.
55. Vernov S.Yu., *Construction of singlevalued and multivalued solutions for nonintegrable systems*, Proc. of XVIII Workshop on High Energy Physics and Quantum Field Theory, (2004, Saint-Petersburg, Russia), eds. M.N. Dubinin, V.I. Savrin, Moscow, 2005, pp. 369–375
56. Vernov S.Yu., *From the Laurent-Series Solutions to Elliptic Solutions of Nonintegrable Systems*, Proc. of the International Seminar Quarks–2004 (23–30 May, 2004, Pushkinogorie, Russia), eds. D.G. Levkov, V.A. Matveev, V.A. Rubakov, Moscow, 2005, Vol. 2, pp. 80–92
57. Vernov S.Yu., *Interdependence between the Laurent-series and elliptic solutions of nonintegrable systems*, Proc. of the International Conference "Computer Algebra in Scientific Computing" (CASC 2005), Springer-Verlag, Berlin, Germany, 2005, Lecture Notes in Computer Science, 3718 (2005) 457-468
58. Vernov S.Yu., *Painleve Analysis and Exact Solutions of Nonintegrable Systems*, Proc. of International Conference on Geometry, Integrability and Quantization (2005, Varna, Bulgaria), eds. I.M. Mladenov, M. de Leon, SOFTEX, Sofia, Bulgaria, 2006, pp. 297-310
59. Vernov S.Yu., *Construction of elliptic solutions of the quintic complex one-dimensional Ginzburg-Landau equation*, Proc. of International Conference on Geometry, Integrability and Quantization (2006, Varna, Bulgaria), eds. I.M. Mladenov, M. de Leon, SOFTEX, Sofia, Bulgaria, 2007, pp. 322–334
60. Arefeva I.Ya., Koshelev A.S., Vernov S.Yu., *String Field Theory Inspired Phantom Model*, Proc. of Third Advanced Research Workshop "Gravity, Astrophysics and Strings at the Black Sea" (13–20 June, 2005, Kiten, Bulgaria), eds. P.P. Fiziev, M.D. Todorov, St. Kliment Ohridski Unuversity Press, Sofia, Bulgaria, 2006, pp. 10–21

61. Vernov S.Yu., *Crossing the cosmological constant barrier in string inspired models*, Proc. of 14th International Seminar on High Energy Physics QUARKS'2006 (May 19-25, 2006, Repino, St.Petersburg, Russia), eds. S.V. Demidov, V.A. Matveev, V.A. Rubakov, G.I. Rubtsov, Moscow, 2007, V.2, pp. 341–352
62. Vernov S.Yu., *Exact Solutions in Nonlocal Linear Models*, Proc. of International Workshop "Supersymmetry and Quantum Symmetries" (2007, Dubna, Russia), eds. E. Ivanov, S. Fedoruk, Dubna, 2008, pp. 118–121, arXiv:0802.3324
63. Vernov S.Yu., *Construction of Exact Solutions in Two-fields Models*, Proc. of 13-th Lomonosov Conference (August, 2007, Moscow, Russia), ed. A.I. Studenikin, World Scientific, Singapore, 2009, pp. 245–248
64. Vernov S.Yu., *Exact Solutions to Nonlocal Linear Dark Energy Models*, Proc. of the 5th MATHEMATICAL PHYSICS MEETING: Summer School and Conference on Modern Mathematical Physics (2008, Belgrade, Serbia), eds. B. Dragovich, Z. Rakic, Institute of Physics, Belgrade, 2009, Serbia, pp. 473–481
65. Vernov S.Yu., Gravitational models with nonlocal scalar fields, Proc. of XIX Workshop on High Energy Physics and Quantum Field Theory (QFTHEP'2010, September 8-15, 2010, Golitsino, Russia), Proceedings of Science, PoS(QFTHEP2010)072, 2010, [arXiv:1201.5293].
66. Bulatov N.V., Vernov S.Yu., Stable cosmological solutions and superpotential method, Proc. of XIX Workshop on High Energy Physics and Quantum Field Theory (QFTHEP'2010, September 8-15, 2010, Golitsino, Russia), Proceedings of Science, PoS(QFTHEP2010)075, 2010.
67. Vernov S.Yu., Nonlocal Cosmological Models and Exact Solutions, Proc. of 16-th International Seminar on High Energy Physics "QUARKS-2010" (June 6-12, 2010, Kolomna, Russia), V.A. Matveev, A.G. Panin, V.A. Rubakov, Moscow, 2010, pp. 391-401.
68. Vernov S.Yu., Solutions of nonlocal cosmological equations, Proc. of XXIX Workshop on Geometric Methods in Physics (Bialowieza Poland 27.06.2010-03.07.2010), eds. P. Kielanowski, V. Buchstaber, A. Odziejewicz, M. Schlichenmaier, T. Voronov, AIP Conf. Proc. 1307 (2010) 185-190.
69. Elizalde E., Pozdeeva E.O., Vernov S.Yu., Stability of de Sitter Solutions in Non-local Cosmological Models, Proc. of the XXth International Workshop on High Energy Physics and Quantum Field Theory (QFTHEP'2011), Proceedings of Science, PoS(QFTHEP2011)038, 2012, [arXiv:1202.0178].

Arxiv:

70. [I.Ya. Aref'eva](#), [N.V. Bulatov](#), [R.V. Gorbachev](#), [S.Yu. Vernov](#), Induced Gravity Cosmological Model with Non-positively Defined Higgs Potential, [arXiv:1206.2801](#)

