

VLADIMIR M. MOSTEPANENKO

PUBLICATIONS

A. Monographs

1. New Developments in the Casimir Effect. *Physics Reports*, v.353, N1–3, p.1–205, 2001 (with M. Bordag, U. Mohideen).
2. *The Casimir Effect and its Applications*. Clarendon Press, Oxford, 1997, p.1–211 (with N.N.Trunov).
3. *Vacuum Quantum Effects in Strong Fields*. Friedmann Laboratory Publishing Ltd, St.Petersburg, 1994, p.1–362 (with A.A.Grib, S.G.Mamayev).
4. *Casimir Effect and its Applications*. Energoatomizdat, Moscow, 1990, p.1–216 (with N.N.Trunov). In Russian.
5. *Vacuum Quantum Effects in Strong Fields*. Energoatomizdat, Moscow, 1988, p.1–288 (with A.A.Grib, S.G.Mamayev). In Russian.
6. *Quantum Effects in Intensive External Fields*. Atomizdat, Moscow, 1980, p.1–296 (with A.A.Grib, S.G.Mamayev). In Russian.

B. Papers

1. Surface-impedance approach solves problems with the thermal Casimir force between real metals. *Phys. Rev. A*, v.67, N6, p.062102-1–15, 2003 (with B.Geyer, G.L.Klimchitskaya).
2. Unexpected applications of Hill's differential equations in Quantum Field Theory and Cosmology. *Int. J. Mod. Phys. A*, v.18, N12, p.2159–2166, 2003.
3. New features of the thermal Casimir force at small separations. *Phys. Rev. Lett.*, v.90, N16, p.160404-1–4, 2003 (with F.Chen, G.L.Klimchitskaya, U.Mohideen).
4. Correlation of energy and free energy for the thermal Casimir force between real metals. *Phys. Rev. A*, v.66, N6, 062112-1–13, 2002 (with V.B.Bezerra, G.L.Klimchitskaya).
5. Experimental status of corrections to Newtonian gravitation inspired by extra dimensions. *Int. J. Mod. Phys. A*, v.17, N29, p.4307–4316, 2002.
6. Experimental and theoretical investigation of the lateral Casimir force between corrugated surfaces. *Phys. Rev. A*, v.66, N3, p.032113-1–11, 2002 (with F. Chen, U. Mohideen, G.L. Klimchitskaya).
7. Perturbation approach to the Casimir force between two bodies made of different real metals. *Phys. Rev. A*, v.65, N6, p.062109-1–6, 2002 (with B. Geyer, G.L. Klimchitskaya).

8. Particle creation in the chiral cosmic strings space-time. *Int. J. Mod. Phys. D*, v.11, N3, p.437–445, 2002 (with V. B. Bezerra, R. M. Teixeira Jr.).
9. Constraints on forces inspired by extra dimensional physics following from the Casimir effect. *Int. J. Mod. Phys. A*, v.17, N6–7, p.722–731, 2002.
10. Thermodynamical aspects of the Casimir force between real metals at nonzero temperature. *Phys. Rev. A*, v.65, N5, p.052113-1–7, 2002 (with V.B. Bezerra, G.L. Klimchitskaya).
11. Demonstration of the lateral Casimir force. *Phys. Rev. Lett.*, v.88, N10, p.101801-1–4, 2002 (with F. Chen, U. Mohideen, G.L. Klimchitskaya).
12. Reply to Sernelius and Boström Comment. *Phys. Rev. Lett.*, v.87, N25, p.259102-1, 2001 (with B. Geyer, M. Bordag, G.L. Klimchitskaya).
13. New constraints on ultrashort-ranged Yukawa interactions from atomic force microscopy. *Phys. Rev. D*, v.64, N7, p.075010-1–7, 2001 (with E. Fischbach, D.E. Krause, M. Novello).
14. Casimir force under the influence of real conditions. *Int. J. Mod. Phys. A*, v.16, N19, p. 3291–3308, 2001 (with B. Geyer, G.L. Klimchitskaya).
15. Investigation of temperature dependence of the Casimir force between real metals. *Phys. Rev. A*, v.63, N6, p.062108-1–18, 2001 (with G.L. Klimchitskaya).
16. Constraints on non-Newtonian gravitaty from the Casimir force measurements between two crossed cylinders. *Phys. Rev. D*, v.63, N11, 115003-1–5, 2001 (with M. Novello).
17. Weak scale compactification and constraints on non-Newtonian gravity in submillimeter range. In: “Geometrical Aspects of Quantum Fields”. Eds. A.A. Bytsenko, A.E. Goncalves, B.M. Pimental. World Scientific, 2001, p.128–138. (with M. Novello).
18. Casimir force at both non-zero temperature and finite conductivity. *Phys. Rev. Lett.*, v.85, N3, p.503–506, 2000 (with M.Bordag, B.Geyer, G.L.Klimchitskaya).
19. Higher order conductivity corrections to the Casimir force. *Phys. Rev. A*, v.62, N1, 014102-(1–4), 2000 (with V.B.Bezerra, G.L.Klimchitskaya).
20. New constraints for non-Newtonian gravity in nanometer range from the improved precision measurement of the Casimir force. *Phys. Rev. D*, v.62, N1, 011701(R)-(1–5), 2000 (with M.Bordag, B.Geyer, G.L.Klimchitskaya).
21. Casimir and van der Waals force between two plates or a sphere (lens) above a plate made of real metals. *Phys. Rev. A*, v.61, N6, p.062107-(1–12), 2000 (with U.Mohideen, G.L.Klimchitskaya).

22. The Casimir interaction atom-macrobody and between two macrobodies: the influence of surface distortions. *Comm. Mod. Phys.*, v.1, N5–6, p.285–300, 2000 (with G.L.Klimchitskaya).
23. Cosmological applications of QFT in curved spacetimes. In: “Proc. IX Brazilian School of Cosmology and Gravitation”. Ed. M.Novello, Atlantisciences, Frontier, 2000, p.293–352.
24. Jacobi elliptic solutions of $\lambda\phi^4$ theory in a finite domain. *Int. J. Mod. Phys. A*, v.15, N17, p.2645–2659, 2000 (with J.A. Espich’an Carrillo, A. Maia Jr.).
25. New experimental results on the Casimir effect. *Braz. J. Phys.*, v.30, N2, p.309–315, 2000.
26. Stronger constraints for nanometer scale Yukawa-type hypothetical interactions from the new measurement of the Casimir force. *Phys.Rev.D*, v.60, N 5, 055004-1–7, 1999 (with M.Bordag, B.Geyer, G.L.Klimchitskaya).
27. Complete roughness and conductivity corrections for the recent Casimir force measurement. *Phys. Rev. A.*, v.60, N5, p.3487–3497, 1999 (with G.L.Klimchitskaya, A.Roy, U.Mohideen).
28. Induced parity-violation anomaly for the Proca field in a three-dimensional space-time. *Int. J. Mod. Phys. A*, v.14, N2, p.271–280, 1999 (with E.R. Bezerra de Mello).
29. New measurements of the Casimir force as a test for non-gravitational long-range interactions. In: “Proc. 4th Alexander Friedmann International Seminar on Gravitation and Cosmology”. Editors: Yu.N.Gnedin, A.A.Grib, V.M. Mostepanenko, W.A.Rodrigues-Jr. Unicamp, Campinas, 1999, p.317–333 (with M.Bordag, B.Geyer, G.L.Klimchitskaya).
30. Casimir effect as a test for hypothetical interactions. In: “Proc. 4th Workshop on Quantum Field Theory Under the Influence of External Conditions”. Editor: M. Bordag, World Scientific, Singapore, 1999, p.39–49 (with M.Bordag, B.Geyer, G.L.Klimchitskaya).
31. Using an atomic force microscope in the surface modification regime to determine the migration energy of surface defects. *Rus. Phys. Tech. Phys. (USA)*, v.44, N8, p.964–969, 1999 (with E.V.Blagov, G.L.Klimchitskaya).
32. Description of force surfaces in atomic force microscopy with allowance for the mobility of the lattice atoms. *Rus. Phys. Tech. Phys. (USA)*, v.44, N8, p.970–976, 1999 (with E.V.Blagov, G.L.Klimchitskaya).
33. Particle creation and vacuum polarization of nonconformal scalar field near the isotropic cosmological singularity. In: “Proc. 8th Marcel Grossmann Meeting on General Relativity”, Ed. Tsvi Piran, World Sci, Singapore, 1999, p.821–823 (with J.Lindig).

34. Jacobi elliptic solutions of $\lambda\phi^4$ theory in a finite domain. In: “Particles and Fields. Eight Mexican School”. Oaxaca, Mexico, November 1998. American Institute of Physics, Melville, New York, 1999, p.331–334 (with J.A.Espich’an Carrillo, A.Maia Jr.).
35. New constraints on the Yukawa-type hypothetical interactions from the recent Casimir force measurement. *Phys. Rev. D*, v.57, p.2024, 1998 (with M.Bordag, G.T.Gillies).
36. Particle creation and vacuum polarization of nonconformal scalar field near the isotropic cosmological singularity. *Classical and Quantum Gravity*, v.15, N3, p.581–602, 1998 (with M.Bordag, J.Lindig).
37. The feasibility to determine the vacancy migration energy by the atomic force microscopy data. *Surf. Rev. Lett.* v.5, N2, p.559–567, 1998 (with E.V.Blagov, G.L.Klimchitskaya).
38. Constraints for hypothetical interactions from a recent demonstration of the Casimir force and some possible improvements. *Phys. Rev. D*, v.58, N7, p.075003-1–16, 1998 (with M. Bordag, B. Geyer, G.L. Klimchitskaya).
39. Impact of atomic relaxation on the breaks of constant force surfaces in AFM. *Surface Science*, v.410, N2/3, p.158–169, 1998 (with E.V.Blagov, G.L.Klimchitskaya).
40. Hamiltonian diagonalization for the nonconformal scalar field on an isotropic gravitational background. *Int. J. Mod. Phys. D*, v.7, N2, p.249–259, 1998 (with V.B.Bezerra, C.Romero).
41. New constraints on the degree-type hypothetical interactions from the recent Casimir force measurement. In: “Proc. XVII Brazilian National Meeting on Particles and Fields”. FAPESP — SBF, São Paulo, 1998, p.97–99 (with E.R. Bezerra de Mello, G.L.Klimchitskaya).
42. Induced parity-violation in the Proca Lagrangian by coupling with photons from Maxwell-Chern-Simon theory. In: “Proc. XVII Brazilian National Meeting on Particles and Fields”. FAPESP — SBF, São Paulo, 1998, p.121–125 (with E.R. Bezerra de Mello).
43. Quasi-energy spectrum of a nonconformal scalar field in an isotropic gravitational background. In: “Proc. XVII Brazilian National Meeting on Particles and Fields”. FAPESP — SBF, São Paulo, 1998, p.389–391 (with V.B.Bezerra, C.Romero).
44. Casimir effect as a test for hypothetical long-range interactions. In: “Proc. Workshop on Casimir Forces”. Editors: C.-K.Au, P.Milonni, L.Spruch, J.F.Babb, Cambridge, Massachusetts, 1998, p.85–95.

45. Atomic paths when scanning of the AFM tip above the close-packed surface in repulsive mode. *Surf. Rev. Lett.*, v.5, N5, p.989–996, 1998 (with E.V.Blagov, G.L.Klimchitskaya).
46. The Casimir effect. In: “Physical Encycloapedia”, v.5. Editor: A.M.Prokhorov, Moscow, Large Russian Encycloapedia, 1998, p.644-645.
47. Vacuum quantum effects of nonconformal scalar field in a nonsingular cosmological model. *Int. J. Mod. Phys. D*, v.7, N5, p.779–792, 1998 (with M. Novello, V.B. Bezerra).
48. New constraints on the Yukawa-type hypothetical interactions from the recent Casimir force measurement. *Phys. Rev. D*, v.56, N1, p.R6–R10, 1997 (with M.Bordag, G.T.Gillies).
49. Vacuum stress-energy tensor of nonconformal scalar field in quasi-Euclidean gravitational background. *Int. J. Mod. Phys. D*, v.6, N4, p.449–463, 1997 (with M.Bordag, J.Lindig, Yu.V.Pavlov).
50. Constraints on the parameters of degree-type hypothetical forces following from the new Casimir force measurement. *Physics Letters A*, v.236, N4, p.280–288, 1997 (with G.L.Klimchitskaya, E.R.Bezerra de Mello).
51. Heisenberg representation for creation-annihilation operators in nonstationary background. In: “Problems of Fundamental Physics”. Editor: A.I.Studenikin. Moscow, International Centre for Advanced Studies, 1997 (Proc. 7th Lomonosov Conf. on Elementary Particle Physics), p.71–80 (with A.A.Lobashov).
52. A proposed experiment using a sphere with an eccentric cavity for hypothetical long-range interactions. *Int. J. Mod. Phys. A*, v.12, N8, p.1465–1482, 1997 (with G.L.Klimchitskaya, C.Romero, Ye.P.Krivtsov, A.Ye.Sinelnikov).
53. Calculation of local friction forces in atomic-force microscopy of metal surfaces. *Rus. Phus. Techn. Phys. (USA)*, v.42, N2, p.243–246, 1997 (with E.V.Blagov, G.L.Klimchitskaya, M.Z.Smirnov).
54. Modelling of surfaces of constant force above a lattice of close-packed atoms in the repulsive mode. *Sov. Phys. Techn. Phys. (USA)*, v.42, N6, p.655–662, 1997 (with E.V.Blagov, G.L.Klimchitskaya, A.A.Lobashov).
55. Creation of nonconformal particles from vacuum by a test-model isotropic gravitational field. *Modern Phys. Lett. A*, v.12, N3, p.145–154, 1997 (with V.B.Bezerra, C.Romero).
56. Calculation of the lateral force components in AFM contact mode in application to the diagnostic of point defects. *Surface Review and Letters*, v.4, N2, p.271–278, 1997 (with E.V.Blagov, G.L.Klimchitskaya).

57. AFM operating mode with a constant force projection onto the arbitrary axis. *Surface Review and Letters*, v.4, N4, p.613–620, 1997
58. How to describe AFM constant force surface in repulsive mode? *Surf. Sci.*, v.349, N2, p.196–206, 1996 (with E.Blagov, G.Klimchitskaya, A.A.Lobashov).
59. Heisenberg picture for quantized fields interacting with nonstationary electromagnetic or gravitational background. In: "Gravity, Particles and Space-Time". Editors P.Pronin, G.Sardanashvily, World Scientific, Singapore, 1996, p.61–80 (with A.A.Lobashov).
60. Casimir effect for the real boundaries: contribution of the electrical and mechanical imperfections. In: "Quantum Field Theory Under the Influence of External Conditions". Editor: M.Bordag, B.G.Teubner Verlagsgesellschaft, Stuttgart-Leipzig, 1996, p.55.
61. Vacuum quantum effects of nonconformal scalar field in the radiation dominated Friedmann Universe. *Gravitation and Cosmology*, v.2, N3, p.206–210, 1996 (with V.B.Bezerra, C.Romero).
62. Casimir effect for the real boundaries. In: "Proc. XVII Brazilian National Meeting on Particles and Fields". FAPESP — SBF, São Paulo, 1996, p.137–148.
63. Vacuum quantum effects of nonconformal scalar field in the Friedmann cosmology. In: "Proc. XVII Brazilian National Meeting on Particles and Fields". FAPESP — SBF, São Paulo, 1996, p.242–245 (with V.B.Bezerra, C.Romero).
64. New experiment for obtaining stronger constraints on hypothetical particles of modern field theory. In: "Proc. XVII Brazilian National Meeting on Particles and Fields". FAPESP — SBF, São Paulo, 1996, p.476–481 (with G.L.Klimchitskaya, Ye.P.Krivtsov, C.Romero, A.Ye.Sinelnikov).
65. Vacuum quantum effects near an anisotropic singularity. *Gravitation and Cosmology*, v.2, N4, p.315–318, 1996 (with M.Bordag, J.Lindig).
66. The Casimir force between plates with small deviations from plane parallel geometry. *Int. J. Mod. Phys. A*, v.10, N18, p.2661–2681, 1995 (with M.Bordag, G.L.Klimchitskaya).
67. Corrections to the Casimir force between plates with stochastic surfaces. *Phys. Lett. A*, v.200, N2, p.95–102, 1995 (with M.Bordag, G.L.Klimchitskaya).
68. Corrections to the van der Waals forces in application to atomic force microscopy. *Surf. Sci.*, v.328, N1/2, p.129–134, 1995 (with M.Bordag, G.L.Klimchitskaya).
69. Modeling of the atomic structure of an atomic-force microscope tip during scanning in repulsive mode. *Rus. Tech. Phys. Lett. (USA)*, v.21, N 2, p.121–123, 1995 (with E.Blagov, G.Klimchitskaya, A.Lobashov).

70. Casimir-type null experiment for obtaining stronger restrictions on constants of long-range interactions. *Gravitation and Cosmology*, v.1, N1, p.25–30, 1995 (with M.Bordag, I.Yu.Sokolov).
71. Heisenberg representation for the creation-annihilation operators in non-stationary gravitational field. In: “Proc. of the Third A.Friedmann International Seminar on Gravitation and Cosmology”. Editors: Yu.N.Gnedin, A.A.Grib, V.M.Mostepanenko, Friedmann Laboratory Publishing Ltd, St.Petersburg, 1995, p.193–206
72. Possible ways to determine the migration energy of point defects using atomic force microscopy. *Rus. Tech. Phys. Lett. (USA)* v.20, N1, p.34–36, 1994 (with E.V.Blagov, G.L.Klimchitskaya, V.I.Panov, I.Yu.Sokolov).
73. Theoretical and experimental study of the microstructure of bismuth ceramics by tunnelling and atomic force microscopy. *Rus. Phys. Tech. Phys. (USA)*, v.39, N1, p.49–56, 1994 (with E.V.Blagov, Yu.N.Moiseev, A.Yu.Musatenko, V.I.Panov, S.V.Savinov, I.Yu.Sokolov).
74. On the strengthening of restrictions on hypothetical Yukawa-type forces with extremely small range of action. *Phys. Lett. A*, v.187, N1, p.35–39, 1994 (with M.Bordag, I.Yu.Sokolov).
75. Possible optimization of Eötvös experiment for the search of a new long-range forces. In: “Particle Physics, Gauge Fields and Astrophysics”. Editor: A.I. Studenikin, Accademia Nazionale dei Lincei, Rome, Italy, 1994, p.85–89 (with I.Yu.Sokolov).
76. Casimir force between two parallel plates with small distortions of different types. *Mod. Phys. Lett. A*, v.9, N 27, p.2515–2526, 1994 (with M.Bordag, G.L.Klimchitskaya).
77. Restrictions on the hypothetical long-range interactions from the Casimir-type null experiment with three test bodies. *Mod. Phys. Lett. A*, v.9, N29, p.2671–2680, 1994 (with M.Bordag, I.Yu.Sokolov).
78. The search on non-gravitational long-range interactions in laboratory experiments. In: “Proc. of the Second A.Friedmann International Seminar on Gravitation and Cosmology”. Editors: Yu.N.Gnedin, A.A.Grib, V.M.Mostepanenko, St.Peterburg: Friedmann Laboratory Publishing Ltd, 1994, p.187–194 (with I.Yu.Sokolov).
79. Non-stationary and non-linear dispersive medium as external field which generates the squeezed states. In: “International Workshop on Squeezed States and Uncertainty Relations”. NASA Conf. Publ. 3219, Maryland, 1993, p.359–362 (with A.A.Lobashov).
80. Hypothetical long-range interactions and restrictions on their parameters from force measurements. *Phys. Rev. D*, v.47, N7, p.2882–2891, 1993 (with I.Yu.Sokolov).

81. Diagnostics of radioaction induced point defects by atomic force microscopy. Rus. Tech. Phys. Lett. (USA), v.19, N4, p.254–256, 1993 (with E.V.Blagov, G.L.Klimchitskaya, V.I.Panov, I.Yu.Sokolov).
82. Broken continuity of the lines of constant force above a surface with a relief steps and the resolution of the atomic force microscope. Rus. Tech. Phys. Lett. (USA), v.19, N4, p.251–254, 1993 (with I.Yu.Sokolov, V.I.Panov).
83. Heisenberg representation of second-quantized fields in non-stationary external fields and non-linear dielectric media. Theor. Math. Phys. (USA), v.97, N3, p.1393–1404, 1993 (with A.A.Lobashov).
84. Scanning atomic-force microscopy of CdS molecular layers. Poverhnost, N 7, p.98–101, 1992 (with D.A.Znamensky, Yu.N.Moiseev, V.I.Panov, P.A.Todua).
85. Restrictions on the objects of Quantum Gravity from terrestrial experiments. In: “Relativistic Astrophysics and Cosmology”. World Sci., Singapore, 1992, p.262–267 (with I.Yu.Sokolov).
86. Crystallite grain boundaries of superconducting ceramics studied by the method of atomic force microscopy. Rus. Tech. Phys. Lett. (USA), v.18, N9, p.594–597, 1992 (with E.V.Blagov, Yu.N.Moiseev, V.I.Panov, I.Yu.Sokolov).
87. Enhancement of the tunneling effect of two zero-radius three-dimensional potential wells by an alternating electric field. Rus. Phys. Tech. Phys. (USA), v.37, N11, p.1055–1059, 1992 (with F.A.Aleksandrov, G.L.Klimchitskaya).
88. The perspectives of decentralization of unity of measurements system and quantum metrology. Izmeritelnaya Tehnika, N 11, p.3–5, 1992 (with A.Ya.Kazakov, M.I.Eides).
89. Hypothetical long-range forces and modern experiments. In: “Proceedings of the Second Workshop on Quantum Field Theory under the Influence of External Conditions”. Editor D.Robaschik, NTZ Leipzig University, Leipzig, 1992, p.257–272 (with I.Yu.Sokolov).
90. Quantum effects in nonlinear insulating materials in the presence of a non-stationary electromagnetic field. Theor. Math. Phys. (USA), v.86, N3, p.303–309, 1991 (with A.A.Lobashov).
91. Diagnostics of the boundary phases of high- T_c ceramic superconductors by the atomic force microscope. Sov. Tech. Phys. Lett. (USA), v.17, N4, p.312–314, 1991 (with E.V.Blagov, Yu.N.Moiseev, V.I.Panov, I.Yu.Sokolov).
92. On the optimal experiment on Casimir force measurements for the search of new long-range interactions. In: “Modern problems of Theoretical Physics”. Editors: P.I.Pronin, Yu.N.Obukhov, World Sci., Singapore, 1991, p.175–196 (with I.Yu.Sokolov).

93. Effect of a high frequency electromagnetic field on tunneling transitions between two localized states. *Sov. J., Nucl. Phys. (USA)*, v.54, N1, p.42–47, 1991 (with F.O.Aleksandrov, G.L.Klimchitskaya).
94. Quantum effects associated with parametric generation of light and the theory of squeezed states. *Theor. Math. Phys. (USA)*, v.88, N3, p.913–925, 1991 (with A.A.Lobashov).
95. Quantum metrology. *Priroda*, N 9, p.19–30, 1991.
96. Optimal Cavendish-type experiment for the search of restrictions on light particles of Quantum Gravity. In: “Proc. of the Fifth Seminar Quantum Gravity”. Editors: M.A.Markov, V.A.Berezin, V.P.Frolov, World Sci., Singapore, 1991, p.213–232 (with I.Yu.Sokolov).
97. Experimental and theoretical study of the forces and spatial resolution in an atomic force microscope. *Sov. Phys. Tech. Phys. (USA)*, v.35, N1, p.84–88, 1990 (with Yu.N.Moiseev, V.I.Panov, I.Yu.Sokolov).
98. Metrological surface scanning tunneling and atomic force microscopy. *Meas. Tech. (USA)*, v.33, N 1, p.26–30, 1990 (with S.I.Vassiliev, V.I.Panov).
99. Laboratory tests for the constituents of dark matter. *Astronomische Nachrichten*, v.311, N3, p.197–200, 1990 (with I.Yu.Sokolov).
100. Stronger restrictions on the constants of long-range forces decreasing as r^{-n} . *Phys. Lett. A*, v.146, N7/8, p.373–374, 1990 (with I.Yu.Sokolov).
101. Limitation on the parameters of Yukawa long-range interaction from atomic force microscopy. *Sov. Phys. Dokl. (USA)* v.34, N2, p.147–149, 1989 (with Yu.N.Moiseev, V.I.Panov, I.Yu.Sokolov).
102. Corrections to vacuum forces resulting from small distortions of the geometry of a region. *Theor. Math. Phys. (USA)*, v.79, N2, p.487–493, 1989 (with Yu.B.Zayaev).
103. Restrictions on the parameters of spin-1 antigraviton and dilaton following from the Casimir effect, Eotvos and Cavendish experiments. *Sov. J. Nucl. Phys. (USA)*, v.49, N6, p.1118–1120, 1989 (with I.Yu.Sokolov).
104. Experimental limitation on the “fifth force” parameters. In: “Proc. of the Fifth Marcel Grossman Meeting on General Relativity. Part 2”. Editors: D.G.Blair, M.J.Buckingham, World Sci., Singapore, 1989, p.1613–1617 (with Yu.N.Moiseev, V.I.Panov, I.Yu.Sokolov).
105. Spectroscopy of interatomic interaction by the atomic force microscopy method. *Sov. Tech. Phys. Lett. (USA)*, v.15, N10, p.789–791, 1989 (with Yu.N.Moiseev, V.I.Panov, I.Yu.Sokolov).
106. The Casimir effect. *Nauka i Jizn*, N 12, p.144–145, 1989.

107. Quantum effects in Friedmann space. In: “A.A.Friedmann: Centenary volume”. Editors: M.A.Markov, V.A.Berezin, V.F.Mukhanov, World Sci., Singapore, 1989, p.176–190 (with A.A.Grib).
108. Casimir forces between complex shaped bodies. Sov. Phys. Dokl. (USA), v.33, N2, p.140–141, 1988 (with I.Yu.Sokolov).
109. Stress-energy tensor of intermediate bosons vector field in external field. Theor. Math. Phys. (USA), v.74, N2, p.137–142, 1988 (with I.Yu.Sokolov).
110. Casimir effect and its metrological applications. Metrologia, N 3, p.3-11, 1988.
111. Casimir effect for the regions with the broken symmetry of boundaries. Sov. Phys. J. (USA), v.31, N7, p.575, 1988 (with Yu.B.Zayaev, A.Ya.Kazakov, N.N.Trunov).
112. Four dimensional dynamics of the transformation of virtual particles into real ones in a strong gravitational field. In: “Proc. of the Fourth Seminar on Quantum Gravity”. Editors: M.A.Markov, V.A.Berezin, V.P.Frolov, World Sci., Singapore, 1988, p.659–672 (with N.N.Trunov).
113. New restrictions on the parameters of the spin-1 antigraviton following from the Casimir effect, Eötvos and Cavendish experiments. Physics Letters A, v.132, N 6,7, p.313–315, 1988 (with I.Yu.Sokolov).
114. Force dependences for the definition of the atomic force microscopy spatial resolution. Physics Letters A, v.132, N6,7, p.354–358, 1988 (with Yu.N.Moiseev, V.I.Panov, I.Yu.Sokolov).
115. Casimir effect and its applications. Sov. Phys.-Uspekhi, v.31, N11, p.965–987, 1988 (with N.N.Trunov).
116. Casimir forces between plates with a periodical longitudinal inhomogeneity. Sov. Phys. J. (USA), N 12, 1988 (with Yu.B.Zayaev, N.N.Trunov).
117. Vacuum quantum effects of vector fields in non-stationary electric field. In: “Gravitation and Electromagnetism”. Editor: F.I.Fedorov, Minsk, BGU, 1988, p.160–176 (with V.M.Frolov, V.A.Sheluto).
118. The problem of narrow peaks in heavy ions collisions. In: “Manyparticle effects in atoms”. Editor: U.I.Safronova, M., 1988, p.60–72 (with M.I.Eides).
119. The restrictions on long-range forces following from Casimir effect. Sov. J. Nucl. Phys. (USA), v.46, N4, p.685–688, 1987 (with I.Yu.Sokolov).
120. The Casimir effect leads to new restrictions on long-range forces constants. Physics Letters A, v.125, N8, p.405–408, 1987 (with I.Yu.Sokolov).
121. Fundamental physical constants and standards of physical units. Izmeritelnaya Tehnika, N 8, p.4–6, 1986 (with Yu.V.Tarbeev, M.I.Eides).

122. The perspectives of improving the volt standard on the base of Josephson effect. *Izmeritel'naya Tehnika*, N 8, p.16–18, 1986 (with S.V.Potapov).
123. The Casimir effect and possibilities of its applications to metrology. In: “Proc. 3rd Symposium on Theoretical Metrology”, Berlin, 1986, p.47–55.
124. Quantum theory and the problem of cosmological singularity. In: “Modern problems of quantum field theory”. Editor: Yu.M.Lomsadze, Ordgonikidze, 1986, p.105–119 (with A.M.Mostepanenko).
125. Particle creation from vacuum by gravitational field: history and perspectives. In: “Problems of Gravitation”. Editor: D.V.Galtsov, M. MGU, 1986, p.55-67 (with A.A.Grib, S.G.Mamayev).
126. On the actual applications of the theory of atomic spectra in metrology. In: “Correlation and Relativistic Effects in Atoms and Ions”. Editor: U.I.Safronova, M., 1986, p.93–105.
127. The development of pictures of vacuum in physics and philosophy. *Priroda*, N 3, p.88–95, 1985 (with A.M.Mostepanenko).
128. Quantum field theory of Casimir forces taking into account the non-ideality of plates material. *Metrologia*, N 3, p.17–28, 1985 (with N.N.Trunov).
129. Dimensional regularization method for scalar and vector fields in homogeneous isotropic spaces. *Theor. Math. Phys (USA)*, v.63, N1, p.366–375, 1985 (with S.G.Mamayev, V.A.Sheluto).
130. Casimir effect in space-time with non-trivial topology. In: “Proc. of the Third Seminar on Quantum Gravity”. Editors: M.A.Markov, V.A.Berezin, V.P.Frolov. World Sci., Singapore, 1985, p.462–478 (with S.G.Mamayev).
131. Quantum field theory of the Casimir effect for the real media. *Sov. J. Nucl. Phys. (USA)*, v.42, N5, p.818–822, 1985 (with N.N.Trunov).
132. On the possibility of gravitational waves detection with the help of vacuum quantum effects. In: “Gravitational waves”. Editor: A.F.Pisarev, Dubna, P-2-85-667, 1985, p.84–91 (with S.G.Mamayev).
133. The problem of gravitational waves detection and interferometric methods of measurements of ultrasmall displacements. In: “Problems of Quantum Metrology, Editor: Yu.V.Tarbeev, Leningrad, 1985, p.44–49 (L.F.Vitushkin).
134. The exact equivalence of n-wave regularization to the renormalization procedure for the spinor field in isotropic space-time. *Physics Letters A*, v.93, N8, p.391–393, 1983 (with S.G.Mamayev).
135. The vacuum energy density of the fermion field in a Friedmann Universe and the cosmological problem. *Sov. Astron. Lett.*, v.9, N2, p.71–73, 1983 (with S.G.Mamayev).

136. Charged vector bosons pair creation by non-stationary electric field. *Sov. J. Nucl. Phys. (USA)*, v.37, N5, p.750–754, 1983 (with V.M.Frolov, V.A.Sheluto).
137. On renormalizations in calculations of vacuum quantum effects in gravitational field. *Sov. J. Nucl. Phys. (USA)*, v.37, N5, p.786–789, 1983 (with S.G.Mamayev).
138. On new solutions of Einstein equations taking into account vacuum effects of quantized fields. *Sov. Phys. J. (USA)*, v.26, N8, p.705–708, 1983 (with S.G.Mamayev).
139. Selfconsistent treatment of vacuum effects in isotropic cosmology. In: “Proceedings of the Second Seminar “Quantum Gravity”. Editors: M.A.Markov, V.A.Berezin, V.P.Frolov. Institute of Nuclear Research, Moscow, 1982, p.113–122 (with S.G.Mamayev).
140. The calculation method of vacuum polarization in quantum electrodynamics with non-stationary external field. *Sov. Phys. J (USA)*, N 1, 1981.
141. The effective action for non-stationary electromagnetic field and perturbation theory. *Sov. J. Nucl. Phys. (USA)*, v.33, N4, p.569–572, 1981 (with S.G.Mamayev, M.I.Eides).
142. On the self-consistent treatment of quantum effects in isotropic cosmology. In: “Problems of gravitational theory and elementary particles. Editor: K.P.Stanukovich. N 12, Moscow, Energoizdat, 1981 (with S.G.Mamayev).
143. Isotropic cosmological models determined by the vacuum quantum effects. *Sov. Phys.-JETP (USA)* v.51, N1, p.9–13, 1980 (with S.G.Mamayev).
144. Particle creation and vacuum polarization by a non-stationary electric field. *Theor. Math. Phys. (USA)*, v.45, N2, p.983–991, 1980.
145. Vacuum stress-energy tensor and particle creation in isotropic cosmological models. *Fortschr. der Physik*, v.28, N4, p.173–199, 1980 (with A.A.Grib, S.G. Mamayev).
146. On the influence of quantized fields upon the space-time metric in cosmology. *Sov. J. Nucl. Phys. (USA)*, v.31, N6, p.876–879, 1980.
147. Particle creation and vacuum polarization in isotropic Universe. *J. of Physics A*, v.13, N6, p.2057–2065, 1980 (with A.A.Grib, S.G.Mamayev).
148. Superfluidity of the vacuum near an anisotropic singularity: a new phase transition. *JETP Lett. (USA)*, v.32, N2, p.130–133, 1980 (with A.A.Grib, S.G.Mamayev).
149. Stress-energy tensor of particles created from vacuum by homogeneous electric field. *Sov. J. Nucl. Phys. (USA)*, v.30, N1, p.107–110, 1979.

150. Spontaneous breaking of gauge and discrete symmetry in curved space-time. In: “Problems of gravitational theory and elementary particles”. Editor: K.P.Stanukovich, N10, M., Atomizdat, 1979, p.74–91 (with A.A.Grib).
151. The analogies of theories of vacuum quantum effects in electromagnetic and gravitational fields. *Physics Letters*, v.75A, N1/2, p.11–13, 1979.
152. Conformal symmetry breaking and quantization in curved space-time. *Physics Letters*, v.65A, N4, p.282–284, 1978 (with V.M.Frolov, A.A.Grib).
153. Particle creation by gravitational field and cosmological singularity. *Pis'ma v Astron. Zhurnal*, v.4, N5, p.203–206, 1978 (with S.G.Mamayev).
154. Regularization of the fermion stress-energy tensor in isotropic cosmological models of the Universe. *Phys. Lett. A*, v.67, N3, p.165–168, 1978 (with S.G.Mamayev).
155. Pair creation of particles in expanding isotropic Universe. In: “Problems of gravitational theory and elementary particles”. Editor: K.P.Stanukovich, N9, M., Atomizdat, 1978, p.7–27 (with A.A.Grib, S.G.Mamayev).
156. Spontaneous breaking of CP-symmetry in nonstationary isotropic metric. *Theor. Math. Phys. (USA)*, v.37, N2, p.975–983, 1978 (with A.A.Grib, V.M.Frolov).
157. Conformal symmetry breaking and quantization in curved space-time. *Theor. Math. Phys. (USA)*, v.37, N3, p.1065–1070, 1978 (with A.A.Grib, V.M.Frolov).
158. Renormalization of gravitational constant and creation of fermions by nonstationary gravitational field. *Sov. J. Nucl. Phys. (USA)*, v.28, N6, p.845–851, 1978 (with S.G.Mamayev).
159. The problem of existence of microreality and the new types of physical relativity. *International Logic Review*, v.7, N2, p.160–166, 1977 (with A.M.Mostenpanenko).
160. Energy and pressure of fermion pairs created near the Friedmann singularity. *Pis'ma v Astron. Zhurnal*, v.3, N2, p.51–53, 1977 (with S.G.Mamayev).
161. Spontaneous breaking of gauge symmetry in homogeneous isotropic Universe of the open type. *Sov. Phys.-JETP Lett.*, v.25, N6, p.277–279, 1977 (with A.A.Grib).
162. On the properties of $O(3,1)$ -invariant expansions basis functions. *Izvestiya Vuzov, Fizika*, N 2, p.29–35, 1977 (with B.A.Levitskii, V.M.Frolov).
163. Creation of fermions by non-stationary gravitational field. *Sov. J. Nucl. Phys. (USA)*, v.26, N1, p.111–115, 1977 (with S.G.Mamayev, V.M.Frolov).

164. Spontaneous breaking of gauge symmetry in non-stationary isotropic metric. *Theor. Math. Phys. (USA)*, v.33, N1, p.869–876, 1977 (with A.A.Grib, V.M.Frolov).
165. On the difference in creation of particles with spin 0 and 1/2 in isotropic cosmologies. *Physics Letters*, v.55A, N7, p.389–390, 1976 (with V.M.Frolov, S.G.Mamayev).
166. Creation and scattering of particles by a non-stationary electromagnetic field in the canonical formalism. *Theor. Math. Phys. (USA)*, v.26, N2, p.148–155, 1976 (with A.A.Grib, V.M.Frolov).
167. Energy and pressure of created matter near the isotropic cosmological singularity. *Pis'ma v Astronom. Zhurnal*, v.2, N3, p.136–139, 1976 (with S.G.Mamayev, A.A.Starobinsky).
168. Creation of fermion pairs by non-stationary gravitational field. *Sov. J. Nucl. Phys. (USA)*, v.23, N5, p.592–597, 1976 (with S.G.Mamayev, V.M.Frolov).
169. Particle creation from vacuum near the homogeneous isotropic singularity. *Sov. Phys.-JETP*, v.43, N5, p.823–830, 1976 (with S.G.Mamayev, A.A.Starobinsky).
170. Particle creation from vacuum in homogeneous isotropic models of the Universe. *General Relativity and Gravitation*, v.7, N6, p.535–547, 1976 (with A.A.Grib, S.G.Mamayev).
171. Spontaneous symmetry breaking in the interaction of scalar field with an external vector field. *Theor. Math. Phys. (USA)*, v.29, N3, p.1131–1135, 1976 (with A.A.Grib, V.M.Frolov).
172. The properties of basis functions of expansions which are invariant under the group $O(4)$. *Sov. Phys.-Dokl. (USA)*, v.20, N1, p.29–30, 1975 (with B.A.Levitskii, V.M.Frolov).
173. The massive Goldstone particles in the model of milliweak CP-breaking. *Vestnik LGU*, N 4, p.14–19, 1975 (with A.A.Grib).
174. Fermion pair creation near the Friedmann singularity. *Pis'ma v Astronom. Zhurnal*, v.1, N 9, p.8–12, 1975 (with S.G.Mamayev, V.M.Frolov).
175. The inverse Noether theorem and the symmetry in physics. In: “The heuristic role of mathematics in physics and cosmology”. Editor: V.A.Krat, Leningrad, “Nauka”, 1975, p.78–95 (with A.M.Mostepanenko).
176. Particle creation from vacuum by non-stationary gravitational field in canonical formalism. *Theor. Math. Phys. (USA)* v.19, N1, p.349–361, 1974 (with A.A.Grib, B.A.Levitskii).

177. Particle creation from vacuum by homogeneous electric field with periodical time dependence. Sov. J. Nucl. Phys. (USA) v.19, N4, p.451–456, 1974 (with V.M.Frolov).
178. Particle creation from vacuum in non-stationary isotropic Universe. Izvestiya vuzov, fizika, N 12, p.79–84, 1974 (with A.A.Grib, S.G.Mamayev).
179. On interpretation of imaginary part of boson energy in strong external field. Vestnik LGU, N 16, p.137–139, 1973.
180. Broken symmetry in the K^0 -mesons theory and the Goldstone theorem. Sov. J. Nucl. Phys. (USA), v.15, N3, p.290–293, 1972 (with A.A.Grib).
181. Particle creation from vacuum by homogeneous electric field in canonical formalism. Theor. Math. Phys. (USA), v.13, N3, p.1207–1217, 1972 (with A.A.Grib, V.M.Frolov).
182. On the existence of atoms in n-dimensional space. Physics Letters, v.35A, N3, p.201–202, 1971 (with L.Gurevich).
183. Nonsymmetrical vacuum. Priroda, N 8, p.54–60, 1971 (with A.M.Mostepanenko).
184. Why our space has three dimensions? Priroda, N 9, p.42–48, 1970, (with A.M.Mostepanenko).