

2 ● Построена и исследована модель гетерогенной опухоли, показано, что в доминировании клеточной популяции большую роль играет клеточная подвижность. ● Проведено исследование зависимости устойчивости фронта растущей опухоли от величины индивидуальной клеточной подвижности, и также изучена роль взаимодействий между клетками опухоли и окружающими тканями в скорости роста опухоли и в устойчивости ее границы. ● Исследовано влияние пространственных неоднородностей и внешнего шума на устойчивость фронта растущей опухоли. ●

Аннотация

II. Основные результаты научных исследований:

27

15

(18).

- _____ :
- 1
 - 6
 - 4
 - 1
 - 2

- _____ :
- 4
 - “Landau” - 3
 - 1
 - 1
 - 1
 - 3

$s > 1$ AdS(d)

$S'(w, \epsilon)$ ϵ w

$S(\epsilon, w)$, , .

(. . . , . . .)

d-1-

$o(d-1, 2)$ d-1 , d > 3

AdS(d) ;

AdS(d) ;

AdS(d) (d > 4)

AdS(d)

AdS(3), AdS(4) AdS(5)

(. . .)

f. , f- f- f.

(... , ... , ...)
 11- 4-
 11- 4-
 11- 11-
 4- 10-

(...)
 (...)
 5-
 (...)

(... , ... , ...)
 N=0 N

(...)
 (m,n) (2,n)
 (m,n)
 m>2.
 (... , ... , ...)

$\alpha > 0.$

(. . .)

C

$2- 4-$

ec

$3+1-$

$\alpha = 1/4\pi$

(. . .)

$\$G^2\$$

(. . .)

/

(-)

$5 S^5$

$2- -$

$N=4$

(1-)

Сектор теории элементарных частиц
 Руководитель сектора д.ф.н. М.С. Боловьев

25

7

(12) .

_____ :
 - 1
 - 6
 - 4
 - 1

_____ :
 - 7
 - 1
 - 1
 - 1
 - 2

(. . .)

(' ') ,

(. . .)

(. . .)

(.)

13 (4

, 7-

).

(. . .)

G. Barnich,

d

(.)

sl(2|1).

(. . .)

Anne Taormina,

W-

sl(2).

()

(. . . , . . .)

/

N=4

(. . . , . . . , - . . .)

N=1*

(. . . , -)

/

(. . .)

(. . . ,)

-

-

-

(. . .)

Сектор физики высоких энергий
 Руководитель сектора д.ф.н. профессор Андрейев

13

7

;

(7

).

_____ :

- 1
- 5
- 2

_____ :

- 4
- 1

(. . . , . . .)

LHC.

(())

$K^*_0(1400)$ -

$K^*_0(892)$ -

(. . .)

(. . .)

(. . . , . . .)

Сектор взаимодействия радиоволн с плазмой
 Руководитель сектора академик РАН А.С. Буревич

12

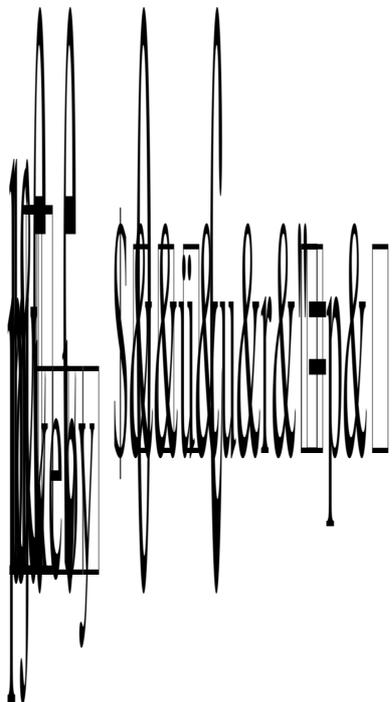
(35).

_____ :

- 1
- 4
- 3
- 2
- 1
- 6

_____ :

- 1
- 2
- 1
- 2
- 1
- 3
- 5



2003

()

150
100

(~1)

100

()

(. . . , . . . , . . .)

$10^7 - 10^8$

(. . . , . . . , . . .)

(. . .)

P~ 5-10 с),
(. . .)

(. . .)

(. . .) , P<10

PSR J0737-3039 A,B.

'B', 'A', 'B', 'A', 'B',
10³⁰, 0.1,
4·10⁻¹¹ / 2 }.
(. . .)

Группа академика В ●●нзбурга

12 ; (3
3
)
20 - ,

», 174, 21 2004 . («
9, 2004 .). : “Superconducting states of the cylinder
with a single vortex in magnetic field according to the Ginzburg-Landau theory”, “Central
European Journal of Physics”, 2004.

2004 .
« -
», «
» 2005 .
«
» «
», - « , 18-22 2004 .
(. . .) , . . .
(. . .)

, ,
- - 2004
, (. . .)
, (. . .)
, (. . .)
« . . . ».

(. . . , . . .)

« » — « »
30
(), « »

« »
()

« »
()

« »
()

« »
()

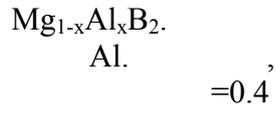
Сектор теории сверхпроводимости
Руководитель сектора ●●●●●проф ●●●●Максимов

4 17 ; (5)

— :
- 4
- 5
- 2

_____ :

- 1
- 2
- 1
- 1



(. . .) (. . .)

=10 . . . ,

(.)

(. . .)

NbC.

(.)

(. . .)

(. . .)

18 400 (),
Sc, Ti La

(. . .)

3-5

(. . .)

2-

3-5

(. . .)

II-VI IV

3d-
3 -

3d-

Mn

(. . .)

Сектор теории твёрдого тела
Руководитель сектора д.ф.н. Г.И. Давыдов

4

3

(3 ;)

_____ :

- 1
- 1
- 4
- 1
- 0
- 2

_____ :

- 2
- 1
- 1
- 1

· ,
 « - »

(. . .)

-

(. . .)

,
 ()

(. . .)

(' ') .

(... , ...)

Сектор теоретической биофизики
Руководитель сектора д.ф.н. профессор Пернавский

9 20

; (12

).

_____:

- 3
- 1
- 1
- 2

_____:

- 4
- 1
- 1
-
-

Chara

2

(),

(),

2112,

: 3223 N11N, N-

N

(1001),

(. . .)

(. . . , . . .)

*Bill
Kish
Kish*

(. . .)

(-)

« - ».

(. . .)

()

(. . .)

(. . .)

(. . .)

(« . . . »).

(. . .)

III Список работ, опубликованных и принятых в печать в иностранных журналах в 2004 году:

1. R.R. Metsaev, «Massive totally symmetric fields in AdS(d)», Phys. Lett. B590 (2004), 95 [arXiv: hep-th/0312297].
2. R.R. Metsaev, «Eleven dimensional supergravity in light cone gauge», Phys. Rev. D, [arXiv:hep-th/0410239].
3. A.I. Nikishov, «Scattering and Pair Production by a Potential Barrier in S-Matrix Formalism», in: I.Ya.Pomeranchuk and Physics at the Turn of the Cenchury, eds. A.Berkov, N.Narozhny, L.Okun, World Scientific, Singapore, 2003. (. . . 2004 .)
4. S.E. Konstein, A.G. Smirnov and I.V. Tyutin, «General form of deformation of Poisson superbracket», [arXiv:hep-th/0401023].
5. A.E. Shabad, «Black-Hole Approach to the singular Problem of Quantum Mechanics. II», [arXiv:hep-th/0403177].
6. A.E. Shabad, «Superradiation in scattering of a Dirac particle off a point-like nucleus with $Z > 137$ », [arXiv:hep-th/0407186].
7. M. A. Vasiliev, «Higher Spin Gauge Theories in Various Dimensions», Fortsch.Phys. 52 (2004) 702-717.
8. O. V. Shaynkman, I. Yu. Tipunin, M. A. Vasiliev, «Unfolded form of conformal equations in M dimensions and $o(M+2)$ -modules», Commun. Math. Phys., [arXiv:hep-th/0401086].
9. . . Matveev, M. A. Vasiliev, «On Dual Formulation for Higher Spin Gauge Fields in (A)dS(d)», Phys. Lett., [arXiv:hep-th/0410249].
10. M. A. Vasiliev, «Higher Spin Superalgebras in any Dimension and their representations», JHEP, [arXiv:hep-th/0404124].

11. M. A. Vasiliev and V. N. Zaikin, «On $Sp(2M)$ invariant Green functions», *Phys.Lett. B* 587 (2004) 225.
12. K. B. Alkalaev, O. V. Shaynkman and M. A. Vasiliev, «On the frame-like formulation of mixed-symmetry massless fields in (A)dS(d)», *Nucl. Phys. B* 692 (2004) 363.
13. I. A. Batalin and P. H. Damgaard, «Hamiltonian $N = 2$ Superfield Quantization», *Phys. Lett. B* 578 (2004) 223.
14. I. A. Batalin and K. Bering, «Hamiltonian Superfield Formalism with N Supercharges», *Nucl. Phys. B* 700 (2004) 439, [arXiv:hep-th/0401169].
15. A.A. Tseytlin, «Semiclassical strings and AdS/CFT», arXiv:hep-th/0409296, To appear in the proceedings of NATO Advanced Study Institute and EC Summer School on String Theory: From Gauge Interactions to Cosmology, Cargese, France, 7-19 Jun 2004.
16. S.A. Frolov, I.Y. Park and A.A. Tseytlin, «On one-loop correction to energy of spinning strings in $S(5)$ », arXiv:hep-th/0408187, to appear in *Nucl.Phys.* (2004)
17. A.A. Tseytlin, «Semiclassical strings in $AdS(5) \times S^5$ and scalar operators in $N = 4$ SYM theory», arXiv:hep-th/0407218, Based on talks given at Workshop on Continuous Advances in QCD 2004, Minneapolis, Minnesota, 13-16 May 2004, and at Annual International Conference on Strings, Theory and Applications (Strings 2004), Paris, France, 28 Jun - Jul 2, 2004.
18. A.A. Tseytlin, «Multispin string states and AdS/CFT spectroscopy», *Class. Quant. Grav.* 21, S1313 (2004), Contribution to proceedings of RTN Workshop on The Quantum Structure of Space-Time and the Geometric Nature of Fundamental Interactions, Copenhagen, Denmark, 15-20 Sep 2003.
19. M. Kruczenski and A.A. Tseytlin, «Semiclassical relativistic strings in S^5 and long coherent operators in $N=4$ SYM theory», *JHEP* {bf 0409}, 038 (2004) [arXiv:hep-th/0406189].
20. A.V.Ryzhov and A.A.Tseytlin, «Towards the exact dilatation operator of $N = 4$ super Yang-Mills theory», *Nucl. Phys. B* 698, 132 (2004), [arXiv:hep-th/0404215].
21. B.J. Stefanski and A.A. Tseytlin, «Large spin limits of AdS/CFT and generalized Landau-Lifshitz equations», *JHEP* 0405, 042 (2004), [arXiv:hep-th/0404133].
22. M. Kruczenski, A.V. Ryzhov and A.A. Tseytlin, «Large spin limit of $AdS(5) \times S^5$ string theory and low energy expansion of ferromagnetic spin chains», *Nucl. Phys. B* 692, 3 (2004), [arXiv:hep-th/0403120].
23. A.O. Barvinsky, D.V. Nesterov, Nonperturbative heat kernel and nonlocal effective action, preprint ESI-1444 (2004) (Erwin Schroedinger Int. Inst. for Mathematical Physics, Wien, Austria), hep-th/0402043.
24. G. Barnich, M. Grigoriev, A. Semikhatov and I. Tipunin, Parent field theory and unfolding in BRST first-quantized terms, submitted to *Commun. Math. Phys.*, hep-th/0406192.

25. G. Barnich and M. Grigoriev, Hamiltonian BRST and Batalin-Vilkovisky formalisms for second quantization of gauge theories, to be published in Commun. Math. Phys., hep-th/0310083.
26. G. Barnich, F. Brandt and M. Grigoriev, Local BRST cohomology and Seiberg-Witten maps in noncommutative Yang-Mills theory, Nucl. Phys. B677 (2004) 503, hep-th/0308092.
27. A. Marshakov, Strings, Integrable Systems, Geometry and Statistical Models, in: Proc. of the conference "Lie theory and its applications in physics" (eds. H. Doebner and V. Dobrev), World Scientific, 2004, hep-th/0401199.
28. V.A. Kazakov, A. Marshakov, J.A. Minahan, and K. Zarembo, Classical/quantum integrability in AdS/CFT, JHEP 0405 (2004) 024, hep-th/0402207.
29. V. Markov, A. Marshakov and A. Yung, Non-Abelian Vortices in $N=1^*$ Gauge Theory, submitted to Nucl. Phys. B, hep-th/0408235.
30. O.V. Shaynkman, I.Yu. Tipunin and M.A. Vasiliev, Unfolded form of conformal equations in M dimensions and $so(M+2)$ -modules, submitted to Commun. Math. Phys., hep-th/0401086.
31. A.M. Semikhatov, I.Yu. Tipunin, and A. Taormina, Higher-level Appell functions, modular transformations, and characters, to be published in Commun. Math. Physics (2004), math.QA/0311314.
32. B.L. Feigin and A.M. Semikhatov, $W^{(2)}_n$ algebras, Nucl. Phys. B698 (2004) 409-449.
33. J. Fuchs, S. Hwang, A.M. Semikhatov and I.Yu. Tipunin, Nonsemisimple fusion algebras and the Verlinde formula, Commun. Math. Phys. 247 (2004) 713--742.
34. M.A. Soloviev, On the generalized function calculus for infrared and ultraviolet singular quantum fields, J. Math. Phys., 45 (2004) 1944-1958.
35. S.E. Konstein, A.G. Smirnov and I.V. Tyutin, General form of deformation of Poisson superbracket, hep-th/0401023.
36. A.G. Smirnov, Fourier transformation of Sato's hyperfunctions, to be published in Adv. Math., math.FA/0401151.
37. R.C. Casana, V.Ya. Fainberg, J.T. Lunardi, B.M. Pimentel, and R.G. Teixeira, Massless DKP fields in Riemann-Cartan space-time, Class. Quant. Grav., 20 (2003) 2457.
38. S.P. Gavrillov, D.M. Gitman, A.A. Smirnov and B.L. Voronov, Dirac fermions in a magnetic-solenoid field, in "Focus on

Mathematical Physics Research" (ed. Ch.V. Benton), Nova, New York, 2004.

39. B.L. Altshuler, Calculation of the observed value of large mass hierarchy in modified RS model, hep-th/0410025.

40. B.L. Altshuler, Calculation of large mass hierarchy from number of extra dimensions, hep-th/0410114.

41. I.M.Dremin, A.V. Leonidov, On distribution of number of trades in different time windows in the stock market. cond-mat/0409179; Physica A (2005).

42. I.M.Dremin, V.A. Nechitailo, Independent pair parton interactions model of hadron interactions. hep-ph/0402286, Phys. Rev. D 70, 034005 (2004).

43. I.M.Dremin, Jet calculus problems of the perturbative quantum chromodynamics. Acta Phys. Polonica B 35 (2004) 417.

44. A.Alexandrov, A.Mironov, A.Morozov, Partition Functions of Matrix Models: First Special Functions of String Theory, Int.J.Mod.Phys. A19 (2004) 4127

45. . . . "On non-markovian nature of stock trading"; cond-mat/0403469; "APFA 2004", , 2003

46. I.M.Dremin, Multiplicity distributions and H_q moments. hep-ph/0404092; Proc. Moriond conf., 2004.

47. A.V. Gurevich, Yu.V. Medvedev, K.P. Zybin, "Thermal electrons and electric current generated by runaway breakdown effect", Phys.Lett A **321** (2004) 179-184.

48. E.D. Tereshenko, B.Z. Khudukon, A.V. Gurevich, K.P. Zybin, V.L. Frolov, E.N. Myasnikov, N.M. Muravieva, H.C. Carlson, "Radio tomography and scintillation studies of ionospheric electron density modification caused by a powerful HF-wave and magnetic zenith effect at mid-latitudes", Phys. Lett. A **325** (2004) 381-388.

49. A.V. Gurevich, A.N. Karashtin, A.P. Chubenko, L.M. Duncan, V.A. Ryabov, A.L. Shepetov, V.P. Antonova, S.V. Kryukov, V.V. Piskal, M.O. Ptitsyn, L.I. Vildanova, Yu.V. Shlyugaev, K.P. Zybin "Experimental evidence of giant electron-gamma bursts generated by extensive atmospheric showers in thunderclouds", Phys. Lett. A **325** (2004) 389-402.

50. A.V. Gurevich, K.P. Zybin, "High energy cosmic ray particles and the most powerful discharges in thunderstorm atmosphere", Phys. Lett. A **329** (2004) 341-347.

51. A.V. Gurevich, Yu.V. Medvedev, K.P. Zybin, "New type discharge generated in thunderclouds by joint action of runaway breakdown and extensive atmospheric shower", Phys. Lett. A **329** (2004) 348-361.

52. V.S. Beskin, A.D. Tchekhovskoy, "Two-dimensional structure of thin discs' internal areas and its observational consequences", Astron. Astrophys. (in press).

53. V.S. Beskin, N.K. Zakamska, H. Sol, "Radiation drag effects on magnetically-dominated flows around compact objects", MNRAS, **347**, 587-600 (2004).

54. Ya.N. Istomin, F.L. Soloviev, "Interaction of a shock from a supernova and another star in a binary system", *Astron. Astrophys.* (in press).
55. Ya.N. Istomin "Angular momentum of massive black holes", *New Astronomy*, **10/2**, 157-161, 2004.
56. Ya.N. Istomin, "Origin of Gaint Radio Pulses", *Yong Neutron Stars and Their Environments*, Sydney, Australia, 369-373, 2004.
57. Ya.N. Istomin, "On the Nature of Magnetars", *Yong Neutron Stars and Their Environments*, Sydney, Australia, 265-368, 2004.
58. Ya.N. Istomin, A.P. Smirnov, D.A. Pak, "Can a slow rotating neutron star be radio pulsar", *MNRAS*, **374**, 1365-1372, 2004.
59. Ginzburg V.L. *About Science, Myself and Others*. Institute of Physics Publishing, Bristol and Philadelphia, 2004-2005, 550 pp.
60. Ginzburg V.L., Andryshin E.A. *Superconductivity*. Revised Edition, World Scientific, 2004, 92 pp.
61. Dogiel V.A., Gurevich F.V., Istomin Ya.N., Zybin K.P. *Cosmic Ray Acceleration Insid Molecular Cloud*, *Astrophysics and Space Science*, in press, 2004.
62. Iydin A.F., Bohringer H., Dogiel V., Morfill G. *Gamma-ray line emission from galaxy clusters*. *Astronomy and Astrophysics*, v.413, pp.817-825, 2004.
63. Zharkov G.F. *Superconducting states of the cylinder with a single vortex in magnetic field according to the Ginzburg-Landau theory*. *Central European Journal of Physics*, in press, 2004.
64. Kalenkov M.S., Fogelstrom M., Barash Yu.S. *Two regimes for effects of surface disorder on the zero-bias conductance peak of tunnel junctions involving d-wave superconductors* *Phys.Rev.*, B70, 184505, 2004 (9 pages).
65. Galaktionov A.V., Golubev D.S., Zaikin A.D. *Statistics of current fluctuations and elec-*

IV Список работ, опубликованных и принятых в печать в российских журналах в 2004 году:

1. . . . , « » (.).
2. . . . , «Photon Propagation in a Supercritical Magnetic Field», , 125, (2004), 210-221.
3. . . . , , « ».
4. . . . , «Scattering and Pair Production by a Potential Barrier», 67 (2004) 1503-1511.
5. . . . , «Eleven dimensional supergravity in light cone gauge», /08/04
6. . . . , (2004), 75 , www.tamm.lpi.ru/selected/xtradim.html. (. . . .).
7. A.O. Barvinsky, Cosmological constant problem and long-distance modifications of Einstein theory, 10 p., QUARKS-2004, , 2004, hep-th/0409144.
8. . . . , , ,
9. . . . , , ,
10. . . . , , , hep-th/0406056.
11. . . . , ,
12. . . . , , , 140, (2004), 44-52.
13. I.M.Dremin, QCD and models on multiplicities in e^+e^- and $p\bar{p}$ interactions. (2005).

14. I.M.Dremin, Wavelets: mathematics and applications. hep-ph/0403206; 6 (March 2005).
15. I.M.Dremin, QCD and hybrid NBD on oscillating moments of multiplicity distributions in lepton- and hadron-initiated reactions. hep-ph/0401013, 6 (Jan. 2005) 1.
16. . . .
17. . . . , "Color Glass Condensate in High Energy QCD"; hep-ph/0409175; "Quarks 2004", , 2004.
18. I.M.Dremin, O.V. Ivanov, V.A. Nechitailo, Wavelet-analysis of signals and noise. Proc. of conference on "Signals and noise in semiconductors", MEI.
19. I.M.Dremin, O.V. Ivanov, V.A. Nechitailo, Wavelets. Plenary talk at OYaF Session, ITEP, April 2004.
20. . . . , . . . , " , 74, 8 (2004) 74–80.
21. . . . , . . . , " , 125, 6 (2004) 1269-1275
22. . . . , . . . " , 98, 1, (2004) 1-13.
23. . . . , . . . , . . . " , 30, 11 (2004) 1-11.
24. . . . , . . . , " , 30, 10, (2004) 754-763.
25. . . . , . . . , " , () .
26. . . . " , () .
27. . . .) , " (XXI - , - 2003. , 174, N 11, 2004, .1240 - 1255.
28. . . . , . . . , . . . , , N 6, .25-31, 2004.
29. . . . , . . . , . . . , " , 18-22 2004 , .333-334, 2004
30. . . . , , 174, N 9, .1012-1017, 2004.

31. . . . , . . . , . . . « . . . , . . . , . . . » , . . . » , 79, 425 (2004).
32. . . . , . . . , . . . « . . . » , 79, 406 (2004).
33. . . . , « $Mg_{1-x}Al_xB_2$ » , 79, 597 (2004).
34. . . . , . . . , . . . « NbC » , 80, 623 (2004).
35. . . . « . . . » , 174, 1026 (2004).
36. . . . , . . . « . . . » , 174, 1145 (2004).
37. . . . , . . . , . . . , " . . . " , (. . .) .
38. . . . , . . . , « . . . »
39. . . . , . . . , . . . , . . . - . . .
40. . . . 10, 2. (. . .) - , 2003, . 308-319.
41. . . . , . . . 10, 2. (. . .) - , 2003, . 320-329.
42. . . . , . . . , . . . 11- " , 2004, . 222.
43. . . . , . . . , . . . " , 2004, . 364-365.

44. III «...», 2004. 1, .345-346.
45. «...», 2004, .16(4), .41-46.
46. «...», 2004, .1 2, .47-52.
47. «...», 1, 2004, .37-47.
48. «...»
49. «...», I- I .21-34.
50. «...», III- , 2004.
51. «...», I, 1, .114-130, 2004.
52. («...»), .184-207, 2004,
53. «...», 2004 . 17 . -
54. («...»), «...»
55. («...» : «...»).

V. Участие в конференциях:

1. «...», 2004 . . . (, 6-).

2. Quarks 2004, [http://www.maths.gla.ac.uk/~msh/Quarks2004/](#), 2004, . . . ().
3. Lectures on higher spin gauge theory, 5, [http://www.maths.gla.ac.uk/~msh/HS2004/](#), 2004, . . .
4. Higher Spin Gauge Theories in Any Dimension», «Strings 2004», [http://www.maths.gla.ac.uk/~msh/HS2004/](#), 2004, . . . ().
5. RTN Winter School on Strings, Supergravity and Gauge Theories, Barcelona 12-16 January, 2004, . . . ().
6. Strings and Cosmology Conference, Texas A&M University, College Station, USA, March 14-17, 2004, . . . ().
7. Strings, Gauge Fields and Duality, University of Wales Swansea, U.K., 24th-27th March 2004, . . . ().
8. Large Spin Limit of Strings in AdS5 x S5 and Effective Actions for Spin Chains, «The Status of M-theory conference, Univ. of Michigan, Ann Arbor, April 6-7, 2004, . . . (

18. International conference GLANNON--2004, Rencontres mathématiques de Glanon, France, July 2004, . . . , 2 : "Gauge field theories from BRST quantization".
19. International Workshop "Quantum field theory and integrable systems" Peyresq, France, June 2004, . . . , : "Seiberg-Witten theory and integrable systems"
20. International Conference "Complex geometry and string theory", Nagoya, Japan, December 2004, . . . , : "Complex curves in string theory".
21. International School on Subnuclear Physics Standard Model and Beyond, 2004. . . : "Nonperturbative Heat Kernel and Nonlocal Effective Action".
22. VI - , 22 - 3 , . . . ().
23. IV - , 2-10 , . . . ().
24. "Recent Developments in String/M-Theory and Field Theory", (), 23-27 , . . . ().
25. "Quantum particles, String and Fields. III", (), 13-19 , . . . ().
26. 'XXXIXth RENCONTRES DE MORIOND: QCD And High Energy Hadronic Interactions', 21 -5 , . . . ().
27. 28- , 07-11 , . . . , . . . ().
28. (-2004) " , 3-10 , . . . , . . . ().
29. «Black Hole Astrophysics 2004», Pohang, S. Korea, Jan 13-16, . . . (2).
30. Gamov Memorial International Conference, Odessa, Ukraine, August 8-14, . . . ().
31. RF Ionospheric Interactions Workshop, Santa Fe, New Mexico, 18-21 April, . . . , . . . (3).
32. Frontiers of Nonlinear Physics, Nizhny Novgorod, July 5-12, . . . ().
33. Effects of Artificial Action on the Earth Ionosphere by Powerful Radio Waves, VI International Suzdal URSI Symposium, Moscow, October 18-21, . . . , . . . , . . . (11).

34. P.A. Cherenkov and Modern Physics, Moscow -Troitsk, June 22-25, . . . (2 . . .).
35. International Workshop "Many-Particle Effects in Radiation Physics", Belgorod, September 7–10, . . . (. . .).
35. International School-Seminar Cosmology, Extragalactic Astronomy, and Applied Astrophysics, Zvenigorod, March 1-4, . . . , . . . , . . . , . . . (4 . . .).
36. 35th COSPAR Scientific Assambly, Paris, July 18-25, . . . (4 . . .).
37. . . . - . . . , 30.05. - 05.06, . . . - . . . , . . . , . . . (. . .).
38. . . . " . . . " . . . - . . . , . . . , . . . (. . . , . . .).
39. SPIE Symposium on Fluctuations and Noize, Maspalomos, Grand Canaria, Spain, May, . . . (. . .).
40. . . . - . . . « . . . », . . . ,22-28 . . . , . . . (. . .).
41. XI . . . « . . . », . . . 11-17 . . . (. . .).
42. . . . «ACCMS-2», . . . , 14-16 . . . , . . . (. . .).
43. . . . « . . . - . . . 18-22 . . . 2004», . . . (. . .).
44. The 7-th International Conference on the Physics of X-ray Multilayer Structures", March 7-11, Resutsu Resort, Sapporo, Japan, . . . (. . .).
45. XV International Synchrotron Radiation Conference, Novosibirsk, Russia, July 19-23, . . . (. . .).
46. VIII . . . - . . . « . . . » . . . , . . . (2 . . .).
47. Nanostructures: Physics and Technology 2004, St-Petersburg, 21-25 June,
48. XI . . . , 26 – 31 . . . « . . . , . . . , . . . », . . . (. . . « . . . »). . . . »).

49. » , 4-10 « , . . . (; « »).
50. III – , 24-29 , . . . (; « - , »).
51. I – « , - , ,16-18 , . . . (« »).
52. - . « » , . . . (« »).
53. « » , 4-10 (« »).
54. -31 « , , » 
55. « -2004» , 29 -7 , . . . (« »), . . . (« »)
56. III  24-29 , . . . (2 « » « »)
57. « -2004», , 1-7 , . . . (« »).