CURRICULUM VITAE

1. Personal Data

Name	**Yakov M. Shnir**
Date and Place of Birth	10.09.1959, in Minsk, Republic of Belarus
Nationality	Belarus
Spoken languages	Russian (native), English (fluent)
	German (fluent), French (advanced) and Belarusian (fluent)
Permanent address	LTP,JINR
	141980 Dubna, Moscow Region, Russia
	e-mail: shnir@maths.tcd.ie

2. Education and Physics Employment History

EDUCATION

2006	Doctor of Sciences (Habilitation) in Theoretical Physics Academy of Sciences of Belarus. Thesis: *Multimonopole configurations and nonperturbative effects in field dynamics*
1988	Ph.D. in Theoretical Physics from Institute of Physics, Academy of Sciences of Belarus Thesis: *Effects of Space Symmetry Violation in a Magnetic Charge Theory*
1981	M.S. *cum laude* from State University of Belarus Department of Physics, Minsk, Belarus
1976	Graduated *cum laude* from the secondary school

MAIN RESEARCH FIELDS

- Topological and Non-Topological Solitons
- Gravity in four dimensions, Black Holes, Wormholes
- Optical NLS solitons, Bose-Einstein condensate

PROFESSIONAL EXPERIENCE

2013 - present	Leading Research Scientist, LTP, JINR
2012 - present	Full Professor, State University of Belarus
2010 - 2012	Lecturer, Dept of Mathematics, Durham University (UK)
2009 - 2010	Research Associate, National University of Ireland, Maynooth
2007 - 2008	Lecturer, School of Mathematics, Trinity College Dublin (Ireland)
2002 - 2007	Lecturer, Department of Physics, University of Oldenburg (Germany)
1998 - 2002	Research Associate (BAT IIa/Ib), Institute for Theoretical Physics University of Cologne (Germany)
1997 - 1998	Royal Society/NATO Postdoctoral Fellow DAMTP, University of Cambridge (United Kingdom)
1995 - 1997	Alexander von Humboldt Postdoctoral Fellow Department of Mathematics, TU Berlin (Germany)
1992 - 1995	Associate Professor, Department of Theoretical Physics, State University of Belarus

VISITING APPOINTMENTS

2019	LANL, Center for Nonlinear Studies, USA
2017,2019	Keio University, Tokyo, Japan
2016	Instituto de Fisica de Sao Carlos, Universidade de Sao Paulo, Brazil (FAPESP Visiting Professor)
2013,2014	Department of Particle Physics, Tel Aviv University, Israel
2012	University of Vilnius, Lithuania (BMU-MID EU Visiting Professor)
2011	Physics Department, State University of New York, Stony Brook, USA
2009-2010	Institute of Physics, Jagiellonian University Krakow, Poland (ToK Visiting Professor)
2006-2011	National University of Ireland, Maynooth, Ireland (frequent stays duration of 1-4 weeks)
2001-2011	Service de Physique Théorique, CEA-Saclay, France (frequent stays duration of 1-10 weeks)
1997	University of Pisa, Physics Department, Italy
1995-2002	University of Bergen, Department of Physics, Norway (frequent stays duration of 1-8 weeks)
1994	Advanced Studies Institute, STP, Dublin, Ireland
1991-2004	International Centre for Theoretical Physics, Trieste, Italy

STUDENT SUPERVISION

Supervised two PhD studies, currently supervising two PhD students

TEACHING EXPERIENCE

2017	Topological Solitons and Integrability (24 hours) Department of Physics, University of Oldenburg, Germany
2016	Lecture Course on Solitons in Classical Field Theory (28 hours) University of Sao Paulo, Brazil
2013	Lecture Course on Solitons and Non-linear Phenomena (24 hours) University of Vilnius, Lithuania
2011 - 2012	Thermodynamics and Statistical Physics (72 hours), BSU Minsk
2010 - 2011	Tutorials in Single Maths, Linear Algebra II, Analysis in Many Variables Numerical Analysis and Mathematical Physics, University of Durham, UK
2009	Lecture Course on Solitons in QFT (60 hours) Jagiellonian University, Krakow, Poland
2007 - 2008	Lecture Course on Classical Mechanics (72 hours) and Lecture Course on Classical Solitons (32 hours) Trinity College Dublin, Ireland
2006 - 2021	Lecture Course on Group Theory (30 hours) and Lecture Course on Differential Geometry (32 hours) Department of Theoretical Physics, State University of Belarus
2003 - 2006	Lecture Course on Numerical Analysis (28 hours) at the Department of Physics, University of Oldenburg, Germany
2002 - 2003	Lecture Course on Quantum Field Theory (64 hours) Department of Physics, University of Oldenburg, Germany
1992 - 1995	Lecture Course on Quantum Field Theory (72 hours)
2006 - 2021	at the Department of Theoretical Physics, State University of Belarus.

LANGUAGES AND SYSTEMS PROFICIENCY:

Languages:	Python, Fortran 77/90; C/C++ and other;
Operating Systems:	UNIX, LINUX, MSDOS, MS Windows;
Application and QA Systems:	Mathematica, Maple, MATLAB, REDUCE, TEX, LATEX etc; Basic knowledge of UNIX/LINUX system administration; Experience in parallel programming with MPI.

EXISTING RESEARCH LINKS AND COLLABORATIONS:

- Higher dimensional gravitating configurations and black holes – DIAS, Dublin, Ireland (D.H. Tchrakian), University of Oldenburg, Germany (J. Kunz and B. Kleihaus), University of Tours, France (P. Forgacs, A. Niemi, M.Chernodub and M. Volkov); São Paulo University, Brazil (L. Ferreira and B. Hartmann); University of Thessaloniki, Greece (Th. Ioannidou) University of Aveiro, Portugal (C. Herdeiro and E. Radu)
- QCD and Lattice simulations – SphT Saclay, France (S. Nonnenmacher), Stony Brook University, USA (E. Shuryak)
- Classical and quantum theory of solitons – DAMTP, University of Cambridge, UK (N. Manton), University of Pisa, Italy (S. Bolognese and K. Konishi), University of Leeds, UK (D.Harland and M.Speight), University of Durham, UK (P.Suttclife P.Dorey and W.Zakrzewski); University of Jena, Germany (A.Wipf), Jagiellonian University Krakow, Poland (T. Romanczukiewicz and A.Wereszczynski)
- Non-linear Phenomena in Applied Physics – Tel Aviv University (B.Malomed and G.Slepyan); University of Massachusetts at Amherst, USA (P. Kevrekidis); University of Vilnius, Lithuania (A.Acus)

OTHER ACTIVITIES

- Reviewer of the projects of the Agence Nationale de la Recherche (France) and National Science and Technology Commission (Chile)
- Referee of *Europhysics Letters*, *Nonlinearity*, *Nuclear Physics B*,*Physica Scripta*, *Physica D*, *Physics Letters B*, *Chaos, Solitons & Fractals*, *Classical and Quantum Gravity*, *Journal of Physics A*, *Phys Rev.D*, *Phys. Rev. Lett* and other journals.
- Applied Optics Project Consulting for SICC GmbH (Berlin).
- Member of the Organizing Committees of International Workshops (SQS'2019, QS-99 etc)

3. Fellowships and Awards

2021	JINR first prize
2016-2021	Research grant of Ministry of Science and Higher Education, Russia
2016	FAPESP research fellowship, Sao Carlos, Brazil
2015-2018	DFG research programm of collaboration Oldenburg-Hannover-Dubna
2014-2021	Heisenberg-Landau JINR programm (PI)
2013-2016	Alexander von Humboldt Institute Linkage programm (PI)
2012-2013	BMU-MID Erasmus EU research fellowships
1997 - 1998	NATO Postdoctoral Fellowship administrated by Royal Society
1995 - 1997	Alexander von Humboldt Postdoctoral Fellowship

4. Membership of Societies

- Deutsche Physicalische Gesellschaft (from 2005)

5. Selected conferences recently attended (invited talks)

1. SIG IX (Solitons at Work workshop) (Faculty of Physics UJ Krakow, Krakow, Poland, 2021, June 21 - July 2)
2. Experimental Tests and Signatures of Modified and Quantum Gravity (Bad Honnef, Germany, 2021, 1-5 February);
3. Topological Solitons, Nonperturbative Gauge Dynamics and Confinement (Pisa, Italy, 2019, 2-5 July);
4. 32th International Colloquium on Group Theoretical Methods in Physics (Prague, Czech Republic, 2018, 9-13 July);
5. Low Energy Effective Dynamics of Solitons (Leeds, UK, 2018, July 1-5);
6. 20th International Seminar "Quarks 2018" (Valday, Russia, 2018, May 26-31);
7. Topological Science Symposium (Tokyo, 2017, 21-23 November);
8. 641st WE-Heraeus-Seminar "Do Black Holes exist?" (Bad Honnef, Germany, 2017, 24-28 April);

6. Selected invited seminars and lectures recently given

2021, London, UK	*Multicomponent boson stars and other soliton stars* Online talk given at online network programm ""Current trends in gravitat
2020, JINR, Russia	Soliton stars, boson constellations and spinning black holes with hairs A talk given at BLTP, Seminar of Theme Modern Mathematical Physics
2019, LANL, USA	*Skyrmions: from condensed matter to hairy black holes* A talk given at the Center for Non-Linear Studies, LANL
2019, Boulder, USA	*Solitons in classical scalar field theory* A talk given at the Department of Physics, University of Colorado
2018, Stony Brook, USA	*Multisoliton solutions of the Skyrme-Maxwell model* A talk given at Nuclear Theory Group Seminar, SUNY at Stony Brook
2018, Munich, Germany	*Hairy Black holes in Einstein-Skyrme theory* A talk given at Faculty of Physics, Ludwig-Maximilians-University
2018, Tel Aviv, Israel	*Gauged Merons* A talk given at School of Physics and Astronomy Seminar, TAU
2017, Tokyo, Japan	*Rational maps and construction of solitons* A talk given at the Physics Department, Tokyo University of Sciences
2017, Bochum, Germany	*Self-dual solitons in the Skyrme model* A talk given at the Institut für Theoretische Physik II
2016, Sao Pauolo, Brazil	*Fractal dynamics of kinks in 1+1 dimensions* A talk given at ABC Federal University, Sao Paulo
2016, Phoenix, USA	*Construction of Monopoles and Skyrmions* A talk given at Arizona State University, Department of Physics
2016, Aveiro, Portugal	*Hairy black holes in asymptotically AdS_4 spacetime* A talk given at the Physics Department, University of Aveiro

LIST OF PUBLICATIONS

Books

1. **Ya.M. Shnir** - Topological and Non-Topological Solitons; *Cambridge University Press, Cambridge Monographs in Mathematical Physics, UK, 2018.*

2. **Ya.M. Shnir** - Magnetic Monopoles; *Springer, Texts and Monographs in Physics, Berlin-Heidelberg-New York, 2005, 2nd Ed. 2010.*

3. L.M. Barkovsky, I.D. Feranchuk and **Ya.M. Shnir** (Eds.) - Etudes on Theoretical Physics (*Collection of works dedicated to 65th anniversary of the Department of Theoretical Physics, University of Belarus*); *Singapore, World Scientific, 2004.*

4. V.G. Kiselev, **Ya.M. Shnir** and A.Ya. Tregubovich - Introduction to Quantum Field Theory; *Gordon and Breach Co., (2000).*

5. A.O. Barut, I.D. Feranchuk, **Ya.M. Shnir** and L.M. Tomilchik (Eds.) - Quantum Systems: New Trends and Methods; *Proceedings of the International Workshop on Quantum Systems, Minsk, Belarus, May 23-29, 1994. - Singapore, World Scientific, (1995).*

Publication in Refereed Journals

1. C. A. R. Herdeiro, I. Perapechka, E. Radu and **Y. Shnir** - Spinning gauged boson and Dirac stars: a comparative study, *Phys. Lett.* ***B 824*** *(2022) (7 pp)* ;

2. Y. Akagi, Y. Amari, S. B. Gudnason, M. Nitta and **Y. Shnir** - 'Fractional Skyrmion molecules in a CP^{N-1} model, JHEP, (2021) 194 (19 pp) [arXiv:2107.13777 [hep-th]];

3. P. Dorey, A. Gorina, I. Perapechka, T. Romańczukiewicz and **Y. Shnir** - Resonance structures in kink-antikink collisions in a deformed sine-Gordon model, JHEP, **145** (2021) 145 (38 pp);

4. Y. Akagi, Y. Amari, N. Sawado and **Y. Shnir** - Isolated skyrmions in the CP^2 nonlinear sigma model with a Dzyaloshinskii-Moriya type interaction, *Phys. Rev. D* ***103*** *(2021) no.6, 065008 (13 pp)*;

5. **Y. Shnir** - Chains of Interacting Solitons, *Symmetry* ***13*** *(2021) no.2, 284 (22 pp)*

6. C. A. R. Herdeiro, J. Kunz, I. Perapechka, E. Radu and **Y. Shnir** - Chains of Boson Stars, *Phys. Rev. D* ***103*** *(2021) no.6, 065009 (16 pp)*;

7. V. Loiko, I. Perapechka and **Y. Shnir** - Q-chains in the $U(1)$ gauged Friedberg-Lee-Sirlin model, *EPL* ***133*** *(2021) no.4, 41001 (9 pp)*;

8. C. A. R. Herdeiro, J. Kunz, I. Perapechka, E. Radu and **Y. Shnir** - Multipolar boson stars: macroscopic Bose-Einstein condensates akin to hydrogen orbitals, *Phys. Lett. B* ***812*** *(2021) 136027 (5 pp)*;

9. **Y. Shnir** - Black holes with Skyrmion-anti-Skyrmion hairs, *Phys. Lett. B* ***810*** *(2020) 135847 (7 pp)*;

10. I. Perapechka and **Y. Shnir** - Kinks bounded by fermions, *Phys. Rev. D* ***101*** *(2020) no.2, 021701 (5 pp)*;

11. P. Dorey, T. Romanczukiewicz and **Y. Shnir** - Staccato radiation from the decay of large amplitude oscillons, *Phys. Lett. B* ***806*** *(2020) 135497 (6 pp)*;

12. V. Klimashonok, I. Perapechka and **Y. Shnir** - Fermions on kinks revisited, *Phys. Rev. D* ***100*** *(2019) no.10, 105003 (9 pp)*;

13. C. Herdeiro, I. Perapechka, E. Radu and **Y. Shnir** - Asymptotically flat spinning scalar, Dirac and Proca stars, *Phys. Lett. B* **797** *(2019) 134845 (8 pp)*; arXiv:1906.05386 [gr-qc].

14. V. Loiko and **Y. Shnir** - Q-balls in the $U(1)$ gauged Friedberg-Lee-Sirlin model, *Phys. Lett. B* **797** *(2019) 134810 (7 pp)*; [arXiv:1906.01943 [hep-th]]

15. J. Kunz, I. Perapechka and **Y. Shnir** - Kerr black holes with synchronised scalar hair and boson stars in the Einstein-Friedberg-Lee-Sirlin model, *JHEP* **1907** *(2019) 109 (23 pp)*; [arXiv:1904.13379 [gr-qc]]

16. J. Kunz, I. Perapechka and **Y. Shnir** - Kerr black holes with parity-odd scalar hair, *Phys. Rev. D* **100** *(2019) no.7* (10 pp) ; arXiv:1904.07630 [gr-qc].

17. I. Perapechka and **Y. Shnir** - Fermion exchange interaction between magnetic Skyrmions, *Phys. Rev. D* **99** *(2019) no.12, 125001 (7 pp)*; [arXiv:1901.06925 [hep-th]]

18. C. Herdeiro, I. Perapechka, E. Radu and **Y. Shnir** - Gravitating solitons and black holes with synchronised hair in the four dimensional O(3) sigma-model, *JHEP* **1902** *(2019) 111 (25 pp)*; [arXiv:1811.11799 [gr-qc]]

19. I. Perapechka, N. Sawado and **Y. Shnir** - Soliton solutions of the fermion-Skyrmion system in (2+1) dimensions, *JHEP* **1810** *(2018) 081 (19 pp)*; [arXiv:1808.07787 [hep-th]]

20. C. Herdeiro, I. Perapechka, E. Radu and **Y. Shnir** - Skyrmions around Kerr black holes and spinning BHs with Skyrme hair, *JHEP* **1810** *(2018) 119 (21 pp)*; arXiv:1808.05388 [gr-qc]

21. V. Loiko, I. Perapechka and **Y. Shnir** - Q-balls without a potential, *Phys. Rev. D* **98** *(2018) no.3-4 (9 pp)*; arXiv:1805.11929 [hep-th]

22. A. Samoilenka and **Y. Shnir** - Magnetic Hopfions in the Faddeev-Skyrme-Maxwell model, *Phys. Rev. D* **97** *(2018) no.12, 125014 (13 pp)*; arXiv:1806.00604 [hep-th]

23. I. Perapechka and **Y. Shnir** - $SU(2)$ Yang-Mills solitons in R^2 gravity, *Phys. Lett. B* **780** *(2018) 152-158*; arXiv:1801.07626 [hep-th]

24. T. Romanczukiewicz and **Ya.M. Shnir** - Oscillons in the presence of external potential, *JHEP* **1801** *(2018) 101 (24 pp)*; arXiv:1706.09234 [hep-th]

25. A. Samoilenka and **Y. Shnir** - Gauged Merons, *Phys. Rev. D* **97** *(2018) no.4, 045004 (7 pp)*; arXiv:1712.00161 [hep-th]

26. I. Perapechka and **Y. Shnir** - Spinning gravitating Skyrmions in a generalized Einstein-Skyrme model, *Phys. Rev. D* **96** *(2017) no.12, 125006 (13 pp)*; arXiv:1710.06334 [hep-th]

27. A. Samoilenka and **Y. Shnir** - Fractional Hopfions in the Faddeev-Skyrme model with a symmetry breaking potential, *JHEP* **1709** *(2017) 029 (25 pp)*; arXiv:1707.06608 [hep-th]

28. L. A. Ferreira and **Y. Shnir** - Exact Self-Dual Skyrmions, *Phys. Lett. B* **772** *(2017) 621-627*; arXiv:1704.04807 [hep-th]

29. I. Perapechka and **Y. Shnir** - Crystal structures in generalized Skyrme model, *Phys. Rev. D* **96** *(2017) no.4, 045013 (13 pp)*; arXiv:1703.10673 [hep-th]

30. I. Perapechka and **Y. Shnir** - Generalized Skyrmions and hairy black holes in asymptotically AdS_4 spacetime, *Phys. Rev. D* **95** *(2017) no.2, 025024 (15 pp)*; arXiv:1612.01914 [hep-th]

31. A. Samoilenka and **Y. Shnir** - Gauged Baby Skyrme Model with Chern-Simons term, *Phys. Rev. D* **95** *(2017) no.4, 045002 (14 pp)*; arXiv:1610.01300 [hep-th]

32. C. Adam, O. Kichakova, **Y. Shnir** and A. Wereszczynski - Hairy black holes in the general Skyrme model, *Phys. Rev. D* **94** *(2016) 024060 (11 pp)*

33. A. Samoilenka and **Y. Shnir** - Gauged multisoliton baby Skyrme model, *Phys. Rev. D* **93** *(2016) 065018 (9 pp)*

34. O. Kichakova, J. Kunz, E. Radu and **Y. Shnir** - Static black holes with axial symmetry in asymptotically AdS_4 spacetime, *Phys. Rev. D* **93** *(2016) 044037 (16 pp)*; arXiv:1510.08935

35. **Ya.M. Shnir** - Gravitating Hopfions,*JETP,* **148** *(2015) 1130-1136*

36. P. Dorey, A. Halavanau, J. Mercer, T. Romanczukiewicz and **Ya.M. Shnir** - Boundary scattering in the ϕ^4 model, *JHEP* **1705** *(2017) 107 (24 pp)*; arXiv:1508.02329 [hep-th]

37. **Ya.M. Shnir** - Gravitating sphalerons in the Skyrme model, *Phys. Rev. D* **92** *(2015) 085039 (10 pp)*

38. **Ya.M. Shnir**, - Fractional non-topological quantization of the magnetic fluxes in the U(1) gauged planar Skyrme model, *Phys. Part. Nucl. Lett.* **12** *(2015) 4, 743-753*

39. **Ya.M. Shnir** and G. Zhilin - G_2 monopoles, *Phys. Rev. D* **92** *(2015) 045025 (7 pp)*

40. A. Acus, E. Norvaisas and **Ya.M. Shnir**, - Interaction of hopfions of charge 1 and 2 from product ansatz, *Europhys. Lett.* ***110*** *(2015) 10007 (9 pp)*; arXiv:1503.08027 [nlin.PS]

41. O. Kichakova, J. Kunz, E. Radu and **Ya.M. Shnir** - Thermodynamic properties of asymptotically anti-de Sitter black holes in d=4 Einstein-Yang-Mills theory, *Phys. Lett. B747 (2015) 205-211*; arXiv:1503.01268 [hep-th]

42. Y.V. Kartashov, B.A. Malomed, **Y. Shnir** and L. Torner - Twisted toroidal vortex-solitons in inhomogeneous media with repulsive nonlinearity, *Phys. Rev. Lett.* ***113*** *(2014) 264101 (5 pp)*; arXiv:1412.2001 [nlin.PS].

43. O. Kichakova, J. Kunz, E. Radu and **Ya.M. Shnir** - Non-Abelian fields in AdS_4 spacetime: axially symmetric, composite configurations, *Phys. Rev. D90 (2014) 124012 (24 pp)*; arXiv:1409.1894

44. **Ya.M. Shnir** and G. Zhilin - Gauged Hofions, *Phys. Rev. D* **89** *(2014) 085021 (8 pp)*;

45. B. Malomed, **Ya.M. Shnir** and G. Zhilin - Spontaneous symmetry breaking in dual-core baby-Skyrmion systems, *Phys. Rev. D* **89** *(2014) 105010 (16 pp)*; arXiv:1402.0683 [hep-th]

46. A. Acus, E. Norvaisas and **Ya.M. Shnir**, - Hopfions interaction from the viewpoint of the product ansatz, *Phys.Lett. B733 (2014) 15-20*; arXiv:1401.6355 [hep-th]

47. A. Halavanau and **Ya.M. Shnir** - Isorotating Baby Skyrmions, *Phys. Rev. D* **88** *(2013) 085028 (8 pp)*; arXiv:1309.4318 [hep-th]

48. **Ya.M. Shnir** and G. Zhilin - Sphaleron solutions of the Skyrme model from Yang Mills holonomy, *Phys. Lett. B 723 (2013) 236-241*

49. D. Harland, J. Jaykka, **Y. Shnir** and M. Speight - Isospinning hopfions, *J. Phys. A: Math. Theor.* **46** *(2013) 225402 (18pp); arXiv:1301.2923 [hep-th]* .

50. O. Kichakova, J. Kunz, E. Radu and **Ya.M. Shnir** - Axially symmetric Yang-Mills-Higgs solutions in AdS spacetime, *Phys. Rev. D86 (2012) 104065 (10 pp)*; arXiv:1208.4825

51. A. Halavanau, T. Romanczukiewicz and **Ya.M. Shnir** - Resonance structures in coupled two-component ϕ^4 model, *Phys. Rev. vol D86 (2012) 085027 (19 pp)*; arXiv:1206.4471v1 [hep-th]

52. A. Acus, E. Norvaisas, A. Halavanau and **Ya.M. Shnir** - Hopfion canonical quantization *Phys. Lett. B 711 (2012) 212-216; arXiv:1204.0504.*

53. **Ya.M. Shnir** - Color-Flavor Transformation and Its Applications to Lattice Field Theory *Acta Physica Polonica B, Proc Suppl. 4 No. 3 (2011) 403-423* .

54. E. Radu, **Ya.M. Shnir** and D. H. Tchrakian - Scalar hairy black holes and solitons in a gravitating Goldstone model, *Phys. Lett. vol. B 703 (2011) pp. 178-185;* arXiv:1106.5066v1 [gr-qc].

55. A. Acus, B. Malomed and **Ya.M. Shnir** - Spontaneous symmetry breaking of binary fields in a nonlinear double-well structure, *Physica D 241 (2012), pp. 987-1002;* arXiv:1202.3328 [nlin]

56. **Ya.M. Shnir** - Q-vortices, Q-walls and coupled Q-balls, *J. Phys. A: Math. Theor. 44 (2011) 425202 (15pp); arXiv:1101.5366 [hep-th].*

57. P. Dorey, K.Mersh, T. Romanczukiewicz and **Ya.M. Shnir** - Kink-antikink collisions in the ϕ^6 model, *Phys. Rev. Lett. 107 (2011) 091602*; arXiv:1101.5951 [hep-th].

58. T. Romanczukiewicz and **Ya.M. Shnir** - Oscillon resonances and creation of kinks in particle collisions, *Phys. Rev. Lett. 105 (2010) 081601*; arXiv:1002.4484[hep-th].

59. **Ya.M. Shnir** and D. H. Tchrakian - Skyrmion–Anti-Skyrmion Chains, *J. Phys. A: Math. Theor. 43 (2010) 025401 (11pp); arXiv:0906.5583 [hep-th].*

60. **Ya.M. Shnir** - Gravitating axially-symmetric monopole-antimonopole configurations, *J. Phys. 222 (2010) 012019 (17pp).*

61. E. Radu, **Ya.M. Shnir** and D. H. Tchrakian - Non-abelian solutions of $d = 4+1$ Einstein-Yang-Mills and Yang-Mills-dilaton theories; *Physics of Atomic Nuclei (2010) Vol. 73 No. 3, pp. 509-517.*

62. A. Acus, E. Norvaisas and **Ya.M. Shnir** - Baby Skyrmions stabilized by canonical quantization, *Phys. Lett. vol. B 682 (2009), pp. 155-162;arXiv:0909.5281 [hep-th].*

63. E. Radu, **Ya.M. Shnir** and D. H. Tchrakian - $d = 4 + 1$ gravitating nonabelian solutions with bi-azimuthal symmetry, *Phys. Lett., vol B 657 (2008) pp. 246-254; arXiv:0705.3608 [hep-th].*

64. J. Kunz, U. Neemann and **Ya.M. Shnir** - Gravitating Monopole-Antimonopole Systems at Large Scalar Coupling, *Phys. Rev. vol D75 (2007) 125008; hep-th/0703232.*

65. E. Radu, **Ya.M. Shnir** and D. H. Tchrakian - Particle-like solutions to the Yang-Mills-dilaton system in $d = 4+1$ dimensions, *Phys. Rev. vol D75 (2007) 045003; hep-th/0611270.*

66. **Ya.M. Shnir** - Non self-dual and self-dual $SU(2)$ Calorons, *Europhys. Lett., vol 77 (2007) 21001.*

67. J. Kunz, U. Neemann and **Ya.M. Shnir** - Transitions between Monopole-Antimonopole Chains and Vortex Rings, *Phys. Lett., vol B 640 (2006) pp. 57-53; hep-th/0606176.*

68. **Ya.M. Shnir** - Electromagnetic Interaction in the System of Multimonopoles and Vortex Rings, *Phys. Rev. vol D72 (2005) 055016; hep-th/0507181.*

69. B. Kleihaus, J. Kunz and **Ya.M. Shnir** - Gravitating Monopole–Antimonopole Chains and Vortex Rings, *Phys. Rev., vol D71 (2005) 024013; gr-qc/0411106.*

70. R. Ibadov, B. Kleihaus, J. Kunz and **Ya.M. Shnir** - New regular solutions with axial symmetry in Einstein-Yang-Mills theory, *Phys. Lett., vol B 609 (2005) pp. 150-156; gr-qc/0410091.*

71. **Ya.M. Shnir** - The Color–Flavor Transformation of induced QCD, *International Journal of Modern Physics A, vol 20, (2005) pp. 4965-4994; hep-lat/0506035.*

72. B. Kleihaus, J. Kunz and **Ya.M. Shnir** - Monopole-Antimonopole chains and vortex rings, *Phys. Rev., vol D70 (2004) 065010; hep-th/0405169*

73. **Ya.M. Shnir** - Interaction of vortices with an external field, *Modern Physics Letters A, vol 19, No.4 (2004) pp. 287-295; hep-th/0401021.*

74. **Ya.M. Shnir** - Properties of non-BPS $SU(3)$ monopoles, *Physica Scripta, vol 69 (2004) pp. 15-23; hep-th/0309210.*

75. B. Kleihaus, J. Kunz and **Ya.M. Shnir** - Monopoles, antimonopoles and vortex rings, *Phys. Rev., vol D68 (2003) 101701; hep-th/0307215.*

76. B. Kleihaus, J. Kunz and **Ya.M. Shnir** - Monopole-Antimonopole chains. *Phys. Lett., vol B 570 (2003) pp. 237-243; hep-th/0307110.*

77. **Ya.M. Shnir** - Collective coordinates of the Skyrme model coupled with fermions, *Physica Scripta, vol 67, No 5, (2003), pp 361-365; hep-th/0307277.*

78. J. Budzcies, S. Nonnenmacher, **Ya.M. Shnir** and M. Zirnbauer $(1+1)$–dimensional Baryons from the SU(N) Color–Flavor Transformation, *Nuclear Physics, vol B635, (2002) pp. 319-365; hep-lat/0112018.*

79. **Ya.M. Shnir** and V.G. Kiselev - Forced Topologically Nontrivial Field Configurations; *Phys.Rev., vol D57, (1998) pp.5174-5183; hep-th/9801001.*

80. S.G. Kovalevich, Per Osland, **Ya.M. Shnir** and E.A. Tolkachev - Effective Lagrangian of QED with a magnetic charge and dyon mass bounds; *Phys.Rev., vol.D55, (1997), pp.5807-5812; hep-ph/9702402.*

81. E.A. Tolkachev, L.M. Tomil'chik and **Ya.M. Shnir** - On the Space Reflections Definition Problem in the Magnetic Charge Theory; *Turk. J. Phys.,* vol 21, (1997), pp 546-551.

82. S.G. Kovalevich, **Ya.M. Shnir** and E.A. Tolkachev - Charge-Dyon Bound System Atomic Polarizability; *Physica Scripta, vol.53, (1996), pp. 51-53.*

83. A.O. Barut, M.P. Knyazev, **Ya.M. Shnir** and E.A. Tolkachev - Enhancement of the Rate of Radiative Processes in the Field of a Magnetic Monopole; *Physica Scripta, vol 49, (1994), pp. 513-517.*

84. A.O. Barut, **Ya.M. Shnir** and E.A. Tolkachev - The Lamb Shift in the Charge - Magnetic Monopole System; *Modern Physics Letters, vol A 8, (1993), pp. 3443 - 3454.*

85. **Ya.M. Shnir** and E.A. Tolkachev - New non-singular Description of the Abelian monopole; *Phys.Lett., vol.A 183, (1993), pp. 37-40.*

86. A.O. Barut, **Ya.M. Shnir** and E.A. Tolkachev - Space Reflections in the Dichotomic Magnetic Charge Model; *Journal of Physics A, vol.26, (1993), pp.L101-L104.*

87. **Ya.M. Shnir**, E.A. Tolkachev - Vacuum Polarization around a Dyon; *Soviet Journal of Nuclear Physics (USA), vol.56, (1992), pp.1596-1599.*

88. **Ya.M. Shnir**, E.A. Tolkachev and L.M. Tomil'chik - P violating Magnetic Monopole Influence on the Atom-like System in the External Fields; *International Journal of Modern Physics, vol. A7, (1992), pp.3747-3167.*

89. **Ya.M. Shnir**, E.A. Tolkachev and L.M. Tomil'chik - Effect of a Slow Monopole on the Photoionization of a Hydrogen-like Atom; *Soviet Journal of Nuclear Physics (USA), vol.54 (1991), pp.315 - 317.*

90. E.A. Tolkachev and **Ya.M. Shnir** - Non-trivial Topology Effects in the Interaction of a Monopole with a Line Current; *Phys.Lett., vol.A 155, (1991), pp. 464- 466.*

91. E.A. Tolkachev, L.M. Tomil'chik and **Ya.M. Shnir** - Monopole-induced Excitation of an Atom; *Soviet Journal of Nuclear Physics (USA), vol.52 (1990), pp.916 - 917.*

92. E.A. Tolkachev, L.M. Tomil'chik and **Ya.M. Shnir** - The "Diogen" Atom in the External Field and P Noninvariance; *Soviet Journal of Nuclear Physics (USA), vol.50 (1989), pp.275 - 277.*

93. E.A. Tolkachev, L.M. Tomil'chik and **Ya.M. Shnir** - Motion of the Electrons in the Fields of a Monopole and an Arbitrary Central Potential. Effects of the Rotating System of Reference; *"Gravitation and Electromagnetism", Minsk, (1989), pp. 228 - 234 (in Russian).*

94. E.A. Tolkachev, L.M. Tomil'chik and **Ya.M. Shnir** - P - Parity Violation in the "Dyogen" Spectrum; *Journal of Physics, vol. G 14, (1988), pp.1 - 7.*

95. E.A. Tolkachev, L.M. Tomil'chik and **Ya.M. Shnir** - Definition of Space Reflection in a Theory with Dirac Monopole; *Izv.AN BSSR, N5, (1983) pp.55-58 (in Russian).*

96. E.A. Tolkachev, L.M. Tomil'chik and **Ya.M. Shnir** - Modification of the Selection Rules as a P violating Effect in the Charge-Monopole System; *Soviet Journal of Nuclear Physics (USA), vol.38 (1983), pp.320-323.*

Collections of works

1. T. Romanczukiewicz and **Ya.M. Shnir** - Some Recent Developments on Kink Collisions and Related Topics; Invited chapter in the collection *"A Dynamical Perspective on the ϕ^4 Model: Past, Present and Future", Eds. P. Kevrekidis and J.C. Maraver, Springer, 2019, pp 23-48*

2. **Ya.M. Shnir** - Q-vortices, Q-walls and coupled Q-balls; *"Covariant Methods in Theoretical Physics", Minsk, (2011), vol. 7, pp.188-197.*

3. **Ya.M. Shnir** - Monopole-Monopole solutions of Einstein-Yang-Mills-Higgs Theory; *Invited contribution to the collection "Sense of Beauty in Physics" (FestSchrift for Adriano Di Giacomo), Eds. M D'Elia et al, Pisa University Press 2006, pp. 497-504*; gr-qc/0510108.

4. **Ya.M. Shnir** - Multimonopoles and closed vortices in $SU(2)$ Yang-Mills-Higgs theory; *Etudes on Theoretical Physics (Collection of works dedicated to 65th anniversary of the Department of Theoretical Physics, University of Belarus), Singapore, World Scientific, 2004, pp 115-137*; hep-th/0403086.

5. E.A. Tolkachev, L.M. Tomil'chik and **Ya.M. Shnir** - Restoring of P Invariance by Embedding of Dirac Monopole in a Gauge Models; *"Covariant Methods in the Theoretical Physics", Minsk, (1986), pp.81-86.*

Proceedings

1. O. Kichakova, J. Kunz, E. Radu and **Y. Shnir** - $SU(2)$ Yang-Mills solitons in AdS_4 spacetime; *Proceedings of 14th Marcel Grossmann Meeting, Rome, Italy, July 12-18, 2015, Eds M.Bianchi, R.Jantzen and R.Ruffini. World Scientific, Singapore, pp 1499-1504*

2. **Ya.M. Shnir** - Isorotating knots and baby Skyrmions; *Proceedings of the 18th International Seminar "Quarks 2014", (Suzdal, Russia, 2014), Eds. P. Satunin et al, INP, Moscow, 2014, pp 440-448*

3. **Ya.M. Shnir** - Topological Solitons; *Physics of Particles and Nuclei Letters, Vol. 9 (2012) pp 745-754;* also in *Proceedings of the Baikal summer JINR-ISU school on physics of elementary particles and astrophysics 2011, (B.Koty, Russia, 2011), Eds. V. Naumov and A. Vall.*

4. **Ya.M. Shnir** - Magnetic Monopoles; *Physics of Particles and Nuclei Letters, Vol. 8 (2011) pp 749-754;* also in *Proceedings of the Baikal summer JINR-ISU school on physics of elementary particles and astrophysics 2010, (B.Koty, Russia, 2010), Eds. V. Naumov and A. Vall, SLAC eConf C1007061, pp 276-287.*

5. **Ya.M. Shnir** and D. H. Tchrakian - Axially-symmetric sphaleron solutions of the Skyrme model, *J. Phys.: Conf. Ser. 284 (2011) 012053 (11pp), (Proceedings of the 28th International Colloquium on Group-Theoretical Methods in Physics 26 - 30 July 2010, Newcastle upon Tyne, UK), Eds. M. Angelova, W. Zakrzewski and B. Piette*

6. E. Radu, **Ya.M. Shnir** and D. H. Tchrakian - Black holes and gravitating axially symmetric non-abelian solitons in d = 3+1 and d = 4+1, *Proceedings of the ICRANET Meeting "The Sun, the Stars, the Universe, and General Relativity", Minsk, Belarus, 2009, Eds. R. Ruffini and G. Vereshchagin; AIP Conf. Proc. Vol. 1205 (2010) 135.*

7. E.-M.Ilgebfritz and **Ya.M. Shnir** - More about the new non-selfdual axially symmetric SU(2) calorons, *Proceedings of the 8th International Conference on Quark Confinement and the Hadron Spectrum, Mainz, Germany, Sept. 2008; PoS CONFINEMENT8:038, arXive 0812.1501[hep-lat].*

8. E. Radu, **Ya.M. Shnir** and D. H. Tchrakian - Bi-azimuthally symmetric solutions of $d = 4 + 1$ Einstein-Yang-Mills $SU(2)$ theory; to be published in *Proceedings of the 15th International Seminar "Quarks 2008", (Sergiev Posad, Russia, 2008), Eds. D. Levkov et al, INP, Moscow, 2008*

9. B. Kleihaus, J. Kunz, U. Neemann and **Ya.M. Shnir** - Gravitating axially symmetric monopole-antimonopole chains and vortex rings, *J. Phys.: Conf. Ser. 68 012035 (10pp) (Proceedings of the NEB XII Conference, Napflion, Greece, 2006)*, Eds. T. Christodoulakis et al., Athens 2006.

10. **Ya.M. Shnir** - Self-dual and non-self dual axially symmetric caloron solutions in $SU(2)$ Yang-Mills theory; *Proceedings of the 14th International Seminar "Quarks 2006", (St.Petersburg, Russia, 2006), Eds. D. Levkov et al, INP, Moscow, 2006, Vol 2, pp 176-183*; hep-th/0609019.

11. **Ya.M. Shnir** - SU(N) monopoles with and without SUSY; *Invited lectures given at the Advanced Summer School on Modern Mathematical Physics (JINR Dubna, July 2005) and at the 8th International School-Seminar "The Actual Problems of Microworld Physics 2005" (Gomel-Dubna, August 2005)*; hep-th/0508210.

12. **Ya.M. Shnir** - Massive and massless non-BPS SU(3) monopoles; *Proceedings of the International Workshop Hadron States and QCD, PNPI, St.Petersburg, Russia, 2005*, Eds. V. Kim and L. Lipatov, pp 303-310.

13. **Ya.M. Shnir** - Monopole-Antimonopole pair in an external magnetic field; *Proceedings of the 6th International Conference on Quark Confinement and the Hadron Spectrum, Gagliary, Italy, Sept. 2004, AIP Press, N.-Y. (2005), pp. 254-256.*

14. B. Kleihaus, J. Kunz and **Ya.M. Shnir** - Chains of Monopoles and Closed Vortices; *Proceedings of the 13th International Seminar "Quarks 2004", Eds. D. Levkov et al, INP, Moscow, 2005*, pp. 108-124.

15. S. Nonnenmacher and **Ya.M. Shnir** - The Color–Flavor Transformation of induced QCD, *Proceedings of the 5th International Conference on Quark Confinement and the Hadron Spectrum, Gargnano, Italy, Sept. 2002, pp. 282-284.*

16. **Ya.M. Shnir** - Bundles over the moduli space of Skyrme model; *Proceedings of 15th International Workshop on High Energy Physics and Quantum Field Theory (QFTHEP 2000), Tver, Russia, 2000, pp.349-354.*

17. J. Budzcies and **Ya.M. Shnir** - Color-Flavor Transformation for the Special Unitary Group and Application to Low Energy QCD; *Proceedings of 15th International Workshop on High Energy Physics and Quantum Field Theory (QFTHEP 2000), Tver, Russia, 2000, pp.317-322*; hep-lat/0101016.

18. J. Budzcies and **Ya.M. Shnir** - Colour-Flavour Transformations and QCD Low-Energy Effective Action; *Proceedings of the Workshop "Hadron Physics", Coimbra 1999, Eds. A.H. Blin et al, AIP Press, N.-Y. (2000), Vol. 508 Issue 1, pp. 172-181.*

19. **Ya.M. Shnir** - Forced Kink of $\lambda\phi^4$ Model; *Proceedings of the 5th International Wigner Symposium, Vienna 1997, Eds. P.Kasperkovitz and D.Grau, World Scientific, Singapore (1998), pp.180-183; hep-th/9712083.*

20. V.G. Kiselev and **Ya.M. Shnir** - 't Hooft - Polyakov Monopole Interaction with Magnetic Fields; *Proceedings of the International Conference "Beyond the Standard Model V", Barholm, Norway, 1997, Eds. G.Eigen, P.Osland and B. Stuedu, AIP Press, N.-Y. (1997), pp.318-324.*

21. V.G. Kiselev and **Ya.M. Shnir** - Interaction of Non-Abelian Monopole with External Field; *Proceedings of the 21th International Colloquium on Group Theoretical Methods in Physics, Goslar, 1996, Eds. H.-D. Doebner, W. Scherer and C. Schulte, World Scientific, Singapore (1997), V.2, pp.676-680; hep-th/9702033.*

22. V.G. Kiselev and **Ya.M. Shnir** - Interaction of Nontrivial Topological Field Configurations with External Fields; *Proceeding of the International Conference "Quark Confinement and the Hadron Spectrum II", Como, Italy, 1996, Eds. N. Brambilla and G. M. Prosperi, World Scientific, Singapore (1997), pp.214-219.*

23. V.G. Kiselev and **Ya.M. Shnir** - Forced Topological Nontrivial Field Configurations; *Proceeding of the International Workshop on Quantum Systems, Minsk 1996, World Scientific, Singapore (1997), pp.81-94.*

24. E.A. Tolkachev, L.M. Tomil'chik and **Ya.M. Shnir** - The P-invariance Problem in Magnetic Charge Theory; *Proceeding of the International Workshop on Quantum Systems, Minsk 1996, World Scientific, Singapore (1997), pp.68-71.*

25. E.A. Tolkachev, L.M. Tomil'chik and **Ya.M. Shnir** - Space Reflections in a Magnetic Charge Theory; *Proceeding of the A.O.Barut Memorial Conference on Group Theory in Physics, Edirne, Turkey, 21-22 Dec 1995., Eds. T. Dereli and I.H. Duru, Edirne (1996), pp.282-287 - quant-ph/9603003.*

26. V.I. Polyakov, **Ya.M. Shnir** and E.A. Tolkachev - Magnetic Monopole Influence on the Nuclear Reactions Rate; *Proceeding of the 9th Workshop "High Energy Physics and Quantum Field Theory", Zvenigorod, Russia, Sept. 1994, MSU (1995) pp.368 - 370.*

27. E.A. Tolkachev, L.M. Tomil'chik and **Ya.M. Shnir** - QED Effects in the Dyon External Field; *Proceeding of the International Workshop on Quantum Systems, Minsk 1994, World Scientific, Singapore (1995), pp.167-179.*

28. **Ya.M. Shnir**, E.A. Tolkachev and L.M. Tomil'chik - Dielectric and Magnetic Permittivities of the QED Vacuum Caused by the Dyon; *Proceeding of the 15th Workshop "Problems of High Energy Physics and Field Theory", Protvino, July 1992.*

29. **Ya.M. Shnir** and E.A. Tolkachev - Monopole and P, T noninvariance; *Proceeding of the 12th Workshop "Problems of High Energy Physics and Field Theory", Protvino, July 1989, pp.244 - 248.*

30. **Ya.M. Shnir** and E.A. Tolkachev - Effective Parametric Monopole in the Berry Approach; *Proceeding of the 11th Workshop "Problems of High Energy Physics and Field Theory", Protvino, July 1988, pp.398 - 403.*

31. E.A. Tolkachev and **Ya.M. Shnir** - Spin Interpretation of the Axial-vector Currents; *Proceeding of the 9th Workshop "Problems of High Energy Physics and Field Theory", Protvino, July 1986, pp.119 -122.*

32. **Ya.M. Shnir** - Radiation of an electron in a magnetic monopole external field; *Proceeding of the 8th Byelorussian Workshop on Physics, Minsk, (1984), pp.49 - 51.*

33. V.I. Terechenkov and **Ya.M. Shnir** - Effects of Non-additivity of the Energy-Momentum Tensor in a Theory with Monopoles; *Proceeding of the 7th Byelorussian Workshop on Physics, Mogilev, (1982), pp.37.*

34. V.N. Tunyak and **Ya.M. Shnir** - Cosmological model in General Relativity with a spinning continuum; *Proceeding of the 7th Workshop on Modern Problems of Geometry, Minsk, (1979), pp.203.*