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## EDUCATION

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**Student**, Faculty of Physics, Lomonosov Moscow State University 1997-2003

**Degree: M.S. with honour in Physics**, Lomonosov Moscow State University, Faculty of Physics (Moscow, Russia).

Diploma “Three-wave interaction in quadratic periodically poled media”, supervisor Prof. A.P. Sukhorukov.

**PhD student**, Faculty of Physics, Lomonosov Moscow State University 2003-2006

**Degree: Ph.D. in Physics and Mathematics**, Lomonosov Moscow State University, Faculty of Physics (Moscow, Russia).

Ph.D. Thesis “Cascaded and hybrid parametric interactions of wave beams”, supervisor Prof. A.P. Sukhorukov.

## RESEARCH INTERESTS

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- Kerr frequency combs.
- Dissipative Kerr solitons and platons in optical microresonators.
- Multistep and quasi-phase-matched processes in quadratic media.
- Application of  $\chi^{(2)}$  cascading for spatial all-optical switching.
- Spatial and spatiotemporal solitons in linear, nonlinear and mixed linear-nonlinear optical lattices.
- Anderson localization in optical lattices.
- Dissipative spatial and spatiotemporal solitons.
- Vortex solitons.

**Scopus:** Author ID 7101696452.

**Researcher ID:** F-4419-2015.

**E-library:** SPIN 6065-4890.

<https://mapofscience.ru>: 00046549

- Reviewing: Physical Review A, Physical Review E, Optics Letters.

## WORK AND RESEARCH EXPERIENCE

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### Researcher and Senior Researcher

Coherent Microoptics and Radiophotonics Group, RQC – Russian Quantum Center (Skolkovo, Russia)

Research activity: Kerr frequency combs in optical microresonators, dissipative Kerr solitons and platicons

July, 2014 - present

### Postdoctoral Researcher

Nonlinear Optical Phenomena Group, ICFO-The Institute of Photonic Sciences (Barcelona, Spain).

Research activity: spatial and spatiotemporal solitons in linear, nonlinear and mixed linear-nonlinear optical lattices; Anderson localization in optical lattices; dissipative spatial and spatiotemporal solitons.

June, 2009-May, 2014

### Associate Professor

Moscow State University, Faculty of Physics, Department of Photonics and Microwave Physics (Moscow, Russia).

Tutorial activity: course “Principles of photonics” for students of the third year; training on radioelectronics; supervision of M.S. diploma “Mutual repulsion of optical beams in the media with thermal nonlinearity”.

Research activity: nonlinearity-induced effect of total internal reflection induced optical periodic structures in quadratic medium.

March, 2009-June, 2009

### Senior Tutor

Moscow State University, Faculty of Physics, Department of Photonics and Microwave Physics (Moscow, Russia).

Tutorial activity: course “Principles of photonics” for students of the third year; training on radioelectronics; supervision of M.S. diplomas “Parametric reflection of optical wave from cylindrical reference beam” and “Propagation and interaction of extremely short pulses in layered quadratic media”.

Research activity: application of  $\chi^{(2)}$  cascading for spatial all-optical switching, nonlinearity-induced effect of total internal reflection.

2007-2009

### Research Associate

Moscow State University, Faculty of Physics, Department of Photonics and Microwave Physics (Moscow, Russia).

Tutorial activity: training on radioelectronics.

Research activity: application of  $\chi^{(2)}$  cascading for spatial all-optical switching, nonlinearity-induced effect of total internal reflection.

2006-2007

## SKILLS

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- **Programming languages and program packages:** C, MatLab, Origin.
- **Mathematical methods for analysis of optical phenomena in inhomogeneous and nonlinear media:** method of averaging for quasi-phase-matched processes, ray optics approximation, variational approach, perturbation approach, linear stability analysis.
- Experience of implementation of numerical modeling methods: Spectral method of numerical solution of nonlinear differential equations, split-step technique, relaxation technique, Runge-Kutt method, simple iterative method.
- Languages: upper-intermediate English, basic Spanish, fluent Russian.
- Hard-working, conscientious, accurate, creative and analytic turn of mind, ready for professional growing, quick-minded.

## GRANTS AND SCHOLARSHIPS

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<b>Moscow State University Scholarship</b> for talented young scientists and tutors	2009
<b>Dynasty Foundation grant</b> for young scientists with academic degree	2008-2009
<b>Grant of the President of Russian Federation</b> for young scientists with academic degree	2007-2008
<b>Winner of Young Scientists Competition</b> , Faculty of Physics, Moscow State University	2007
<b>Prize for the best youth scientific report</b> on the International Workshop on Quantum Optics (Samara)	2007
<b>Prize for the best scientific report</b> on the Youth Scientific School "Coherent optics and optical spectroscopy" (Kazan)	2005, 2007
<b>Dynasty Foundation grant</b> for graduate students and young scientists without academic degree	2005-2007
<b>"Grant of Moscow"</b> for the best graduate students in Physics	2004-2005
<b>Scholarship of the President of Russian Federation</b> for graduate students	2004
<b>Winner of Academician Khokhlov Prize</b> for the best scientific student work	2003
<b>Executor and supervisor of grants</b> of the Russian Foundation of Basic Researches, the President's Program of Leading Scientific Schools Support and the program "Universities of Russia"	

## SELECTED PUBLICATIONS

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I have **75** publications in different journals, among them Physical Review Letters, Physical Review A, Optics Letters, Optics Express.

1. Weng, Erwan Lucas, Grigory Lihachev, **Valery E. Lobanov**, Hairun Guo, Michael L. Gorodetsky, and Tobias J. Kippenberg. "Spectral purification of microwave signals with disciplined dissipative Kerr solitons," Phys. Rev. Lett. **122** (1), 013902 (2019).
2. A. E. Shitikov, I. A. Bilenko, N. M. Kondratiev, **V. E. Lobanov**, A. Markosyan, and M. L. Gorodetsky, "Billion Q-factor in silicon WGM resonators," Optica **5**, 1525-1528 (2018).
3. R. R. Galiev, N. G. Pavlov, N. M. Kondratiev, S. Koptyaev, **V. E. Lobanov**, A. S. Voloshin, A. S. Gorodnitskiy, and M. L. Gorodetsky, "Spectrum collapse, narrow linewidth, and Bogatov effect in diode lasers locked to high-Q optical microresonators," Opt. Express **26**, 30509-30522 (2018).
4. A. V. Cherenkov, N. M. Kondratiev, **V. E. Lobanov**, A. E. Shitikov, D. V. Skryabin, and M. L. Gorodetsky, "Raman-Kerr frequency combs in microresonators with normal dispersion," Opt. Express **25**, 31148-31158 (2017).
5. N. M. Kondratiev, **V. E. Lobanov**, A. V. Cherenkov, A. S. Voloshin, N. G. Pavlov, S. Koptyaev, and M. L. Gorodetsky, "Self-injection locking of a laser diode to a high-Q WGM microresonator," Opt. Express **25**, 28167-28178 (2017).
6. **Valery E. Lobanov**, Artem V. Cherenkov, Artem E. Shitikov, Igor A. Bilenko and Michael L. Gorodetsky, "Dynamics of platicons due to third-order dispersion," Eur. Phys. J. D, **71**(7), 185 (2017).

7. A.V. Cherenkov, **V.E. Lobanov**, and M.L. Gorodetsky, "Dissipative Kerr solitons and Cherenkov radiation in optical microresonators with third-order dispersion," *Phys. Rev. A* **95**, 033810 (2017).
8. **V. E. Lobanov**, G. V. Lihachev, N. G. Pavlov, A. V. Cherenkov, T. J. Kippenberg, and M. L. Gorodetsky, "Harmonization of chaos into a soliton in Kerr frequency combs," *Opt. Express* **24**, 27382-27394 (2016).
9. H. Guo, M. Karpov, E. Lucas, A. Kordts, M. H. P. Pfeiffer, V. Brasch, G. Lihachev, **V. E. Lobanov**, M. L. Gorodetsky and T. J. Kippenberg, "Universal dynamics and deterministic switching of dissipative Kerr solitons in optical microresonators," *Nature Phys.* **13**, 94-102 (2017).
10. **V.E. Lobanov**, G. Lihachev, and M.L. Gorodetsky, "Generation of platons and frequency combs in optical microresonators with normal GVD by modulated pump," *EPL* **112** 54008 (2015).
11. **V.E. Lobanov**, O.V. Borovkova, Y.V. Kartashov, V.A. Vysloukh, and L. Torner. "Dynamic versus Anderson wave-packet localization," *Phys. Rev. A* **91**, 063825 (2015).
12. **V.E. Lobanov**, G. Lihachev, T. J. Kippenberg, and M.L. Gorodetsky, "Frequency combs and platons in optical microresonators with normal GVD," *Opt. Express* **23**, 7713-7721 (2015)
13. **V.E. Lobanov**, O. V. Borovkova, V.A. Vysloukh, "Anderson localization of multichannel excitations in disordered two-dimensional waveguide arrays," *EPL* **109** 54001 (2015).
14. Y.V. Kartashov, B.A. Malomed, V.V. Konotop, **V.E. Lobanov**, and L. Torner, "Stabilization of spatiotemporal solitons in Kerr media by dispersive coupling," *Opt. Lett.* **40**, 1045-1048 (2015)
15. **V.E. Lobanov**, O. V. Borovkova, Y. V. Kartashov and A. Szameit, "Spatio-temporal hybrid Anderson localization," *EPL* **108** 64002 (2014).
16. **V.E. Lobanov**, O.V. Borovkova, and B.A. Malomed, "Dissipative quadratic solitons supported by a localized gain," *Phys. Rev. A* **90**, 053820 (2014).
17. **V.E. Lobanov**, Y. V. Kartashov, V. V. Konotop, "Fundamental, multipole, and half-vortex gap solitons in spin-orbit coupled Bose-Einstein condensates," *Phys. Rev. Lett.* **112**, 180403 (2014).
18. **V.E. Lobanov**, Y.V. Kartashov, V.A. Vysloukh, and L. Torner, "Anderson localization of light with topological dislocations," *Phys. Rev. A* **88**, 053829 (2013).
19. **V.E. Lobanov**, Y.V. Kartashov, V.A. Vysloukh, and L. Torner, "Anderson localization in Bragg-guiding arrays with negative defects," *Opt. Lett.* **37**, 4020-4022 (2012).
20. **V.E. Lobanov**, Y.V. Kartashov, V.A. Vysloukh, and L. Torner, "Soliton generation by counteracting gain-guiding and self-bending," *Opt. Lett.* **37**, 4540-4542 (2012).
21. **V.E. Lobanov**, O.V. Borovkova, Y.V. Kartashov, B.A. Malomed, and L. Torner, "Stable bright and vortex solitons in photonic crystal fibers with inhomogeneous defocusing nonlinearity," *Opt. Lett.* **37**, 1799-1801 (2012).
22. Y.V. Kartashov, **V.E. Lobanov**, B.A. Malomed, and L. Torner, "Asymmetric solitons and domain walls supported by inhomogeneous defocusing nonlinearity," *Opt. Lett.* **37**, 5000-5002 (2012).
23. O.V. Borovkova, **V.E. Lobanov**, and B.A. Malomed, "Solitons supported by singular spatial modulation of the Kerr nonlinearity," *Phys. Rev. A* **85**, 023845 (2012).
24. O.V. Borovkova, **V.E. Lobanov**, and B.A. Malomed, "Stable nonlinear amplification of solitons without gain saturation," *EPL*, **97**, 44003 (2012).
25. O.V. Borovkova, **V.E. Lobanov**, Y.V. Kartashov, and L. Torner. "Stable vortex-soliton tori with multiple nested phase singularities in dissipative media," *Phys. Rev. A* **85**, 023814 (2012).

26. **V.E. Lobanov**, O.V. Borovkova, Y.V. Kartashov, V.A. Vysloukh, and L. Torner. "Topological light bullets supported by spatiotemporal gain," *Phys. Rev. A* **85**, 023804 (2012).
27. O.V. Borovkova, Y.V. Kartashov, V.A. Vysloukh, **V.E. Lobanov**, B.A. Malomed, and L. Torner, "Solitons supported by spatially inhomogeneous nonlinear losses," *Opt. Express* **20**, 2657-2667 (2012).
28. O.V. Borovkova, Y.V. Kartashov, **V.E. Lobanov**, V.A. Vysloukh, and L. Torner, "Vortex twins and anti-twins supported by multiring gain landscapes," *Opt. Lett.* **36**, 3783-3785 (2011).
29. **V.E. Lobanov**, A.P. Sukhorukov. "Repulsion and total reflection with mismatched three-wave interaction of noncollinear optical beams in quadratic media," *Phys. Rev. A* **84**, 023821 (2011).
30. O.V. Borovkova, Y.V. Kartashov, **V.E. Lobanov**, V.A. Vysloukh, and L. Torner, "General quasi-nonspreading linear three-dimensional wave packets," *Opt. Lett.* **36**, 2176-2178 (2011).
31. O.V. Borovkova, **V.E. Lobanov**, Y.V. Kartashov, and L. Torner, "Rotating vortex solitons supported by localized gain," *Opt. Lett.* **36**, 1936-1938 (2011).
32. **V.E. Lobanov**, Y.V. Kartashov, V.A. Vysloukh, and L. Torner, "Stable radially symmetric and azimuthally modulated vortex solitons supported by localized gain," *Opt. Lett.* **36**, 85-87 (2011).
33. **V.E. Lobanov**, A.P. Sukhorukov. "Total reflection, frequency, and velocity tuning in optical pulse collision in nonlinear dispersive media," *Phys. Rev. A* **82**, 033809 (2010).
34. **V.E. Lobanov**, Y.V. Kartashov and L. Torner, "Light bullets by synthetic diffraction-dispersion matching," *Phys. Rev. Lett.* **105**, 033901 (2010).
35. **V.E. Lobanov**, V.A. Vysloukh, and Y.V. Kartashov, "Inhibition of light tunneling for multichannel excitations in longitudinally modulated waveguide arrays," *Phys. Rev. A* **81**, 023803 (2010).
36. A.P. Sukhorukov, **V.E. Lobanov**, A.A. Kalinovich, "Nonlinear diffraction and total internal reflection in optical-beam interaction in defocusing media," *Journal of Russian Laser Research* **31(1)**, 1-11 (2010).
37. A.P. Sukhorukov, **V.E. Lobanov**, "Collision of optical pulses in nonlinear dispersive media: frequency tuning and velocity variation," *Proc. of SPIE Vol.* **7728**, 77281C (2010).
38. **V.E. Lobanov**, A.A. Kalinovich, A.P. Sukhorukov, F. Bennet, D. Neshev, "Nonlinear reflection of optical beams in the media with thermal nonlinearity", *Laser Physics* **19(5)**, 1112-1116 (2009).
39. O.V. Borovkova, **V.E. Lobanov**, A.P. Sukhorukov, A.K. Sukhorukova, "Managed discrete diffraction in cascaded induced waveguides", *Quantum Electronics* **39(11)**, 1050-1053 (2009).
40. **V.E. Lobanov**, A.K. Sukhorukova, A.P. Sukhorukov, "Parametric reflection upon cascaded interaction of focused optical beams", *Quantum Electronics* **38(10)**, 951-955 (2008).
41. O.V. Borovkova, **V.E. Lobanov**, A.P. Sukhorukov, A.K. Sukhorukova, "Cascaded induced lattices in quadratic nonlinear medium", *Proceedings of SPIE* **6994**, 699410 (2008).
42. A.A. Kalinovich, **V.E. Lobanov**, A.P. Sukhorukov, "Mutual repulsion of optical beams in media with nonlocal nonlinearity", *BRAS: Physics.* **72(1)**, 6-9 (2008).
43. **V.E. Lobanov**, A.P. Sukhorukov, "Parametric reflection phenomenon in quadratic uniaxial crystals with birefringence", *BRAS: Physics.* **72(12)**, 1597-1600 (2008).
44. A.P. Sukhorukov, **V.E. Lobanov**, S.V. Ermakova, "Mismatched three-wave interaction of optical noncollinear beams in nonlinear media", *Proceedings of SPIE.* **6181**. 61810S (2006).
45. **V.E. Lobanov**, A.P. Sukhorukov, A.Zh. Tsyrendorzhiev, A.A. Kalinovich, "Parametric scattering of optical beams in 3D geometry", *BRAS: Physics.* **70(12)**, 1979-1983 (2006).
46. A.K. Sukhorukova, A.P. Sukhorukov, **V.E. Lobanov**, "Focused beam reflection from optical parametric mirror", *BRAS: Physics.* **70(12)**, 1984-1987 (2006).
47. **V.E. Lobanov**, A.P. Sukhorukov, "Parametric reflection of wave beams upon mismatched three-

frequency interaction”, BRAS: Physics. **69(12)**, 1986-1990 (2005).

48. **V.E. Lobanov**, A.P. Sukhorukov, “Hybrid three-frequency parametric solitons in quadratic photonic crystals”, *Laser Physics*. **14(5)**, 669-676 (2004).
49. **V.E. Lobanov**, A.P. Sukhorukov, “Hybrid parametric solitons in nonlinear photonic crystals”, *Radiophys. Quantum Electron*. **45**, 366–373 (2003).

## **PARTICIPATION IN INTERNATIONAL CONFERENCES AND SEMINARS**

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1. Igor A. Bilenko, Nikita Kondratiev, **Valery Lobanov**, Artem Shitikov, Michael L. Gorodetsky, “Experimental observation of  $10^9$  quality factor in silicon crystalline optical whispering gallery mode resonators,” SPIE Photonics West 2019, The Moscone Center, San Francisco, USA, 2–7 February 2019.
2. Michael L. Gorodetsky, Ramzil Galiev, Nikolay Pavlov, Nikita Kondratiev, **Valery Lobanov**, Andrey Voloshin, Alexander Gorodnitsky, Sergey Koptyaev, Igor A. Bilenko, “Spectrum collapse, narrow lines, and soliton combs with multi-frequency laser diodes locked to optical microresonators,” SPIE Photonics West 2019, The Moscone Center, San Francisco, USA, 2–7 February 2019.
3. W. Weng, E. Lucas, H. Guo, G. Lihachev, **V. E. Lobanov**, M. L. Gorodetsky, and T. J. Kippenberg, "Injection locking of dissipative Kerr solitons," in *Conference on Lasers and Electro-Optics*, OSA Technical Digest (online) (Optical Society of America, 2018), paper JTh4D.3.
4. H. Guo, M. Karpov, E. Lucas, A. Kordts, M. H. P. Pfeiffer, V. Brasch, G. Lihachev, **V. E. Lobanov**, M. L. Gorodetsky, and T. J. Kippenberg, "Universal dynamics and deterministic switching of dissipative Kerr solitons in optical microresonators," in *Nonlinear Optics*, OSA Technical Digest (online) (Optical Society of America, 2017), paper NTu1B.4.
5. **V.E. Lobanov**, G. Lihachev, T. J. Kippenberg, and M.L. Gorodetsky, *Frequency combs and platicons in optical microresonators with normal GVD* // 3<sup>RD</sup> International Conference on Quantum Technologies, July 13-17 2015, Moscow. Program, p. 138. Poster P77.
6. **V.E. Lobanov**, Y.V. Kartashov, V.V. Konotop, V.A. Vysloukh, L. Torner, *Stable fundamental and vortex solitons supported by localized gain* // CLEO/Europe-EQEC 2011, 22-26 May 2011, Munich, Germany.
7. **V.E. Lobanov**, A.A. Kalinovich and A.P. Sukhorukov. *Laser-Induced Diffraction and Reflection in the Nonlinear Defocusing Media* // International Conference “Advanced Laser Technologies ALT’09”, Antalya, Turkey, 26 Sept. – 1 Oct. 2009.
8. A.P. Sukhorukov, **V.E. Lobanov**. *Pair Collisions of Optical Pulses in Non-Linear Dispersive Media: Frequency Tuning and Velocity Variation* // International Conference “Advanced Laser Technologies ALT’09”, Antalya, Turkey, 26 Sept. – 1 Oct. 2009.
9. O.V. Borovkova, **V.E. Lobanov**, A.P. Sukhorukov. *Managed pulse train generation by discrete dispersion of moving optical lattice in a quadratic medium* // 18th International Laser Physics Workshop (LPHYS’09), July 13 – 17, 2009, Barcelona, Spain.
10. **V.E. Lobanov**, A.P. Sukhorukov. *Management of optical pulses with nonlinear multiwave interactions* // 18th International Laser Physics Workshop (LPHYS’09), July 13 – 17, 2009, Barcelona, Spain.
11. **V.E. Lobanov**, A.P. Sukhorukov. *All-optical beam-switching in nonlinear defocusing media* // International Conference “Laser Optics 2008”, June 23-28, 2008, Saint-Petersburg.
12. O.V. Borovkova, **V.E. Lobanov**, A.P. Sukhorukov, and A.K. Sukhorukova. *Discrete diffraction management with parametrically induced lattices* // Topical Meeting on Optoinformatics’2008 Saint-Petersburg, Russia, September 15-18, 2008.

13. O.V. Borovkova, **V.E. Lobanov**, A.P. Sukhorukov. *Managed discrete diffraction in cascaded induced waveguides* // 6<sup>th</sup> International Conference on Photonics, Devices and Systems, Prague, Czech Republic, August 27-29, 2008.
14. **V.E. Lobanov**, A.P. Sukhorukov. *All-optical switching in nonlinear defocusing media* // 6<sup>th</sup> International Conference on Photonics, Devices and Systems, Prague, Czech Republic, August 27-29, 2008.
15. **V.E. Lobanov**, A.P. Sukhorukov. *Few-cycle pulses interactions in nonlinear photonic crystals with managed dispersion* // SPIE Europe Photonics Europe 2008, Strasbourg, France, 7-10 April 2008.
16. O.V. Borovkova, **V.E. Lobanov**, A.P. Sukhorukov. *Cascaded induced lattices in quadratic nonlinear medium* // SPIE Europe Photonics Europe 2008, Strasbourg, France, 7-10 April 2008.
17. **V.E. Lobanov**, A.P. Sukhorukov. *Few-cycle pulses interactions in quadratic photonic crystals with the dispersion management* // 403. WE-Heraeus-Seminar "Periodic Nanostructures for Photonics", Bad Honnef, Germany, 27-29 February 2008.
18. O.V. Borovkova, A.P. Sukhorukov, **V.E. Lobanov**. *Cascaded induced lattices in quadratic nonlinear medium* // Abstracts of 403. WE-Heraeus-Seminar "Periodic Nanostructures for Photonics", Bad Honnef, Germany, 27-29 February 2008.
19. **V.E. Lobanov**. *Collision and scattering of optical beams in QPM crystals* // International Seminar and Workshop on "Nonlinear Physics in Periodic Structures and Metamaterials", Dresden, Germany, March 19 – 30, 2007.
20. A.P. Sukhorukov, V.A. Chernykh, **V.E. Lobanov**, N.E. Senichev. *Few-cycle pulses interactions in nonlinear photonic crystals* // ICONO/LAT 2007, Minsk, Belarus, May 28- June 1, 2007.
21. **V.E. Lobanov**, A.P. Sukhorukov. *Parametric reflection and scattering of optical beams with three-wave interactions* // ICONO/LAT 2007, Minsk, Belarus, May 28- June 1, 2007.
22. O.V. Borovkova, A.P. Sukhorukov, **V.E. Lobanov**. *Optical scattering and diffraction from parametrically induced periodic structure* // ICONO/LAT 2007, Minsk, Belarus, May 28- June 1, 2007.
23. **V.E. Lobanov**, A.P. Sukhorukov. *Elastic collisions and scattering of optical beams in quadratic media* // 15th International Laser Physics Workshop (LPHYS'06, Lausanne, Switzerland), July 24-28, 2006.
24. **V.E. Lobanov**, A.P. Sukhorukov. *All-optical spatial switching with parametric refraction and reflection* // III International Conference for Young Scientists on Laser Optics (LOYS 2006), Saint Petersburg, June 26 - 30, 2006.
25. **V.E. Lobanov**, A.P. Sukhorukov. *Elastic collision and scattering of optical beams* // XII Conference on Laser Optics, Saint Petersburg, June 26 - 30, 2006.
26. A.A. Kalinovich, **V.E. Lobanov**, A.P. Sukhorukov. *Parametric refraction and reflection of optical beams* // International seminar "Days of Diffraction 2006", Saint Petersburg, May 30 - June 2, 2006.
27. A.P. Sukhorukov, **V.E. Lobanov**. *All-optical switching via vector parametric interaction* // "Nonlinear Guided Waves and Their Applications", Dresden, Germany, 6-9 September, 2005.
28. A.P. Sukhorukov, **V.E. Lobanov**. *Parametric refraction and reflection* // Int. Congress on Optics and Optoelectronics, Warsaw, Poland, 28 Aug. – 2 Sept., 2005.
29. **V.E. Lobanov**, A.P. Sukhorukov and A.K. Sukhorukova. *All-optical switching with parametric refraction and reflection* // 14th Int. Laser Physics Workshop, Kyoto, Japan, July 4-8, 2005.
30. **V.E. Lobanov**, A.P. Sukhorukov, A.K. Sukhorukova. *Parametric spatial switching: new effects and applications* // CLEO®/Europe – EQEC 2005, Munich, Germany, 12 – 17 June 2005.
31. **V.E. Lobanov**, A.P. Sukhorukov. *Parametric refraction and reflection of tilted optical beams in quadratic media* // 5<sup>th</sup> International Conference on Photonics, Devices and Systems, Prague, Czech Republic, June 8-11, 2005.
32. **V.E. Lobanov**, A.P. Sukhorukov, A.K. Sukhorukova. *Parametric reflection of inclined beams* // International Conference on Coherent and Nonlinear Optics (ICONO) 2005, St. Petersburg, Russia, May 11-15, 2005.

33. **V.E. Lobanov** and A.P. Sukhorukov. *Characterization of three-wave spatial solitons* // 13<sup>th</sup> Int. Laser Physics Workshop (LPHYS'04). Trieste, Italy, July 12-16, 2004.
34. A.P. Sukhorukov, **V.E. Lobanov**. *Hybrid quadratic soliton in periodically poled crystals* // "Nonlinear Guided Waves and Their Applications", Westin Harbor Castle, Toronto, Canada, March 28-31, 2004.
35. **V.E. Lobanov**. *Characterization of the hybrid three-wave spatial solitons* // Summer School "New Concepts in Photonics and Optical Communications", Dijon, France, June 21-25, 2004.
36. A.P. Sukhorukov, **V.E. Lobanov**. *Hybrid parametric solitons in quadratic photonic crystals* // Int. Conference and Symposium ILLA / LTL '2003, Plovdiv - Smolyan, Bulgaria, September 27 - October 1, 2003.
37. A.P. Sukhorukov, **V.E. Lobanov**. *Interactions of optical beams in quadratic photonic crystals* // 12<sup>th</sup> International Laser Physics Workshop, Hamburg, Germany, 25 - 29 August, 2003.
38. **V.E. Lobanov**, A.P. Sukhorukov. *Trapping of three-colour spatial solitons with QPM multistep cascading* // CLEO®/Europe - EQEC 2003, Munich, Germany, 22 - 27 June 2003.
39. A.P. Sukhorukov, **V.E. Lobanov**. *Hybrid quadratic solitons in photonic crystals* // XI Conference on Laser Optics, St. Petersburg, Russia, June 30 - July 4, 2003.
40. **V.E. Lobanov**, A.P. Sukhorukov. *Generation and trapping of optical beams in quadratic photonic crystals* // Second International Conference on Laser Optics for Young Scientists, St. Petersburg, Russia, June 30 - July 4, 2003.
41. **V.E. Lobanov**. *Trapping of spatial QPM solitons with third harmonic multistep cascading* // SUSSP 56 - Ultrafast Photonics, Scotland, St. Andrews, University of St. Andrews, School of Physics and Astronomy, 1-14 September 2002.
42. **V.E. Lobanov**, A.P. Sukhorukov, I.G. Zakharova. *Modeling of trapping three harmonics into spatial solitons in quadratic periodically poled crystals* // V Int. Conference on Mathematical Modeling, JINR, Dubna, Russia, September 2002.

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## ACADEMIC ACTIVITIES

### ***Courses and tutorial activities:***

- course "Principles of Photonics, Department of Photonics and Microwave Physics, Faculty, Lomonosov Moscow State University, 2008-2009.
- training on radioelectronics, Department of Photonics and Microwave Physics, Faculty, Lomonosov Moscow State University, 2006-2009.

### ***Supervisor of M.S. students:***

- A.Zh. Tsyrendorzhiev (2006-2008). M.S. diploma title: "**Parametric reflection of optical wave from cylindrical reference beam**";
- N.E. Senichev (2006-2008). M.S. diploma title: "**Propagation and interaction of extremely short pulses in layered quadratic media**";
- A.A. Mikhnevich (2007-2009). M.S. diploma title: "**Mutual repulsion of optical beams in the media with thermal nonlinearity**".

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## PARTICIPATION IN RESEARCH PROJECTS

- *"New methods of generation of wideband coherent optical frequency combs in microresonators," 2017-2019, RUSSIAN SCIENCE FOUNDATION, 2017-2018 - executor, 2019 - coordinator.*
- *"Optical Kerr frequency combs for precision measurements," 2017-2019, RUSSIAN FOUNDATION FOR BASIC RESEARCH, executor.*



- *"Exploring temporal solitons in optical micro-resonators for visible and mid IR based optical frequency combs", 2016-2018, Ministry of Education and Science of the Russian Federation, Investigator.*
- *"Propagation and nonlinear interaction of the Bessel and singular light beams in spatially inhomogeneous media", 2012-2013, RUSSIAN and BYELORUSSIAN FOUNDATION FOR BASIC RESEARCH, Investigator.*
- *"Theoretical and experimental investigation of optical and acoustic waves interaction in solids and liquids", 2012-2014, RUSSIAN FOUNDATION FOR BASIC RESEARCH, Investigator.*
- *"Theoretical and experimental study of the effects of localization and switching of wave beams and pulses in natural and artificial nonlinear media", 2011-2013, RUSSIAN FOUNDATION FOR BASIC RESEARCH, Investigator.*
- *"Nonlinear reflection, diffraction and interaction of Gaussian and singular light beams", 2010-2011, RUSSIAN and BYELORUSSIAN FOUNDATION FOR BASIC RESEARCH, Investigator.*
- *"Theoretical and experimental research of optical waves propagation in media with controlled properties", 2009-2011, RUSSIAN FOUNDATION FOR BASIC RESEARCH, Principal investigator.*
- *"Wave phenomenon in inhomogeneous media", 2008-2009, RUSSIAN FEDERATION PRESIDENT PROGRAM FOR STATE SUPPORT OF LEADING SCIENTIFIC SCHOOLS, Investigator.*
- *"Study of wave interaction dynamics in media with managed temporal and spatial dispersion", 2008-2010, RUSSIAN FOUNDATION FOR BASIC RESEARCH, Investigator.*
- *"Light by light control in micro- and nanostructured media", 2007-2008, RUSSIAN FEDERATION PRESIDENT PROGRAM FOR STATE SUPPORT OF YOUNG RUSSIAN SCIENTISTS, Principal investigator.*
- *"Wave phenomenon in inhomogeneous media", 2006-2007, RUSSIAN FEDERATION PRESIDENT PROGRAM FOR STATE SUPPORT OF LEADING SCIENTIFIC SCHOOLS, Investigator.*
- *"Generation, interaction and switching of the localized optical structures in nonlinear crystals", 2006-2008, RUSSIAN FOUNDATION FOR BASIC RESEARCH, Investigator.*
- *"Nonlinear wave patterns, solitons and dislocations in media with spatial and temporal dispersion", 2005-2007, RUSSIAN FOUNDATION FOR BASIC RESEARCH, Investigator.*
- *"Wave structures and dislocations in media with temporal and spatial dispersion", 2004-2006, RUSSIAN and BYELORUSSIAN FOUNDATION FOR BASIC RESEARCH, Investigator.*
- *"Wave structures and dislocations in media with temporal and spatial dispersion", 2004-2005, Program "Universities of Russia" of Board of Education of Russian Federation, Investigator.*
- *"Wave phenomenon in inhomogeneous media", 2003-2005, RUSSIAN FEDERATION PRESIDENT PROGRAM FOR STATE SUPPORT OF LEADING SCIENTIFIC SCHOOLS, Investigator.*
- *"Spatio-temporal self-organization of waves in nonlinear, inhomogeneous and dissipative media", 2002-2004, RUSSIAN FOUNDATION FOR BASIC RESEARCH, Investigator.*
- *"Investigation of optical spatial structures and vector solitons in homogeneous and inhomogeneous crystals", 2002-2003, Program "Universities of Russia" of Board of Education of Russian Federation, Investigator.*