

CV – PARFENYEV VLADIMIR



Personal Data:

- Born 3 February 1990, Russia.
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RESEARCH INTERESTS:

Fluid mechanics, chaotic and vortex flows, statistical physics, quantum optics, stochastic processes.

EDUCATION:

- 2013 – 2016: PhD in Theoretical Physics, Landau Institute for Theoretical Physics RAS.
Thesis: “Nonlinear phenomena in plasmonics and hydrodynamics: theory of spaser and generation of vorticity by surface waves”. Supervisor: [Lebedev Vladimir](#).
- 2011 – 2013: MSc (with honors) in Applied Mathematics and Physics, Moscow Institute of Physics and Technology, Department of General and Applied Physics.
Thesis: “Spaser in above-threshold regime: the lasing frequency shift”.
- 2007 – 2011: BSc (with honors) in Applied Mathematics and Physics, Moscow Institute of Physics and Technology, Department of General and Applied Physics.

EMPLOYMENT:

- 2020 – present: Researcher, Landau Institute for Theoretical Physics of the RAS.
- 2017 – 2020: Junior Researcher, Landau Institute for Theoretical Physics of the RAS.
- 2012 – 2013: Junior Engineer, Samsung Moscow Research Center.

PREPRINTS:

1. V.M. Parfenyev and S.S. Vergeles, “Virtual wave stress in deep-water crossed surface waves”, arxiv.org/abs/2004.06066.

ARTICLES:

1. S.A. Belan and V.M. Parfenyev, “Optimality and universality in quantum Zeno dynamics”, *New J. Phys.* 22, 073065 (2020).
2. V. Parfenyev, S. Filatov, M. Brazhnikov, S. Vergeles, A. Levchenko, “Formation and decay of eddy currents generated by crossed surface waves”, *Phys. Rev. Fluids* 4, 114701 (2019).
3. V. Parfenyev, S. Belan, V. Lebedev, “Universality in statistics of Stokes flow over no-slip wall with random roughness”, *J. Fluid Mech.* 862, 1084-1104 (2019).

4. V.M. Parfenyev, S.S. Vergeles, “Influence of a thin compressible liquid film on the eddy currents generated by interacting surface waves”, *Phys. Rev. Fluids* 3, 064702 (2018).
5. S.V. Yablonskii, N.M. Kurbatov, V.M. Parfenyev, “Acoustic streaming in 2D freely suspended smectic liquid crystal film”, *Phys. Rev. E* 95, 012707 (2017).
6. V.M. Parfenyev, S.S. Vergeles, V.V. Lebedev, “Effects of thin film and Stokes drift on the generation of vorticity by surface waves”, *Phys. Rev. E* 94, 052801 (2016).
7. V.M. Parfenyev, S.S. Vergeles, V.V. Lebedev, “Nonlinear generation of vorticity in thin smectic films”, *JETP Letters*, 103 (3), 201 – 205 (2016); 104(4), 287 (2016).
8. S. Filatov, V. Parfenyev, S. Vergeles, M. Brazhnikov, A. Levchenko, V. Lebedev, “Nonlinear generation of vorticity by surface waves”, *Phys. Rev. Lett.* 116, 054501 (2016).
9. S. Belan, V. Parfenyev, S. Vergeles, “Negative-angle refraction and reflection of visible light with a planar array of silver dimers”, *Opt. Mater. Express*, 5 (12), 2843-2848 (2015).
10. I.A. Fyodorov, V.M. Parfenyev, G.T. Tartakovsky, S.S. Vergeles, A.K. Sarychev, “Allowable number of plasmons in nanoparticle”, *JETP Letters*, 100 (8), 530-534 (2014).
11. V.M. Parfenyev, S.S. Vergeles, “Quantum theory of a spaser-based nanolaser”, *Optics Express*, 22(11), 13671-13679 (2014).
12. V.M. Parfenyev, S.S. Vergeles, “Intensity-dependent frequency shift in surface plasmon amplification by stimulated emission of radiation”, *Phys. Rev. A* 86, 043824 (2012).

PATENTS:

1. M.N. Makurin, N.N. Olyunin, V.M. Parfenyev, Ki Young Kim, Keum Su Song, “Planar spiral induction coil having increased quality (q)-factor and method for designing planar spiral induction coil”, U.S. Patent No. 9712209 (2017).
2. M.N. Makurin, N.N. Olyunin, V.M. Parfenyev, Ki Young Kim, Keum Su Song, “Flat inductor and methods of manufacturing and using the same”, Patent RF №2523932, US 20140225705 A1.

GRANTS:

- 2020-2022, Russian Science Foundation, 20-12-00383, “Structure of three-dimensional coherent vortices in turbulent flow”, participant.
- 2019-2021, Government of the Russian Federation, Megagrant 2019-220-07-6822, “Turbulence, coherent flows and viscous electronics”, participant.
- 2017-2020, Basis Foundation, Junior PostDoc, “Vortex flows and their interaction with turbulent fluctuations in hydrodynamic problems”, leader.
- 2014-2018, Russian Science Foundation, 14-22-00259, “Investigation of stochastic processes in thin fluid layers and interfaces”, participant.

TEACHING:

- **NRU Higher School of Economics, Faculty of Physics:** “Stochastic processes and modeling in physics”, lecturer (2019-2021); “Mathematical Physics”, TA (2018-2021);
- **Skolkovo Institute of Science and Technology:** “Stochastic Modeling and Computation”, TA (2016-2017);
- **Moscow Institute of Physics and Technology, Department of General and Applied Physics:** “Stochastic processes in physical kinetics”, TA (2014-2016); “Electrodynamics of condensed matter”, TA (2013-2016);