

Principal publications

Papers in the international peer-reviewed scientific journals:

1. **V. Zeitlin**, Reduction of a direct product of irreducible representations of the supersymmetry group in the rest-frame - 1977, *Sov. J. Nucl. Phys.* **25**, 1257 -1267.
2. **V. Ogievetsky** and **V. Zeitlin**, Exceptional gauge theories in 3x3 matrix formalism - 1978, *J. Phys A* **11**, 1479 - 1486.
3. **V. Ogievetsky** and **V. Zeitlin**, Unified gauge theories with stable proton - 1978, *Sov. J. Nucl. Phys.* **28**, 1616 -1630.
4. **R. Lednitsky** and **V. Zeitlin**, Neutral currents problem in the unified theory -1979, *Sov. J. Nucl. Phys.* **31**, 1036 -1047.
5. **R. Lednitsky** and **V. Zeitlin**, Neutral currents in theory of grand unification -1979, *Phys. Letters B* **88**, 302 – 306.
6. **R. Lednitsky** and **V. Zeitlin**, The Weinberg - Salam model and grand unification -1979, *JETP Letters* **30**, 354 – 356.
7. **V. Zeitlin**, On internal gravity waves propagation in stratified medium with shear – 1982, *Izvestiya: Atm. Ocean Physics* **18**, 145 - 152.
8. **N. Romanova** and **V. Zeitlin**, The evolution of a non-linear wave-train in a stratified shear flow which is losing its stability - 1983, *Izvestiya: Atm. Ocean Physics* **19**, 600 - 606.
9. **N. Romanova** and **V. Zeitlin**, On quasi-geostrophic motions in barotropic and baroclinic fluids - 1984, *Izvestiya, Atm. Ocean Physics* **20**, 85 - 91.
10. **N. Romanova** and **V. Zeitlin**, Solitary Rossby waves in a weakly stratified medium - 1985, *Izvestiya: Atm. Ocean Physics* **21**, 627 - 630.
11. **N. Romanova** and **V. Zeitlin**, On the non-linear stage of radiative instability of a weakly stratified medium - 1986, *Izvestiya, Atm. Ocean Physics* **22**, 150 - 152.
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13. **V. Zeitlin**, Acoustic radiation from distributed vortex structures - 1988, *Sov. Phys. Acoustics* **34**, 189 – 191.
14. **V. Zeitlin**, Hamiltonian formalism for Rossby waves - 1989, *Izvestiya: Atm. Ocean Physics* **25**, 948 – 954.
15. **V. Zeitlin**, On algebraization of 2-D ideal fluid hydrodynamical systems and their finite-mode approximations - 1990, *Advances in Turbulence*, **3**, p.257 -260, (A.V. Johansson and P.H. Alfredsson eds, Springer).
16. **V. Zeitlin**, Finite-mode analogs of 2-D ideal hydrodynamics: co-adjoint orbits and local canonical structure - 1991, *Physica D*, **49**, p.353 – 362.
17. **V. Zeitlin**, On the back-reaction of acoustic radiation for distributed vortex structures - 1991, *Phys. Fluids A* **3**, 1677 -1680.
18. **V. Zeitlin**, On the structure of the phase-space, Hamiltonian variables and statistical approach to description of the 2- dimensional hydrodynamics and magnetohydrodynamics - 1992, *J. Phys. A* **25**, L171 -175.
19. **V. Zeitlin**, Vorticity and waves: geometry of phase-space and the problem of normal variables - 1992, *Phys. Letters A* **164**, p 177 -183.
20. **B. Legras** and **V. Zeitlin**, Conformal dynamics for vortex motions - 1992, *Phys. Letters A* **167**, 265 -268.
21. **V. Zeitlin** and **T. Kambe**, 2-dimensional ideal magnetohydrodynamics and differential geometry - 1993, *J. Phys. A* **26**, 5025 – 503.
22. **V. Zeitlin** and **R. Pasmanter**, On the differential geometry approach to geophysical flows -1994, *Phys. Letters A* **189**, 59 - 63.
23. **A. Stegner** and **V. Zeitlin**, What can asymptotic expansions tell us about large-scale quasi- geostrophic vortices? - 1995, *Nonlin. Proc. Geophys.* **2**, 186 - 193.

24. S. Daubner and **V. Zeitlin**, On the Kolmogorov spectra for unidirectional internal gravity waves - 1996, *Phys. Letters A* **214**, 33-39 .
25. S. Edouard , B. Legras and **V. Zeitlin**, The effect of dynamical mixing in a simple model of the ozone hole -1996, *J. Geoph. Res. D* **101**, 16771- 16778.
26. A. Stegner and **V. Zeitlin**, Asymptotic expansions and monopolar solitary Rossby vortices in barotropic and two-layer models - 1996, *Geoph. Astroph. Fluid Dyn.* **83**, 159-194.
27. R.I. McLachlan, I. Szunyogh and **V. Zeitlin**, Hamiltonian finite-dimensional models of the baroclinic instability - 1997, *Phys. Letters A* **229**, 299-305.
28. A. Stegner and **V. Zeitlin**, From quasi-geostrophic to large scale monopolar vortices in a paraboloidal shallow water experiment - 1998, *J. Fluid Mech.* **356**, 1-24.
29. D.D. Holm and **V. Zeitlin**, Hamilton's principle for quasi-geostrophic dynamics - 1998, *Phys. Fluids* **10**, 800-806.
30. F. Dupont, R.I. McLachlan and **V. Zeitlin**, On a possible mechanism of anomalous diffusion by resonant triads of Rossby waves - 1998, *Phys. Fluids* **10**, 3185 – 3193.
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36. **V. Zeitlin**, S. Medvedev and R. Plougonven, Frontal adjustment, slow manifold and nonlinear wave phenomena in 1d rotating shallow water. Part 1. Theory - 2003, *J. Fluid Mech.*, **481**, 269 – 290.
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39. R. Plougonven and **V. Zeitlin**, On finite-amplitude stationary internal inertia-gravity waves propagating without change of form along the sharp density gradients - 2003, *Phys. Lett. A*, **314**, 140 – 149.
40. R. Plougonven, H. Teitelbaum and **V. Zeitlin**, Inertia-gravity wave generation by the tropospheric mid-latitude jet from FASTEX radiosoundings - 2003, *J. Geoph. Res. D*, **D21**, 4686, 14-1 – 14-18.
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48. G.M. Reznik, and **V. Zeitlin**, Resonant excitation of Rossby waves in the equatorial wave-guide and their nonlinear evolution, 2006, *Phys. Rev. Letters*, **96**, N°3, 034502 -1-034502 -5.
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107. Y. Liang, A. Fedorov, **V. Zeitlin**, and P. Haertel, Excitation of the Madden–Julian Oscillation in Atmospheric Adjustment to Equatorial Heating, 2021, *J. Atmos. Sci.*, **78**, 3933–3950.
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