

# Curriculum Vita – Boris Galperin

## 1. PERSONAL

Work Address: College of Marine Science, MSL 138F, University of South Florida,  
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## 2. EDUCATION

1982 Ph.D., Technion - Israel Institute of Technology, Haifa, Israel  
1975 M.A., Latvian State University, Riga, Latvia  
1970 Special School in Physics and Mathematics in Kiev, Ukraine

## 3. ACADEMIC EXPERIENCE

1989-present Associate Professor of Physical Oceanography, University of South Florida  
1987-1989 Research Staff Member, Program in Applied and Computational Mathematics,  
Princeton University  
1983-1987 Research Staff Member, Program in Atmospheric and Oceanic Sciences,  
Princeton University

## 4. PROFESSIONAL EXPERIENCE

1976-1977 Engineer, Central Office of Mechanization and Automatics, Riga, Latvia  
1975-1976 Engineer-Mathematician, State Office for Design and Development of Automated  
Management Systems, Kiev, Ukraine

## 5. PROFESSIONAL SOCIETIES AND ASSOCIATIONS

The American Meteorological Society (AMS)  
The American Physical Society (APS)  
The American Astronomical Society (AAS)  
American Geophysical Union (AGU)  
European Geophysical Society (EGS)

## 6. AWARDS AND HONORARY CITATIONS

2002-2003 USF Outstanding Faculty Research Achievement Award  
2008-2009 USF Outstanding Research Achievement Award  
November 2002 A 2002 PRL paper highlighted in Physics Update, "How Jupiter Got Its Stripes," in  
Physics Today  
June 2004 AGU Press Release "Link Discovered between Earth's Ocean Currents and Jupiter's  
Bands" highlights 2004 GRL paper  
([http://www.agu.org/news/press/pr\\_archives/2004/pr10425.html](http://www.agu.org/news/press/pr_archives/2004/pr10425.html))  
October 2008 A 2008 PRL paper highlighted in the article "Focus: Big Waves from a Small Source"  
by the American Physical Society under the category "Spotlighting exceptional  
research in Physics" (<http://physics.aps.org/story/v22/st14>)

## **7. TEACHING AND RESEARCH INTERESTS**

Geophysical fluid dynamics; turbulence theory; planetary circulations; nonlinear waves; turbulent diffusion; atmospheric, marine and oceanic boundary layers

## **8. GRADUATE STUDENTS**

Jesse Hoemann – PhD candidate  
Esa-Matti Tastula – PhD candidate

## **9. STUDENT COMMITTEES**

### **PhD**

Rachel Walker	
Cigdem Akan	graduated in 2012
Hari Vijayan Warrior	graduated in 2004
Robert William Helber	graduated in 2003
Mark Vincent	graduated in 2002
Nancy Jeanne Schmidt	graduated in 2001
David Carr Burwell	graduated in 2001
Zaihua Ji	graduated in 1997
Lin Qiao	graduated in 1996

### **MS**

Amanda Linville	graduated in 2007
Michelle Valenti	graduated in 1995
Zhen Li	graduated in 1993

## **10. COURSES TAUGHT**

Directed research  
Dissertation  
Fluid Dynamics I  
Fluid Dynamics II  
Geophysical Fluid Dynamics  
Mathematical Tools  
Mathematics for Physicists  
Turbulence and Planetary Boundary Layers  
Spectral Methods in Turbulence  
Introduction to Physical Oceanography  
Numerical Modeling in Physical Oceanography

## **11. BOOKS AND MONOGRAPHS**

1. *Large Eddy Simulation of Complex Engineering and Geophysical Flows*, B. Galperin, and S. Orszag., Eds., (pp. i-620). Cambridge - New York: Cambridge University Press.
2. *Marine Turbulence - Theories, Observations and Models. Results of the CARTUM Project*. Cambridge - New York: Cambridge University Press. Guest Editor for Section 7: *Large-Scale Processes*.
3. *Zonal Jets* – a contract with the Cambridge University Press has been issued.

**12. JOURNAL PUBLICATIONS**

1. Galperin, B., S. Sukoriansky, N. Dikovskaya, R.M.B. Young, P.L. Read, A.J. Lancaster, and D. Armstrong, 2013: Macroturbulence on Jupiter emerging from *Cassini* data. *Icarus*, in preparation.
2. E.-M. Tastula, T. Vihma, E. Andreas, B. Galperin, 2013: Validation of the diurnal cycles in atmospheric reanalyses over Antarctic sea ice. *Journal of Geophysical Research - Atmospheres*, in press.
3. Sukoriansky, S. and B. Galperin, 2012: An analytical theory of the buoyancy - Kolmogorov subrange transition in turbulent flows with stable stratification. *Philos. Trans. Royal Soc. A –Math. Phys. Eng. Sci.*, **371**, SI, UNSP 20120212, DOI: 10.1098/rsta.2012.0212 Published: JAN 13 2013.
4. Sukoriansky, S., N. Dikovskaya, R. Grimshaw, and B. Galperin, 2012: Rossby waves and zonons in zonostrophic turbulence. *AIP Conf. Proc.* **1439**, 111-122; doi: 10.1063/1.3701355.
5. Petrosyan, A., B. Galperin, S.E. Larsen, S.R. Lewis, A. Määttänen, P.L. Read, N. Renno, L.P.H.T. Rogberg, H. Savijarvi, T. Siili, A. Spiga, A. Toigo, L. Vazquez, 2011: The Martian atmospheric boundary layer. *Reviews of Geophysics*, **49**, RG3005, doi: 10.1029/2010RG000351.
6. Galperin, B., and S. Sukoriansky, 2010: Geophysical flows with anisotropic turbulence and dispersive waves: flows with stable stratification. *Ocean Dynamics*, **60**, 1319–1337, doi: 10.1007/s10236-010-0325-z.
7. Galperin, B., and S. Sukoriansky, 2010: Geophysical flows with anisotropic turbulence and dispersive waves: flows with a  $\beta$ -effect. *Ocean Dynamics*, **60**, 427–441, doi:10.1007/s10236-010-0278-2.
8. Sukoriansky, S., N. Dikovskaya, N., and B. Galperin, 2009: Transport of momentum and scalar in anisotropic turbulent flows with dispersive waves. *Geophysical Research Letters*, **36**, L14609, doi:10.1029/2009GL038632.
9. Maximenko, N., P. Niiler, M.H. Rio, O. Melnichenko, L. Centurioni, D. Chambers, V. Zlotnicki and B. Galperin, 2009: Mean dynamic topography of the ocean derived from satellite and drifting buoy data using three different techniques. *Journal of Atmospheric and Oceanic Technology*, **26**, 1910-1919.
10. Sukoriansky, S., and B. Galperin, 2009: Quasi-normal scale elimination theory of turbulence. *International Journal of Pure and Applied Mathematics*, **50**, 301-308.
11. Sukoriansky, S., N. Dikovskaya, N., and B. Galperin, 2008: Nonlinear waves in zonostrophic turbulence. *Physical Review Letters*, **101**, 178501.
12. Galperin, B., S. Sukoriansky, and N. Dikovskaya, 2008: Zonostrophic turbulence. *Physica Scripta*, **T132**, 014034.
13. Sukoriansky, S., and B. Galperin, 2008: Anisotropic turbulence and internal waves in stably stratified flows (QNSE theory). *Physica Scripta*, **T132**, 014036.
14. Sukoriansky, S., N. Dikovskaya, N., and B. Galperin, 2007: On the "arrest" of inverse energy cascade and the Rhines scale. *Journal of the Atmospheric Sciences*, **64**, 3312-3327.
15. Galperin, B., S. Sukoriansky, and P.S. Anderson, 2007: On the critical Richardson number in stably stratified turbulence. *Atmospheric Science Letters*, **8**, 65-69, DOI: 10.1002/asl.153.
16. Galperin, B., S. Sukoriansky, N. Dikovskaya, P.L. Read, Y. Yamazaki, and R. Wordsworth, 2006: Anisotropic turbulence and zonal jets in rotating flows with a beta-effect. *Nonlinear Processes in Geophysics*, **13**, 83-98.
17. Sukoriansky, S., B. Galperin, and V. Perov, 2006: A quasi-normal scale elimination model of turbulence and its application to stably stratified flows. *Nonlinear Processes in Geophysics*, **13**, 9-22.
18. Sukoriansky, S., B. Galperin, and V. Perov, 2005: Application of a new spectral theory of stably stratified turbulence to atmospheric boundary layer over sea ice. *Boundary-Layer Meteorology*, **117**, 231-257.
19. Sukoriansky, S., B. Galperin, and I. Staroselsky, 2005: A quasi-normal scale elimination model of turbulent flows with stable stratification. *Physics of Fluids*, **17**, 085107.
20. Galperin, B., H. Nakano, H.-P. Huang, and S. Sukoriansky, 2004: The ubiquitous zonal jets in the atmospheres of giant planets and Earth's oceans. *Geophysical Research Letters*, **31**, L13303.
21. Hassid, S., and B. Galperin, 2004: A Comment on the Cheng, Canuto and Howard "An improved model for the Turbulent PBL". *Journal of the Atmospheric Sciences*, **61**, 1197-1199.
22. Sukoriansky, S., B. Galperin, and I. Staroselsky, 2003: Cross-term and  $\varepsilon$ -expansion in RNG theory of turbulence. *Fluid Dynamics Research*, **33**, 319-331.
23. Sukoriansky, S., B. Galperin, and N. Dikovskaya, 2002: Universal spectrum of two-dimensional turbulence on rotating sphere and some basic features of atmospheric circulations on giant planets. *Physical Review Letters*, **89**, 124501.
24. Galperin, B., S. Sukoriansky, and H.-P. Huang, 2001: Universal  $n^{-5}$  spectrum of zonal flows on giant

- planets. *Physics of Fluids*, **13**, 1545-1548.
25. Huang, H., B. Galperin, and S. Sukoriansky, 2001: Anisotropic spectra in two-dimensional turbulence on the surface of a rotating sphere. *Physics of Fluids*, **13**, 225-240.
  26. Livingston, R., I. Lewis, G. Woodsum, X. Niu, B. Galperin, W. Huang, J. Christensen, M. Monaco, T. Battista, J. Klein, I. Howell, and G. Ray, 2000: Modelling oyster population response to variation in freshwater input. *Estuarine, Coastal & Shelf Science*, **50**, 655-672.
  27. Sukoriansky, S., B. Galperin, and A. Chekhlov, 1999: Large-scale drag representation in simulations of two-dimensional turbulence. *Physics of Fluids*, **11**, 3043-3053.
  28. Chekhlov, A., S. Orszag, S. Sukoriansky, B. Galperin, and I. Staroselsky, 1996: The effect of small-scale forcing on large-scale structures in two-dimensional flows. *Physica D*, **98**, 321-334.
  29. Sukoriansky, S., A. Chekhlov, B. Galperin, S. Orszag, and I. Staroselsky, 1995: Large eddy simulation of two-dimensional isotropic turbulence. *Journal of Scientific Computing*, **11**(1), 13-45.
  30. Hassid, S., and B. Galperin, 1994: Modeling rotating flows with neutral and unstable stratification. *Journal of Geophysical Research - Oceans*, **99**, 12,533 -12,548.
  31. Chekhlov, A., S.A. Orszag, S. Sukoriansky, B. Galperin, and I., Staroselsky, 1994: Direct numerical simulation tests of eddy viscosity in two dimensions. *Physics of Fluids*, **6**, 2548-2550.
  32. Galperin, B., S. Sukoriansky, and I. Staroselsky, 1993: Eddy Rossby wave frequency in beta-plane turbulence. *Physics of Fluids*, **5**, 2083-2085.
  33. Blumberg, A., B. Galperin, and D. O'Connor, 1992: Modelling vertical structure of open channel flows. *ASCE Journal of Hydraulic Engineering*, **118**, 1119-1134.
  34. Galperin, B., and G.L. Mellor, 1991: The effects of streamline curvature and spanwise rotation on near-surface, turbulent boundary layers. *Journal of Applied Mathematics and Physics (ZAMP)*, **42**, 565-583.
  35. Galperin, B., and G.L. Mellor, 1990: Time-dependent, three-dimensional model of the Delaware Bay and river system. Part 1: Description of the model and tidal analysis. *Estuarine, Coastal & Shelf Science*, **31**, 231-253.
  36. Galperin, B., and G.L. Mellor, 1990: Time-dependent, three-dimensional model of the Delaware Bay and river system. Part 2: Three-dimensional flow fields and residual circulation. *Estuarine, Coastal & Shelf Science*, **31**, 255-281.
  37. Galperin, B., and L.H. Kantha, 1990: Reply By Authors to G.D. Stublely and G. Riopelle. *AIAA Journal*, **28**, 1847.
  38. Galperin, B., and L.H. Kantha, 1989: Turbulence model for rotating flows. *AIAA Journal*, **27**, 750-757.
  39. Galperin, B., A. Rosati, L.H. Kantha, and G.L. Mellor, 1989: Modeling rotating stratified turbulent flows with application to oceanic mixed layers. *Journal of Physical Oceanography*, **19**, 901-916.
  40. Kantha, L., A. Rosati, and B. Galperin, 1989: Effect of rotation on vertical mixing and associated turbulence in stratified fluids. *Journal of Geophysical Research*, **94**, 4843-4854.
  41. Galperin, B., 1989: A second-moment closure model for MHD turbulence. *Journal of Applied Mathematics and Physics (ZAMP)*, **40**, 740-757.
  42. Galperin, B., L.H. Kantha, S. Hassid, and A. Rosati, 1988: A quasi-equilibrium turbulent energy model for geophysical flows. *Journal of the Atmospheric Sciences*, **45**, 55-62.
  43. Hassid, S., and B. Galperin, 1986: A modified turbulent energy model for geophysical flows: Influence of the ground proximity. *Boundary-Layer Meteorology*, **35**, 155-165.
  44. Galperin, B., 1986: A modified turbulent energy model for diffusion from elevated and ground point sources in neutral boundary layers. *Boundary-Layer Meteorology*, **37**, 245-262.
  45. Hassid, S., and B. Galperin, 1984: A turbulent energy model for diffusion in the convective boundary layer. *Atmospheric Environment*, **18**, 1081-1089.
  46. Hassid, S., and B. Galperin, 1984: A two-layer model for the barotropic stationary turbulent planetary boundary layer. *Israel Journal of Technology*, **22**, 233-242.
  47. Hassid, S. and B. Galperin, 1983: A turbulent energy model for geophysical flows. *Boundary-Layer Meteorology*, **26**, 397-412.
  48. Hassid, S., and B. Galperin, 1983: The development of the internal boundary layer in a stably stratified medium. *Israel Journal of Technology*, **21**, 214-220.
  49. Merkulov, V., and B. Galperin, 1976: Stability of conductive magnetic liquid-metal suspension. *Magneto hydrodynamics*, **51**, 171-176.

### **13. BOOK CHAPTERS OR SEGMENTS OF A BOOK**

1. Read, P.L., B. Galperin, S.E. Larsen, S.R. Lewis, A. Määttänen, A. Petrosyan, N. Renno, H. Savijärvi, T. Siili, A. Spiga, A. Toigo, and L. Vázquez, 2012: The Martian Planetary Boundary Layer. R. Haberle, Editor.

2. Sukoriansky, S., and B. Galperin, 2005: Subgrid- and supergrid-scale parameterization of turbulence in quasi-two-dimensional barotropic flows and the phenomenon of negative viscosity. In: *Marine Turbulence - Theories, Observations and Models. Results of the CARTUM Project.* Cambridge - New York: Cambridge University Press.
3. Galperin, B., and S. Sukoriansky, 2005: Energy spectra and zonal flows on beta-plane, rotating sphere, and giant planets. In: *Marine Turbulence – Theories, Observations and Models. Results of the CARTUM Project.* Cambridge - New York: Cambridge University Press.
4. Sukoriansky, S., and B. Galperin, 2005: A spectral closure model for turbulent flows with stable stratification. In: *Marine Turbulence - Theories, Observations and Models. Results of the CARTUM Project.* Cambridge - New York: Cambridge University Press.
5. Burwell, D., M. Vincent, M. Luther, and B. Galperin, 2000: Modeling residence times: Eulerian vs Lagrangian. In: *Estuarine and Coastal Modeling*, M. L. Spaulding and H. L. Butler, eds., ASCE, Reston, VA, pp 995-1009.
6. Burwell, D., M. Vincent, M. Luther, and B. Galperin, 2000: Modeling residence times: Eulerian vs Lagrangian, *Estuarine and Coastal Modeling. Proceedings of the 6th International Conference*, pp. 995-1009. New Orleans, La: ASCE.
7. Galperin, B., A. Squires, G. Vargo, K. Fanning, and R. Weisberg, 1995: Review and synthesis of historical Tampa Bay water quality data. *Florida Scientist. Symposium on human impacts on the environment of Tampa Bay. Special publication, Quarterly Journal of the Florida Academy of Sciences*, **58**, 228-233. Indialantic, Florida: Florida Academy of Sciences.
8. Galperin, B., S. Sukoriansky, and I. Staroselsky, 1994: Large-Scale Dynamics of Two-Dimensional Turbulence with Rossby Waves, *Progress in Turbulence Research. Progress in Astronautics and Aeronautics*, **162**, 108-120. Washington, DC: American Institute of Astronautics and Aeronautics.
9. Galperin, B., W.K. Jones, and T. Wu, 1993: Influence of Sikes Cut on Apalachicola Bay: A Preliminary Look at Two- and Three-Dimensional Modeling, 3rd International Conference on Estuarine and Coastal Modeling. Chicago, Illinois: ASCE.
10. Galperin, B., A.F. Blumberg, and R. Weisberg, 1992: The Importance of Density Driven Circulation in Well Mixed Estuaries: The Tampa Bay Experience, *Estuarine and Coastal Modeling. Proceedings of the 2nd International Conference on Estuarine and Coastal Modeling/WW Div. ASCE*, pp. 332-343, New York: ASCE.
11. Galperin, B., Blumberg, A. (1990). On the Summer Circulation in New York Bight and Contiguous Estuarine Waters, *Coastal and Estuarine Studies*, **38**, 451-468. New-York: Springer-Verlag, New York.
12. Galperin, B., and G.L. Mellor, 1990: Salinity intrusion and residual circulation in Delaware Bay during the drought of 1984: Residual currents and long-term transport. *Coastal and Estuarine Studies*, **38**, 469-480. New-york: Springer-Verlag New York, Inc.
13. Oey, L., G.L. Mellor, R. Hires, and B. Galperin, 1985: Three-Dimensional Numerical Models for Hindcasting or Forecasting Estuarine Tides, Currents and Salinities, *Application of Real-Time Oceanographic Circulation Modeling*. Washington D.C.: Marine Technology Society.

#### **14. OTHER PUBLICATIONS**

1. Sukoriansky, S., and Galperin, B., 2008: A quasi-normal scale elimination (QNSE) theory of turbulent flows with stable stratification and its application in weather forecast systems. 6th IASME/WSEAS International Conference on Heat Transfer, Thermal Engineering and Environment, August 20-22, 2008, Rhodes (Rodos) Island, Greece.
2. Galperin, B., and S. Sukoriansky, 2005: A new spectral theory of turbulent flows with stable stratification. *The Ringberg Workshop on Interdisciplinary Aspects of Turbulence, 18-22 April 2005*, Ringberg, Germany.
3. Galperin, B., S. Sukoriansky, and N. Dikovskaya, 2005: Anisotropic large-scale turbulence and zonal jets in computer simulations, in the laboratory, on giant planets and in the ocean. *Ringberg Workshop on Interdisciplinary Aspects of Turbulence, 18-22 April 2005*, Ringberg, Germany.
4. Vincent, M., M.E. Luther, D. Burwell, and B. Galperin, 2000: A numerical modeling investigation of a proposed desalination facility at Big Bend, Tampa Bay, Florida, Phases I and II: Model Calibration and Individual Effects. University of South Florida College of Marine Science, St. Petersburg, 597 pp.
5. Vincent, M., M.E. Luther, D. Burwell, and B. Galperin, 2000: A numerical modeling investigation of a proposed desalination facility at Big Bend, Tampa Bay, Florida, Phase III: Cumulative Effects. University of South Florida College of Marine Science, St. Petersburg, 388 pp.
6. Galperin, B., H.-P. Huang, and S. Sukoriansky, 1999: Anisotropic spectra in two-dimensional

- turbulence on a rotating sphere. *12th Conference on Atmospheric and Oceanic Fluid Dynamics*.
7. Vincent, M., D. Burwell, M.E. Luther, and B. Galperin, 1998: Real-time data acquisition and modeling in Tampa Bay. in *Estuarine and Coastal Modeling*, M. Spaulding and A. Blumberg, eds., ASCE, Reston, VA, pp 427-440.
  8. Luther, M., Galperin, B., Vincent M., Burwell D., R. Pribble, and A. Janicki, 1998: Potential effects of Tampa Bay Water surface water projects on salinity and circulation in Tampa Bay: results of the use of the USF three-dimensional hydrodynamic model. Prepared for Tampa Bay Water by Post, Buckley, Schuh, and Jernigan, Inc.; Tampa, FL; 134 pp.
  9. Schmidt, N., M. E. Luther, M. Vincent. B. Galperin, and D. Burwell, 1997: An Integrated End-to-End Marine Contaminant Management System for Tampa Bay. Presented at the Estuarine Research Federation 1997 Meeting, October 14, 1997, Providence, RI.
  10. Schmidt, N., M. Vincent, M. E. Luther, and B. Galperin, 1997: Development of an end-to-end marine contaminant system. in *Proceedings of the Bay Area Scientific Information Symposium 3*, S. F. Treat, ed., pp 25-41, Tampa Bay Regional Planning Council, St. Petersburg, FL.
  11. Vincent, M., D. Burwell, M.E. Luther, and B. Galperin, 1997: Real-time data acquisition and modeling in Tampa Bay. *Proceedings of the 5th International Conference on Estuarine and Coastal Modeling*, 427-440.
  12. Vincent, M., B. Galperin, and M.E. Luther, 1995: Development and application of a real-time three-dimensional hydrodynamic model of Tampa Bay, Florida. Presented at the Coastal Zone '95 Conference, Tampa, FL, July 17-22, 1995.
  13. Sukoriansky, S., I. Staroselsky, and B. Galperin, 1993: Renormalization Group Theory of Turbulence and Waves on the Beta-Plane. *Proceedings of the Thirteenth Symposium on Turbulence, University of Missouri-Rolla*.
  14. Galperin, B., S. Sukoriansky, S.A. Orszag, and I. Staroselsky, 1993: Non-eddy-resolving modeling of beta-plane turbulence. *Statistical Methods in Physical Oceanography. Proceedings of the 7th Aha Huliko'a Hawaiian Winter Workshop*, 421-452.
  15. Galperin, B., A.F. Blumberg, and R. Weisberg, R., 1991: A Time-Dependent, Three-Dimensional Model of Circulation in Tampa Bay. *Proceedings, Tampa Bay Area Scientific Information Symposium*, 2, 77-97.
  16. Galperin, B., and L.H. Kantha, 1988: A Turbulence Model for Rotating Flows. *Proceedings of the First National Fluid Dynamics Congress*.

## **15. PRESENTATIONS**

1. Galperin, B., S. Sukoriansky, N. Dikovskaya, R.M.B. Young, P.L. Read, A.J. Lancaster, and D. Armstrong, Macro-turbulence on Jupiter as emerging from Cassini data. Geostrophic Turbulence and Active Tracer Transport in 2 Dimensions, Princeton Center for Theoretical Science, Princeton University, March 13-15, 2013.
2. **Boris Galperin, University South Florida**
3. Galperin, B., S. Sukoriansky, QNSE theory of anisotropic turbulence and dispersive waves in stably stratified atmosphere and oceans. Wave-Turbulence Interactions in Stable Atmospheric Boundary Layers (WINABL), July 23-27, 2012. National Center for Atmospheric Research, Boulder, Colorado.
4. Galperin, B., S. Sukoriansky, N. Dikovskaya, Rossby waves and zonons in zonostrophic turbulence. British Applied Mathematics Colloquium, 28 March, 2012.
5. Galperin, B., Zonal jets and eddies – planetary science and satellite oceanography at the crossroads. International Space Science Institute, Bern, Switzerland, March 5, 2012.
6. Galperin, B., S. Sukoriansky, N. Dikovskaya, Mean flows and waves in beta-plane turbulence. 2012 Ocean Sciences Meeting, Salt Lake City, 23 February 2012.
7. Galperin, B., S. Sukoriansky, N. Dikovskaya, Rossby waves and solitary waves (zonons) in  $\beta$ -plane turbulence. Rotating Fluids 2012. University College London, 6 January 2012.
8. Galperin, B., S. Sukoriansky, N. Dikovskaya, Rossby waves and solitary waves (zonons) in  $\beta$ -plane turbulence. AGU Fall Meeting 2011. San-Francisco, December 8, 2011.
9. Galperin, B., S. Sukoriansky, N. Dikovskaya, Rossby waves and zonons in zonostrophic turbulence. Atmospheric, Oceanic and Planetary Physics, University of Oxford, November 25, 2011.
10. Galperin, B., S. Sukoriansky. An analytical theory of the Kolmogorov-buoyancy subrange transition in stably stratified turbulent flows. Turbulent Mixing and Beyond, Third International Conference The Abdus Salam International Centre for Theoretical Physics. Strada Costiera 11, 34014 Trieste, Italy, 21 - 28 August, 2011.

11. Galperin, B., S. Sukoriansky, J. Pergaud, Hybrid QNSE-EDKF model of PBL in WRF. NWP Workshop on Model Physics with an Emphasis on Short-Range Prediction, Washington D.C., July 26-28, 2011.
12. Galperin, B., S. Sukoriansky, N. Dikovskaya, Zonostrophic turbulence, zonal jets and mixing barriers. 2011 Program of Study in Geophysical Fluid Dynamics Woods Hole Oceanographic Institution Woods Hole, 18 July 2011.
13. Galperin, B., S. Sukoriansky. An analytical theory of the Kolmogorov-buoyancy subrange transition in stably stratified turbulent flows. Department of Civil and Environmental Engineering DICEA, Sapienza Università di Roma, Italy. 5 July 2011.
14. Galperin, B., S. Sukoriansky, N. Dikovskaya, Zonostrophic turbulence, zonal jets and mixing barriers. Department of Civil and Environmental Engineering DICEA, Sapienza Università di Roma, Italy, 4 July 2011.
15. Sukoriansky, S., N. Dikovskaya, B. Galperin, Nonlinear waves (zonons) in zonostrophic turbulence. Waves and instabilities in space and astrophysical plasmas. Eilat, June 19-24, 2011.
16. Galperin, B., S. Sukoriansky. An analytical theory of the Kolmogorov-buoyancy subrange transition in stably stratified turbulent flows. Imperial College, London. 16 June 2011.
17. Galperin, B., S. Sukoriansky. An analytical theory of the Kolmogorov-buoyancy subrange transition in stably stratified turbulent flows. Wave-flow interactions A network in mathematics: fourth meeting. Cambridge University, 11-15 April 2011.
18. Galperin, B., S. Sukoriansky, N. Dikovskaya, Zonostrophic turbulence, zonal jets and the mixing barriers. Department of Meteorology, University of Reading, Reading, UK, 6 January 2011.
19. Galperin, B., S. Sukoriansky, N. Dikovskaya, Zonostrophic turbulence, zonal jets and the mixing barriers. Faculty of Engineering, Tel-Aviv University, 19 December 2010.
20. Galperin, B., S. Sukoriansky, Turbulence-wave interaction in flows with stable stratification: spectral viewpoint. *Topographic internal waves in the atmosphere and ocean* Cargèse (Corsica), France, November 2-11, 2010.
21. Galperin, B., S. Sukoriansky, N. Dikovskaya, Zonostrophic turbulence, zonal jets and the mixing barriers. RSMAS, University of Miami, 15 October 2010.
22. Galperin, B., S. Sukoriansky, J. Pergaud, Current state of QNSE PBL model in WRF. The Third International Workshop on Next-Generation NWP Models. 29 August –1 September 2010, Jeju Island, Korea.
23. Galperin, B., S. Sukoriansky, Diffusion of momentum and scalar in anisotropic 2D and 3D turbulence with dispersive waves. Wave-flow interactions. A network in mathematics: third meeting. University of St Andrews, 14-18 June 2010.
24. Galperin, B., S. Sukoriansky, Zonal jets and nonlinear waves in turbulence with a  $\beta$ -effect. Laboratoire de Météorologie Dynamique Ecole Normale Supérieure Paris, France, June 30, 2010.
25. Galperin, B., S. Sukoriansky, Zonal jets and nonlinear waves in turbulence with a  $\beta$ -effect. National Oceanography Centre, University of Southampton, March 10, 2010, UK.
26. Galperin, B., S. Sukoriansky, Transport of momentum and scalars in anisotropic turbulence with dispersive waves. 2010 Ocean Sciences Meeting, 22-26 February 2010, Portland, Oregon.
27. Galperin, B., S. Sukoriansky, Turbulent transport of momentum and scalars in geophysical flows. Department of Mathematics, Imperial College London, January 26, 2010, UK.
28. Galperin, B., S. Sukoriansky, Turbulent transport of momentum and scalars in geophysical flows. Department of Applied Mathematics and Theoretical Physics, University of Cambridge, Cambridge, December 21, 2009, UK.
29. Galperin, B., S. Sukoriansky, Turbulent transport processes in atmospheres and oceans. Department of Atmospheric, Oceanic and Planetary Physics, Oxford University, Oxford, November 19, 2009, UK.
30. Galperin, B., S. Sukoriansky, Turbulent transport of momentum and scalars in geophysical flows. Ocean-Atmosphere Energy Transport Conference, Caltech, November 5-7, 2009, Pasadena, California.
31. Galperin, B., S. Sukoriansky, Modeling of turbulent transfer of momentum and scalars in geophysical flows. NRL – Stennis Space Center, October 28, 2009, Mississippi.
32. Galperin, B., S. Sukoriansky, and N. Dikovskaya, Turbulent diffusion of momentum and scalar in flows with internal and Rossby waves. 9<sup>th</sup> EMS Annual Meeting, 28 September – 02 October, 2009, Meteo France, Toulouse, France.
33. Sukoriansky, S., B. Galperin, and N. Dikovskaya, Turbulent transport and waves in zonostrophic turbulence, EUROMECH European Turbulence Conference ETC12, Marburg, September 2009, Germany.
34. Galperin, B., S. Sukoriansky, Transport of momentum and tracers in the turbulent ocean. National

- Oceanography Centre, Southampton, August 5, 2009, UK.
35. Galperin, B., S. Sukoriansky, Large-scale and small-scale mixing in turbulence with anisotropic dispersive waves. National Institute of Biology, Piran, Slovenia, July 29, 2009.
  36. Galperin, B., S. Sukoriansky, Anisotropic large-scale circulation and transport in zonostrophic turbulence, Tutorial. Turbulent Mixing and Beyond. International Conference and Advanced School The Abdus Salam International Centre for Theoretical Physics, Trieste, Italy, 27 July - 07 August, 2009.
  37. Sukoriansky, S., and B. Galperin, A quasi-normal theory of turbulence and its applications in geophysical fluid dynamics, Tutorial. Turbulent Mixing and Beyond. International Conference and Advanced School The Abdus Salam International Centre for Theoretical Physics, Trieste, Italy, 27 July - 07 August, 2009.
  38. Galperin, B., S. Sukoriansky, and A. Grantinger, Verification of the QNSE turbulence model in WRF. WRF PBL working group meeting, June 23, 2009, NCAR, Boulder, Colorado.
  39. Galperin, B., and S. Sukoriansky, Large-scale and small-scale mixing in turbulence with anisotropic dispersive waves. Physical Oceanography Review Symposium, June 9, 2009, Chicago, IL.
  40. Galperin, B., and S. Sukoriansky, Transport of momentum and scalar in turbulent flows with anisotropic dispersive waves. Wave-flow interactions, E-Science Institute, University of Edinburgh, Edinburgh, UK, May 26, 2009.
  41. Galperin, B., and S. Sukoriansky, Transport of momentum and scalar in turbulent flows with anisotropic dispersive waves. The Technion – Israel Institute of Technology, May 18, 2009, Haifa, Israel.
  42. Galperin, B., and S. Sukoriansky, Transport of momentum and scalar in turbulent flows with anisotropic dispersive waves. University College London, April 27, 2009, London, England.
  43. Galperin, B., and S. Sukoriansky, A quasi-normal scale elimination (QNSE) theory of stably stratified turbulence. Invited presentation at the Workshop on Modeling the Ocean: Dynamics, Syntheses & Predictions. February 23-26, 2009, Taipei, Taiwan.
  44. Galperin, B., S. Sukoriansky, and N. Dikovskaya, Nonlinear waves (zonons) in zonostrophic turbulence. Invited presentation at the Workshop on Modeling the Ocean: Dynamics, Syntheses & Predictions. February 23-26, 2009, Taipei, Taiwan.
  45. Galperin, B., and S. Sukoriansky. Advanced parameterization and modeling of turbulent atmospheric boundary layers. Army Atmospheric Sciences Overview Rayleigh-Durham, NC, February 4, 2009.
  46. Galperin, B., S. Sukoriansky, and N. Dikovskaya. Nonlinear waves (zonons) in zonostrophic turbulence. Invited presentation at the Workshop on Structures and Waves in Anisotropic Turbulence. Warwick Mathematics Institute, Warwick University, November 6, 2008, Warwick, UK.
  47. Galperin, B., and S. Sukoriansky, QNSE theory of stably stratified turbulence. A tutorial of four 1.5 lectures at the Meteorology Department, Penn State University, October 27-28, 2008, University College Park, Pennsylvania.
  48. Galperin, B., S. Sukoriansky, and E. Atlaskin. QNSE-based surface layer parameterization in simulations of stably stratified atmospheric boundary layers. 8th Annual Meeting of the European Meteorological Society, October 1, 2008, Amsterdam, The Netherlands.
  49. Sukoriansky, S., and B. Galperin. Quasi-normal scale elimination (QNSE) theory of turbulence. Invited presentation at the Fifth International conference on Applied Mathematics and Computing, August 12-18, 2008, Plovdiv, Bulgaria.
  50. Sukoriansky, S., and B. Galperin. A quasi-normal scale elimination (QNSE) theory of turbulent flows with stable stratification and its application in weather forecast systems. 6th IASME/WSEAS International Conference on Heat Transfer, Thermal Engineering and Environment, August 20-22, 2008, Rhodes (Rodos) Island, Greece.
  51. Galperin, B., and S. Sukoriansky. A quasi-normal scale elimination (QNSE) model of stably stratified turbulence and its implementation in oceanography and meteorology. Invited presentation at Meteo France, July 23, 2008, Toulouse, France,
  52. Galperin, B., and S. Sukoriansky. A quasi-normal scale elimination (QNSE) model of stably stratified turbulence and its implementation in oceanography and meteorology. Invited presentation at the Department of Atmospheric, Oceanic and Planetary Physics, Oxford University, July 16, 2008, Oxford, UK.
  53. Galperin, B., and S. Sukoriansky. A quasi-normal scale elimination (QNSE) model of stably stratified turbulence and its implementation in oceanography and meteorology. Invited presentation at the UK Met Office, July 9, 2008, Exeter, UK.
  54. Galperin, B., and S. Sukoriansky. A quasi-normal scale elimination (QNSE) model of stably



- stratified turbulence and its implementation in oceanography and meteorology. Invited presentation at the European Centre for Medium-Range Weather Forecasts, July 3, 2008, Reading, England.
55. Sukoriansky, S., and B. Galperin. QNSE-based turbulence model and surface layer parameterization and their implementation in WRF. WRF PBL working group meeting, June 23, 2008, NCAR, Boulder, Colorado.
  56. Galperin, B., and S. Sukoriansky. A quasi-normal scale elimination (QNSE) theory of stably stratified turbulence. Invited presentation at the Seminar on new developments in modelling ABLs for NWP, Finnish Meteorological Institute, June 17, 2008, Helsinki, Finland.
  57. Atlaskin, E., S. Sukoriansky, and B. Galperin. Implementation of the QNSE-based PBL scheme and surface layer parameterization in HIRLAM. 18th Symposium on Boundary Layers and Turbulence, 9-13 June 2008, Stockholm, Sweden.
  58. Galperin, B., and S. Sukoriansky. A quasi-normal scale elimination (QNSE) model of stably stratified turbulence and its implementation in oceanography and meteorology. Invited presentation at the Czech Meteorological and Hydrological Institute, May 22, 2008, Prague, Czech Republic.
  59. Galperin, B., and S. Sukoriansky. A quasi-normal scale elimination (QNSE) model of stably stratified turbulence and its implementation in oceanography and meteorology. Invited presentation at the Institute for Atmospheric and Climate Science, May 19, 2008, ETH-Zurich, Switzerland.
  60. Galperin, B., S. Sukoriansky, and N. Dikovskaya. Zonostrophic turbulence in various environments. Invited presentation at the International Space Science Institute Bern, Switzerland, May 14, 2008.
  61. Galperin, B., and S. Sukoriansky. A quasi-normal scale elimination (QNSE) model of stably stratified turbulence and its implementation in oceanography and meteorology. Invited presentation at the International Space Science Institute Bern, Switzerland, May 13, 2008.
  62. Galperin, B., S. Sukoriansky, and N. Dikovskaya. Zonostrophic turbulence – A paradigm of zonation in the Earth’s oceans and on giant planets. 2008 AGU Ocean Sciences Meeting, March 2-7, 2008, Orlando, Florida.
  63. Galperin, B., S. Sukoriansky, and N. Dikovskaya. Zonostrophic turbulence in various environments. Workshop on zonal jets in rotating turbulent flows of cryogenic helium, February 25-26, 2008, USF, St. Petersburg, Florida.
  64. Galperin, B., Sukoriansky, S., and Perov, V., A quasi-normal scale elimination (QNSE) model of stably stratified turbulence and its implementation in oceanography and meteorology. Technion – Israel Institute of Technology, Haifa, November 21, 2007, Israel.
  65. Galperin, B., Sukoriansky, S., Zonostrophic turbulence: A paradigm of zonation in the Earth's oceans and on giant planets. Applied Physics Laboratory, University of Washington, Seattle, November 9, 2007
  66. Galperin, B., Sukoriansky, S., A quasi-normal scale elimination (QNSE) theory of turbulent flows with stable stratification and its application in oceanography and meteorology. Applied Physics Laboratory, University of Washington, Seattle, November 8, 2007.
  67. Galperin, B., Sukoriansky, S., Zonostrophic turbulence: A paradigm of zonation on giant planets and in the Earth’s oceans. The NASA Workshop on Planetary Atmospheres, Greenbelt, Maryland, November 6–7, 2007.
  68. Galperin, B., Sukoriansky, S., and Perov, V., *Implementation of the quasi-normal scale elimination (QNSE) turbulence theory in HIRLAM and WRF*. 7<sup>th</sup> European Meteorological Society Annual Meeting at San Lorenzo de El Escorial, Spain, 1–5 October 2007.
  69. Sukoriansky, S., Galperin, B., and Perov, V., *A Quasi-Normal Scale Elimination (QNSE) theory of turbulent flows with stable stratification*. 18<sup>th</sup> French Congress on Mechanics, August 27-31, Grenoble, France.
  70. Sukoriansky, S., Galperin, B., and Perov, V., *Anisotropic turbulence and internal waves in stably stratified flows (QNSE theory)*. International conference “Turbulent mixing and beyond,” the Abdus Salam International Center for Theoretical Physics, August 17-26, Trieste, Italy.
  71. Galperin, B., Sukoriansky, S., and Dikovskaja, N., *Zonostrophic turbulence*. International conference “Turbulent mixing and beyond,” the Abdus Salam International Center for Theoretical Physics, August 17-26, Trieste, Italy.
  72. Galperin, B., Sukoriansky, S., and Perov, V., *A quasi-normal scale elimination (QNSE) model of stably stratified turbulence*. WRF PBL working group meeting June 11 – 15, 2007, Boulder, Colorado.
  73. Galperin, B., Sukoriansky, S., and Perov, V., *Implementation of the quasi-normal scale elimination (QNSE) turbulence model in WRF*. WRF PBL working group meeting June 11 – 15, 2007, Boulder,

- Colorado.
74. Galperin, B., Sukoriansky, S., Perov, V., and Anderson, P.S., *A spectral model of stably-stratified flows*. ARENA workshop "Site testing at Dome C," Rome, June 11-13, 2007 (presented by Phil Anderson).
  75. Galperin, B., and Sukoriansky, S., *A quasi-normal scale elimination (QNSE) theory of stably stratified turbulence*. 39th International Liège Colloquium on Ocean Dynamics, Liège, Belgium, May 11, 2007.
  76. Perov, V., Sukoriansky, S., Galperin, B., *Atmospheric surface layer parameterization in a weather prediction system HIRLAM*. European Geosciences Union General Assembly 2007, Vienna, Austria, 15 – 20 April 2007.
  77. Galperin, B., Sukoriansky, S., Dikovskaya, N., *Zonostrophic Turbulence*. Workshop on 2D turbulence, Lorentz Center, University of Leiden, Leiden, The Netherlands, March 2007.
  78. Perov, V., Galperin, B., Sukoriansky, S., *Implementation of the quasi-normal scale elimination theory of turbulence in HIRLAM: Influence on prediction PBL clouds and turbulent fluxes*. CBL07/ NetFAM meeting at Meteo-France, Toulouse, France, March 2007.
  79. Sukoriansky S., Galperin B., *2D turbulence in the energy subrange as a non-linear Kuramoto-Sivashinsky syste*. Workshop on 2D turbulence, Lorentz Center, University of Leiden, Leiden, The Netherlands, March 2007.
  80. Galperin, B., Sukoriansky, S., Dikovskaya, N., *Inverse energy cascade, the Rhines scale, Rossby-Haurwitz waves, and large-scale circulations on giant planets and in the terrestrial oceans*. Institute for Mathematical Sciences and Department of Aeronautics, Imperial College London, UK, February 2007.
  81. Galperin, B., Sukoriansky, S., Dikovskaya, N., *On the "arrest" of inverse energy cascade and the Rhines's scale*. 59th Annual Meeting of the APS Division of Fluid Dynamics, Tampa, Florida, November 2006.
  82. Galperin, B., Sukoriansky, S., Perov, V., *Quasi-normal spectral closure in stably-stratified flows*. Sedona, Arizona, November 2006.
  83. Galperin, B., Sukoriansky, S., Perov, V., *QNSE-based parameterizations in WRF and HIRLAM*. Sedona, Arizona, November 2006.
  84. Galperin, B., Sukoriansky, S., *A new spectral theory of turbulent flows with stable stratification*. Old Dominion University, Norfolk, Virginia, November 2006.
  85. Galperin, B., S. Sukoriansky, N. Dikovskaya, *Inverse energy cascade, the Rhines scale, Rossby waves, and large-scale circulations on giant planets and in the terrestrial oceans*. NCAR/UCAR, Boulder, Colorado, October 2006.
  86. Sukoriansky, S., Galperin, B., *A new spectral theory of turbulent flows with stable stratification*. UCAR/ NCAR, Boulder, Colorado, October 2006.
  87. Sukoriansky, S., Galperin, B., Perov, V. *A new spectral theory of turbulence and heat transfer in stably stratified flows*. Fifth International Symposium on Turbulence, Heat and Mass Transfer, Dubrovnik, Croatia, September 2006..
  88. Galperin, B., S. Sukoriansky, N. Dikovskaya, *Inverse energy cascade, the Rhines scale, and large-scale circulations on giant planets and in the terrestrial oceans*. Department of Applied Mathematics and Theoretical Physics, Cambridge University, UK, July 2006.
  89. Galperin, B., *A quasi-normal scale elimination (QNSE) theory of turbulence*. Monterey, CA: Naval Research Laboratory, May 2006.
  90. *Implementation of the quasi-normal scale elimination theory in models of ABLs*. San Diego, CA: American Meteorological Society, May 2006.
  91. Galperin, B., Sukoriansky, S., Perov, V., *A quasi-normal scale elimination (QNSE) theory of turbulence ABLs*. Dubrovnik, Croatia: NATO Conference.
  92. Galperin, B., Sukoriansky, S., Perov, V., *Implementation of the quasi-normal scale elimination theory of turbulence in a regional weather prediction model HIRLAM*. EGU Assembly, Vienna, April 2006.
  93. Galperin, B., Sukoriansky, S., Dikovskaya, N., *Anisotropic turbulence, waves and zonal jets on the surface of a rotating sphere*. Honolulu, HI: American Geophysical Union - Ocean Sciences, February 2006.
  94. Galperin, B., *Anisotropic Large-Scale Turbulence, Waves and Zonal Jets in Flows with Beta-Efect*. Honolulu, HI: University of Hawaii, February 2006.
  95. Galperin, B., Sukoriansky, S., Dikovskaya, N., *Anisotropic Large-Scale Turbulence, Waves, and Zonal Jets in Flows With Beta-Efect*. Savannah, GA: American Geophysical Union - Chapman Conference, January 2006.
  96. Galperin, B., *A Spectral Model of Turbulent Flows with Stable Stratification and its Application for Geophysical Flows*. Princeton, NJ: Princeton University, June 2005.

97. Galperin, B., *Anisotropic large-scale turbulence and zonal jets in computer simulations, in the laboratory, on giant planets and in the ocean*. MIT, Cambridge, MA, June 2005.
98. Galperin, B., Sukoriansky, S., Dikovskaya, N., *Zonal jets and anisotropic turbulence in natural and laboratory flows*. Cambridge, MA: American Meteorological Society, 15th Conference on Atmospheric and Oceanic Fluid Dynamics, June 2005,
99. Galperin, B., *A new spectral theory of turbulent flows with stable stratification and its applications*. Videoconference at St. Petersburg, FL: Army Research Office, May 2005.
100. Galperin, B., Sukoriansky, S., Dikovskaya, N., *Anisotropic large-scale turbulence and zonal jets in computer simulations, in the laboratory, on giant planets and in the ocean*. Ringberg, Germany: Max-Planck-Institute for Astrophysics, April 2005.
101. Galperin, B., Sukoriansky, S., *A new spectral theory of turbulent flows with stable stratification*. Ringberg, Germany: Max-Planck-Institute for Astrophysics, April 2005.
102. Galperin, B., Sukoriansky, S., Dikovskaya, N., *Zonal jets and anisotropic energy spectrum in betaplane turbulence: computer simulations, laboratory experiments, and natural flows*. Vienna, Austria: EGU Assembly, April 2005.
103. Galperin, B., Sukoriansky, S., *A spectral closure-based model of turbulence for geophysical applications*. Vienna, Austria: EGU General Assembly, April 2005.
104. Galperin, B., *A spectral theory for stably stratified turbulence*. Haifa, Israel: Technion - Israel Institute of Technology, 2005.
105. Galperin, B., *Anisotropic large-scale turbulence and zonal jets in computer simulations, in the laboratory, on giant planets and in the ocean*. Florida State University, Tallahassee, Florida, November 2004.
106. Galperin, B., Sukoriansky, S., Perov, V., *A coarse-grain, quasi-normal model of stably stratified turbulent flows and its implementation in  $K-\epsilon$  modeling of atmospheric ABLs*. Portland, ME: American Meteorological Society, August 2004.
107. Galperin, B., Sukoriansky, S., Nakano, H., *Anisotropic Large - Scale Turbulence on Giant Planets and in the Ocean*. Warsaw, Poland: XXI International Congress of Theoretical and Applied Mechanics, August 2004.
108. Sukoriansky, S., Galperin, B., Perov, V., *A New Spectral Closure Model of Turbulent Flows with Stable Stratification and Its Application to Atmospheric SBLs*. Warsaw, Poland: XXI International Congress of Theoretical and Applied Mechanics, August 2004.
109. Galperin, B., *Scientist describes similarities between Pacific Ocean currents and Jupiter's toxic clouds, Radio Interview*. London, England: Voice of America, June 2004.
110. Galperin, B., Sukoriansky, S., Hideyuki, N., *Anisotropic turbulence and zonal jets in the ocean, giant planets and computer simulations*. Columbia University, New York: CMG2004: 25th IUGG Conference on Mathematical Geophysics, June 2004.
111. Galperin, B., Sukoriansky, S., Perov, V., *Spectral modeling of internal waves and turbulence and its application in simulations of turbulent flows with stable stratification*. Columbia University, New York: CMG2004: 25th IUGG Conference on Mathematical Geophysics, June 2004.
112. Galperin, B., Sukoriansky, S., Nakano, H., Huang, H.-P., *On the non-linear nature of the sub-surface zonal currents in the North Pacific Ocean*. Nice, France: EGU 1st General Assembly, April 2004.
113. Galperin, B., Sukoriansky, S., Perov, V., *A new  $K-\epsilon$  model of stably stratified atmospheric boundary layers*. Nice, France: EGU, April 2004.
114. Galperin, B., *A new spectral theory of turbulence with stable stratification*. London, UK: Imperial College, February 2004.
115. Galperin, B., *Anisotropic turbulence and zonal flows on rotating sphere, giant planets, and in Earth's ocean*. Imperial College, London, UK, February, 2004.
116. Galperin, B., Sukoriansky, S., Perov, V., *Anisotropic turbulence and waves in large-scale geophysical flows*. Tel-Aviv, Israel: Israel Society of Theoretical and Applied Mechanics (ISTAM2003), December 2003.
117. Galperin, B., Sukoriansky, S., Perov, V., *A new model for turbulent flows with stable stratification*. Meadowland, NJ: The American Physical Society 56th Annual Meeting of the Division of Fluid Dynamics, November 2003.
118. Galperin, B., *Anisotropic turbulence and zonal jets on beta -plane, rotating sphere and giant planets*. Haifa, Israel: Technion - Israel Institute of Technology, October 2003.
119. Luther, M. E., B. Galperin, S. D. Meyers, S. A. Gilbert, V. Subramanian, L. M. Wetzell, M. A. Vincent, and M. E. Hansen, *An Integrated Observing and Modeling System for Tampa Bay, Florida*. Presented at the Fourth Tampa Bay Area Scientific and Information Symposium (BASIS4), St. Petersburg, FL, October 2003.
120. Galperin, B., Sukoriansky, S., Perov, V. (2003). *Application of a new spectral theory of stratified*

- turbulence to ABL over ice*. Mallorca, Spain: GEWEX Atmospheric Boundary Layer Study (GABLS) Workshop, September 2003.
121. Galperin, B., *A quasi-normal spectral model of turbulent flows with stable stratification*. Department of Applied Mathematics and Theoretical Physics, University of Cambridge, England, July 2003.
  122. Galperin, B., *Anisotropic turbulence and zonal jets on beta -plane, rotating sphere and giant planets*. Southampton, UK: Southampton Oceanographic Center, July 2003.
  123. Sukoriansky, S., Galperin, B., Perov, V., *A spectral closure model for turbulent flows with stable stratification - theory and a test case of atmospheric SBL*. Technion - Haifa, Israel: Faculty of Mechanical Engineering, Technion, Israel, 2003.
  124. Sukoriansky, S., Galperin, B., Perov, V., *A spectral closure model for turbulent flows with stable stratification: Theory and a test case of atmospheric SBL*. Haifa, Israel: The 29th Israel Conference on Mechanical Engineering, 2003.
  125. Sukoriansky, S., Galperin, B., Perov, V. *Application of a new spectral theory of turbulence to a stably stratified atmospheric boundary layer*. Nice, France: EGS-AGU-EUG Assembly, April 2003.
  126. Galperin, B., *Anisotropic Turbulence and Zonal Jets on Beta-Plane, Rotating Sphere and Giant Planets*. Cambridge, England: Department of Applied Mathematics and Theoretical Physics, Cambridge University, July 2002.
  127. Galperin, B., *Anisotropic Turbulence and Zonal Jets on Beta-Plane, Rotating Sphere and Giant Planets*. London, England: Department of Mechanical Engineering, University College London, July 2002.
  128. Galperin, B., *Anisotropic Turbulence and Zonal Jets on Beta-Plane, Rotating Sphere and Giant Planets*. Reading, England: University of Reading, July 2002.
  129. Galperin, B., *Anisotropic Turbulence and Zonal Jets on Beta-Plane, Rotating Sphere and Giant Planets*. Oxford, England: Atmospheric, Oceanic & Planetary Physics, Clarendon Laboratory, Oxford University, July 2002.
  130. Galperin, B., *Universal Spectrum of Two-Dimensional Turbulence on Rotating Sphere and Basic Features of Atmospheric Circulations on Giant Planets*. Nice, France: the 27th General Assembly of the European Geophysical Society, April 2002.
  131. Galperin, B., *RPT Analysis of Turbulent Flows with Stable Stratification*. Nice, France: the 27th General Assembly of the European Geophysical Society, April 2002.
  132. Galperin, B., *Zonal Flows on Beta-Plane, Rotating Sphere, and Giant Planets*. Baltimore, Maryland: Department of Earth and Planetary Sciences, The Johns Hopkins University, March 2002.
  133. Galperin, B., *Zonal Flows on Beta-Plane, Rotating Sphere, and Giant Planets*. St. Petersburg, Florida: College of Marine Science, University of South Florida, January 2002.
  134. Galperin, B., *A Closer Look at Wave-Turbulence Interactions in Stably Stratified Flows*. Brussels, Belgium: 7th CARTUM Meeting, December 2001.
  135. Galperin, B., *Spectral Characteristics of Zonal Flows on Giant Planets*. Brussels, Belgium: 7th CARTUM Meeting, December 2001.
  136. Galperin, B. (2001). *Spectral Characteristics of Zonal Flows on Giant Planets*. New Orleans, Louisiana: 33rd Annual Meeting, Division for Planetary Sciences, American Astronomical Society, November 2001.
  137. Luther, M. E., M. S. Vincent, D. C. Burwell, and B. Galperin, *Numerical modeling of proposed fresh water withdrawals and desalination concentrate discharges in Tampa Bay, Florida*. Presented at the 16<sup>th</sup> Biennial Conference of the Estuarine Research Federation, St. Petersburg Beach, FL, November 8, 2001.
  138. Galperin, B., *Initial comparison of RG-based theory of stably stratified turbulent flows with observational data*. Gregynog Hall, Wales, UK: CARTUM 3rd Summer School, July 2001.
  139. Galperin, B., *Universal  $n^{-5}$  spectrum of zonal flows on giant planets*. University College London, London, England: Department of Space and Climate Physics and Department of Mathematics, May 2001.
  140. Galperin, B., *Universal  $n^{-5}$  spectrum of zonal flows on giant planets*. Budapest, Hungary: CARTUM Workshop III, May 2001.
  141. Galperin, B., *Applications of the Boltzmann Lattice Method*. Budapest, Hungary: CARTUM Workshop III, May 2001.
  142. Galperin, B., *Universal  $n^{-5}$  spectrum of zonal flows on giant planets*. Washington, DC: the 53rd Annual Meeting of the Division of Fluid Dynamics of the American Physical Society, November 2000.
  143. Galperin, B., *New results on stably stratified flows with shear*. Bidston, England, CARTUM Summer School, August 2000.
  144. Galperin, B., *Coupled hydrodynamic-biological simulations of the oyster beds in Apalachicola*

- Bay, Florida, in response to changes in reshwater runof.* Marseille, France: 2nd CARTUM Workshop, 2000.
145. Luther, M.E., Galperin, B., *A numerical modeling investigation of a proposed desalination facility at Big Bend, Tampa Bay, Florida, Phase I and II.* St. Petersburg, Florida: S & W Water LLC, January 2000.
  146. Burwell, D., M. Vincent, M. Luther, and B. Galperin, *Modeling of estuarine residence times.* Presented at the 6th International Conference on Estuarine and Coastal Modeling, New Orleans, LA, November 3-5, 1999.
  147. Galperin, B., *2-D turbulence and flow two-dimensionalization, Parts I and I.* Ispra, Italy: CARTUM Autumn School, October 1999.
  148. Galperin, B., *Anisotropic spectra in two-dimensional turbulence on a rotating sphere.* New York: 12th Conference on Atmospheric and Oceanic Fluid Dynamics, Columbia University, June 1999.
  149. Galperin, B., *Negative viscosity, large scale drag, zonal jets and anisotropic spectra in simulations of 2D and rotating sphere turbulence.* Princeton, NJ: GFDL/NOAA, Princeton University, 1999.
  150. Galperin, B., *Negative viscosity, large scale drag, zonal jets and anisotropic spectra in DNS of 2D turbulence.* Hamburg, Germany: CARTUM Kick-Off Workshop, 1999.
  151. Galperin, B., *Anisotropic -5/3 and -5 spectra in differentially rotating barotropic 2D turbulence.* Philadelphia, Pennsylvania: the 51 st Annual Meeting of the Division of Fluid Dynamics of the American Physical Society, November 1998.
  152. Galperin, B., *Large Eddy Simulation (LES) in Geophysical Flows: Recent Developments.* Southampton, England: the Southampton Oceanographic Centre, December 1997.
  153. Galperin, B., *Nowcasting and Forecasting of Tampa Bay Water Levels and Currents.* Clearwater, Florida: BASIS 3, October 1997.
  154. Galperin, B., *Recent Developments in Modeling and Predicting Storm Surges.* Bermuda: Bermuda Biological Station for Research, October 1997.
  155. Schmidt, N., M. E. Luther, M. Vincent, B. Galperin, and D. Burwell, *An Integrated End-to-End Marine Contaminant Management System for Tampa Bay.* Presented at the Estuarine Research Federation 1997 Meeting, October 14, 1997, Providence, RI.
  156. Galperin, B., *Numerical Modeling of Storm Surge, Flooding and Drying, Caused by Hurricane Andrew on the Coast of Louisiana.* Massachusetts: USGS, Woods Hole, September 1997.
  157. Galperin, B., *Modeling Hurricane Andrew's Impact on the Louisiana Coastal Area.* Mahwah, New Jersey: HydroQual, Inc., July 1997.
  158. Galperin, B., *Large Eddy Simulation (LES) in Geophysical Flows: Recent Developments.* Narragansett Bay Campus, Rhode Island: Graduate School of Oceanography, University of Rhode Island.
  159. Galperin, B., *Large Eddy Simulation (LES) in Geophysical Flows: Recent Developments.* Haifa, Israel: Technion - Israel Institute of Technology, November 1996.
  160. Galperin, B., *PORTS: Physical Oceanographic Real Time System for Tampa Bay, Florida.* Haifa, Israel: Technion - Israel Institute of Technology, November 1996.
  161. Galperin, B., *Modeling Florida estuaries, such as Tampa Bay and Florida Bay, and integration of monitoring and prediction systems.* Princeton, New Jersey: Princeton Ocean Model (POM) Users Group Meeting, Program in Atmospheric and Oceanic Sciences, Princeton University, 1996.
  162. Galperin, B., *The Effect of Small-Scale Forcing on Large-Scale Structures in Two-Dimensional Flows.* Tallahassee, Florida: Department of Oceanography, Florida State University.
  163. Galperin, B., Blumberg, A., Luther, M., Haines, M., *The Design of a Modeling Strategy for Florida Bay. Final Report for USDOl, National Park Service.* Department Of Marine Science, University Of South Florida, St. Petersburg, Florida: USDOl, National Park Service, January 1996.
  164. Galperin, B., *Large Eddy Simulation of 2D Turbulence and the Concept of Stabilized Negative Viscosity.* Irvine, California: the 47th Annual Meeting of the Division of Fluid Dynamics, American Physical Society, November 1995.
  165. Galperin, B., *Hydrodynamic Modeling of Florida Bay.* University Of Florida, Gainesville, Florida: Florida Bay Science Conference: A Report by Principal Investigators, October 1995.
  166. Galperin, B., *Modeling of Geophysical Turbulence, invited presentation at the Symposium honoring the award of the G.I. Taylor Medal from the Society of Engineering Science to Steven A. Orszag.* New Orleans, Louisiana: the 32nd Annual Technical Meeting of the Society of Engineering Science, October 1995.
  167. Galperin, B., *Large Eddy Simulation of 2D Turbulence and the Concept of Stabilized Negative Viscosity.* Los Alamos National Laboratory, New Mexico: Scaling Dynamics and Fluid Turbulence Workshop, Center for Nonlinear Studies, August 1995.
  168. Galperin, B., *The Concept of the Stabilized Negative Viscosity and the Effect of Small-Scale Forcing on Large-Scale Oceanic and Atmospheric Circulation.* Center for Nonlinear Studies, J.R.

- Oppenheimer Study Center, Los Alamos National Laboratory, New Mexico: the 15th Annual International Conference "Nonlinear Phenomena in Ocean Dynamics," May 1995.
169. Galperin, B., *The Effect of Small Scale Forcing on Large Scale Circulation and The Concept of the Stabilized Negative Viscosity*. Greenbelt, Maryland: NASA Goddard Space Flight Center, 1995.
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  174. Galperin, B., *Subgrid-scale Parameterization of Turbulence and Waves on the Beta-Plane*. Albuquerque, New Mexico: the 46th Annual Meeting of the Division of Fluid Dynamics, American Physical Society, November 1993.
  175. Galperin, B., *Eddy Viscosity, Frequency and Diffusivity and Mean Flow Generation in Beta-Plane Turbulence*. Tempe, Arizona: Department of Mechanical and Aerospace Engineering, Arizona State University, September 1993.
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  178. Galperin, B., *A Case Study of Non-Eddy-Resolving Modeling: Beta-Plane Turbulence*. Tallahassee, Florida: Department of Oceanography, Florida State University, 1993.
  179. Sukoriansky, S., Galperin, B., Staroselsky, I., *Large-Scale Dynamics of Two-Dimensional Turbulence with Rossby Waves*. Jerusalem, Israel: the 7th Beer-Sheva International Seminar on MHD - Flows and Turbulence, 1993.
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  181. Galperin, B., *Renormalization Group Theory of Turbulence and Waves on the Beta-Plane*. Department Of Oceanography, At Manoa: the Seventh "Aha Huliko'a Hawaiian Winter Workshop, University of Hawaii, January 1993.
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  184. Galperin, B., Sukoriansky, S., *RNG Results for Beta-Plane Turbulence, "Prospects of Turbulence Research, 1992"*. Boulder, Colorado: National Center for Atmospheric Research, August 1992.
  185. Galperin, B., *3-D Circulation Model Development for Tampa Bay*. St. Petersburg, Florida: Tampa Bay National Estuary Program Technical Advisory Committee, 1992.
  186. Galperin, B., Sukoriansky, S., Staroselsky, I., *Renormalization Group Analysis of Barotropic, Two-Dimensional Turbulence on the Beta-Plane*. New Orleans, Louisiana: AGU Ocean Sciences Meeting, January 1992.
  187. Galperin, B., Blumberg, A., Weisberg, R., *A Time-Dependent, Three-Dimensional Model of Circulation in Tampa Bay*. Tampa, Florida: the 2nd International Conference on Estuarine and Coastal Modeling, November 1991.
  188. Galperin, B., Sukoriansky, S., Staroselsky, I. (1991). *Renormalization Group Analysis of Two-Dimensional Turbulence on the Beta-Plan*. Scottsdale, Arizona: the 44th annual meeting of the Division of Fluid Dynamics of the American Physical Society, November 1991.
  189. Galperin, B., *Hydrodynamic Modeling of the Apalachicola Estuary, Symposium for Interdisciplinary Research in the Apalachicola Estuary*. Havana, Florida: Northwest Florida Water Management District.
  190. Galperin, B., Blumberg, A., Weisberg, R., *A Time-Dependent, Three-Dimensional Model of Circulation in Tampa Bay*. Tampa, Florida: BASIS 2.
  191. Galperin, B., Weisberg, R., *Recent Findings on the Circulation of Tampa Bay: Initial Results from Data Analysis and Numerical Modeling*. St. Petersburg, Florida: Department of Marine Science,

- University of South Florida.
192. Galperin, B., Blumberg, A., Darling, R., Saff, E., *Storm Surge Modeling for the Turkey Point Power Plant. Report for Florida Power & Light Company.* Tampa, Florida: Institute for Constructive Mathematics, Department of Mathematics, University of South Florida, 1990.
  193. Galperin, B., *Developments in Modeling of Geophysical Turbulence.* Haifa, Israel: Technion-Israel Institute of Technology, 1990.
  194. Galperin, B., *Numerical Simulation of the Storm Surge. Report for Florida Power & Light Company.* Tampa, Florida: Institute for Constructive Mathematics, Department of Mathematics, University of South Florida, 1990.
  195. Galperin, B., Roy, S., Yakhot, A., *Application of Yakhot-Orszag Theory of Turbulence to Rotating Flows.* Nasa Ames Research Center, Palo Alto, California: 42nd Annual Meeting of the Division of Fluid Dynamics, American Physical Society, November 1989.

## **16. SERVICE**

### **REVIEWER**

Agence Nationale de la Recherche  
 ASCE Journal of Hydraulic Engineering  
 ASME Journal of Fluid Engineering  
 Cambridge University Press  
 Dutch Foundation for Fundamental Research on Matter, FOM  
 Estuarine, Coastal and Shelf Science  
 Experimental Thermal and Fluid Science  
 Geophysical and Astrophysical Fluid Dynamics  
 Geophysical Research Letters  
 Icarus  
 Journal of Atmospheric and Oceanic Technology  
 Journal of Fluid Mechanics  
 Journal of Geophysical Research  
 Journal of Marine Systems  
 Journal of Physical Oceanography  
 Journal of the Atmospheric Sciences  
 Journal of Turbulence  
 Meteorologische Zeitschrift  
 Monthly Weather Review  
 National Research Council  
 National Science Foundation  
 Natural Environment Research Council, UK  
 Ocean Dynamics  
 Ocean Modelling  
 Physica A  
 Physica D  
 Physical Review E  
 Physical Review Letters  
 Physics of Fluids  
 Prentice Hall  
 Theoretical and Computational Fluid Dynamics  
 The Israel Science Foundation  
 US Army Research Office

### **UNIVERSITY AND COLLEGE COMMITTEES**

Poynter Library Dean Search Committee  
 Dean's Advisory Committee

University Library Liaison Committee  
 CMS Library Committee  
 Space Committee  
 IT Committee  
 Tenure and Promotion Committee  
 Faculty Evaluation Committee  
 Faculty Search Committee

### **CONFERENCES, SESSIONS, LECTURES**

1989 - Inviting and hosting speakers for CMS seminars and the Eminent Scholar Lecture Series  
 1990 - Organizing, running and chairing the conference "Large Eddy Simulation – Where Do We Stand?" at St. Petersburg Beach, Florida  
 1999 – 2001 Member of the Scientific and Steering Committees of CARTUM – the EU-sponsored concerted action for Comparative Analysis and Rationalization of Second-Moment Turbulence Models  
 2001 – 2005 Editorial work for the CARTUM book  
 2000 – 2007 Chairing Atmospheric Turbulence sessions at the Annual Assemblies of the European Geophysical Society in Nice and Vienna  
 2006 Organizing and chairing a session on zonal jets at the AGU Ocean Sciences meeting in Honolulu, Hawaii  
 2008 Organizing a workshop on experimental investigation of zonal jets at CMS – USF, St. Petersburg, Florida  
 2010 Co-chairing a session on zonal jets at the AGU Ocean Sciences meeting in Portland, Oregon  
 2011 - Organizing and running the program "Zonal jets and eddies – planetary science and satellite oceanography at the crossroads" at the International Space Science Institute in Bern

### **17. CONTRACTS AND GRANTS**

1. **Contract Title:** Zonal jets and eddies – a crossroad for planetology and geophysics.  
**Funding Agency:** International Space Science Institute, Bern, Switzerland  
**Contract Begin Date:** 01/01/12 **Contract End Date:** 09/30/13  
**Amount:** The grant will be administered by ISSI and support per diem expenses of a team of about 15 international experts incurred over 3 meetings at ISSI in Bern  
**Proposal Status:** FUNDED
2. **Contract Title:** Modeling the effects of anisotropic turbulence and dispersive waves on oceanic circulation and their incorporation in navy ocean models.  
**Contract Purpose:** Research  
**Funding Agency:** Office of Naval Research  
**Contract Begin Date:** 02/01/10 **Contract End Date:** 12/31/12  
**Amount:** \$215,828  
**Proposal Status:** FUNDED
3. **Contract Title:** Further implementation and refinement of the QNSE model of turbulence.  
**Funding Agency:** US Army Research Office  
**Contract Begin Date:** 10/01/08 **Contract End Date:** 11/30/12  
**Amount:** \$490,715.00  
**Proposal Status:** FUNDED
4. **Contract Title:** Giant Planets in the Laboratory with Cryogenic Helium  
**Contract Purpose:** Student training  
**Funding Agency:** NASA  
**Contract Begin Date:** 08/01/12 **Contract End Date:** 07/31/13  
**Amount:** \$30,000  
**Proposal Status:** PENDING



5. **Contract Title:** QNSE-Based Mass Flux Turbulence Model for Atmospheric Boundary Layers  
**Contract Purpose:** Student training  
**Funding Agency:** NASA  
**Contract Begin Date:** 08/01/12 **Contract End Date:** 07/31/13  
**Amount:** \$30,000  
**Proposal Status:** PENDING
  
6. **Contract Title:** Collaborative Research: Anisotropic Planetary and Geophysical Turbulence. Effects of Stratification  
**Contract Purpose:** Research  
**Funding Agency:** National Science Foundation  
**Contract Begin Date:** 09/01/12 **Contract End Date:** 08/31/15  
**Amount:** \$186,037  
**Proposal Status:** PENDING