

# Curriculum Vitae

## Susan Friedlander

### Professional Addresses:

Department of Mathematics  
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University of Southern California  
Los Angeles, CA 90089-2532  
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### Education:

|      |       |                      |
|------|-------|----------------------|
| 1967 | B.SC. | London University    |
| 1970 | M.S.  | M.I.T.               |
| 1972 | Ph.D  | Princeton University |

### Employment:

|         |   |
|---------|---|
| 1972-74 | Visiting Member, Courant Institute of Mathematical Sciences                               |
| 1974-75 | Instructor, Princeton University, Mathematics Department                                  |
| 1975-82 | Assistant Professor, University of Illinois at Chicago, Math, Stat., and Comp. Sci. Dept. |
| 1982-89 | Associate Professor, University of Illinois at Chicago, Math, Stat., and Comp. Sci. Dept. |
| 1989-08 | Professor, University of Illinois at Chicago, Math, Stat., and Comp. Sci. Dept.           |
| 2007-   | Professor, University of Southern California  |
| 2008-   | Director, Center for Applied Mathematical Sciences, USC                                   |

### Visiting Positions:

|         |  |
|---------|--|
| 1977-78 | Visiting Lecturer, Oxford University                                       |
| 1978    | Visitor at D.A.M.T.P., Cambridge University                                |
| 1982-83 | Professeur Associe, University of Paris VI                                 |
| 1982-83 | Visiting Member, I.H.E.S., Paris   |
| 1983    | Visiting Fellow, Max Planck Institute, Bonn                                |
| 1984    | Visiting Fellow, E.T.H., Zurich  |
| 1985    | Visiting Member, I.H.E.S., Paris   |
| 1985-86 | Visiting Fellow, Princeton University                                      |
| 1986    | Visiting Fellow, E.T.H., Zurich  |
| 1986    | Visiting Scholar, M.S.R.I., Berkeley                                       |
| 1987    | Visiting Member, I.H.E.S., Paris   |
| 1988    | Visiting Fellow, E.T.H., Zurich  |
| 1988    | Visiting Member, I.H.E.S., Paris   |
| 1988    | Visitor, Institute of Physics of the Earth, Acad. Of Sciences USSR, Moscow |
| 1989    | Visiting Member I.H.E.S., Paris  |

1989 Visitor, I.P.E., Academy of Sciences, U.S.S.R., Moscow  
 1990 Visiting Member, I.H.E.S., Paris  
 1991 Visiting Fellow, E.T.H., Zurich  
 1992 Visiting Member, Newton Institute, Cambridge  
 1993 Visiting Member, I.H.E.S., Paris  
 1994 Visiting Professor, Brown University  
 1994 Visiting Professor, Northwestern University  
 1995 Visiting Member, MSRI, Berkeley  
 1996, 97, 01 Visitor, Center for Interdisciplinary Science, Heidelberg  
 1997 Research in Pair Program, Oberwolfach  
 1998 Visiting Member, I.H.E.S., Paris  
 1999 Member, I.A.S., Princeton  
 1999 Research Professor, M.S.R.I., Berkeley  
 2000 Visiting Member, ETH, Zurich  
 2000 Senior Visiting Fellow, Newton Institute, Cambridge  
 2002 Visiting Member, I.H.E.S., Paris  
 2003 Visiting Fellow, E.T.H., Zurich  
 2004 Visiting Member, I.H.E.S., Paris  
 2004 Professeur Invite, E.N.S.-Cachan, Paris  
 2005 Member, IAS, Princeton  
 2006 Visiting Member, I.H.E.S., Paris  
 2007 Visiting Member, Fields Institute, Toronto  
 2007 Visiting Member, M.S.R.I., Berkeley  
 2009 Visiting Fellow, Trinity College, Cambridge

**Professional Activities:**

*Officer of A.M.S.*

Associate Secretary, American Mathematical Society, 1996-2010

*Committees and Evaluation Panels*

Member-at-large, American Mathematical Society Council, 1983-85  
 Member, Council of the American Mathematical Society, 1996-  
 Regional Coordinator for Committee on Special Funds for I.C.M, 1984-86  
 AMS, Committee on Membership, 1990-95  
 AMS fSU Aid Committee, Chairman of library subcommittee, 1992-97  
 International Science Foundation Grants Selection Panel, Co-chairman, 1993-94  
 Member, External Review Committee of the Mathematics Department, University of Maine, 1997  
 NSF Applied Math Proposal Review Panel, 1997-1998  
 Member, Joint Policy Board for Mathematics, 1998-2000  
 Member, Scientific Advisory Committee, MSRI, 2001-2006  
 CRDF Proposal Review Panel, 2005  
 Member, External Review Committee, Math Department, Georgia Tech, 2007  
 Member, External Review Committee, Math Department, Yale University, 2008  
 Member, Board of Mathematical Sciences and their Applications of the National Academies, 2008-2011  
 Member, Scientific Advisory Committee, CRM, Montreal, 2010-2014

Reviewer, Radcliffe Institute Fellowship Program, 2010  
Reviewer, Simons Foundation, Math and Physical Sciences, 2010-11  
Nominating Committee, American Math Society, 2012-2015

*Conference Organization*

AMS - Benelux Meeting Program Committee, 1995-96  
AMS - South Africa Joint Meeting Program Committee, 1996-97  
AMS - Australia Joint Meeting Program Committee, 1998-99  
AMS - Spain Joint Meeting Program Committee, 2001-03  
AMS - India Joint Meeting Program Committee, 2001-03  
AMS - German-Austrian Joint Meeting Program Committee, 2002-05  
AMS - Poland Joint Meeting Program Committee, 2005-07  
AMS - Winter Meeting (New Orleans) Program Committee, 2006-07  
AMS - Shanghai Joint Meeting Program Committee, 2006-08  
AMS - Mexican Joint Meeting Program Committee, 2009-10  
Mathematical Congress of the Americas - Steering Committee, 2011-2013

*Workshop Organization*

Co-organizer, U.S.-Swiss conference “Internal waves in geophysical contexts”, 1988  
Co-organizer, U.S.-Russian conference “MHD stability and dynamics”, 1992  
Co-organizer, Research Lectures, Par City Program on Nonlinear Waves, 1995  
Co-organizer, Mini-symposium of Mathematical Fluid Dynamics, IMACS, Berlin, 1997  
Co-organizer, Session on Fluid Dynamics, AMS-SAMS International Meeting, 1997  
Co-organizer, Session on Fluid Dynamics, AMS-AuMS International Meeting, 1999  
Co-organizer Session on Jean Leray, AMS Austin Meeting, 1999  
Co-organizer, Session on Mathematical Fluids, AMS-SMF International Meeting, 2001  
Co-organizer, Session on Fluid Dynamics, AMS-RSME International Meeting, 2003  
Co-organizer, Session on PDE and applications, AMS-India International Meeting, 2003  
Co-organizer, Session of Spectral Theory, AMS Northwestern Meeting, 2004  
Co-organizer, Analytical and Stochastic Fluid Dynamics, MSRI 2005  
Co-organizer, Session on PDE of evolution type, AMS-Polish International Meeting, 2007  
Co-organizer, Fluids Thematic Year, TIFR Bangalore, 2007  
Co-organizer, Session of the Euler equations, AMS DePaul Meeting, 2007  
Co-organizer, Session on Mathematical Fluids, AMS-Brazil International Meeting, 2008  
Co-organizer, Southern California Workshop on the Mathematics of Fluids, 2008  
Co-organizer, Conference for 85th Birthday of Cathleen Morawetz, Fields Institute, 2008  
Co-organizer, Conference on Analysis of Fluid Stability, Maxwell Institute, Edinburgh, 2009  
Co-organizer, Session on PDE and Harmonic Analysis, Baylor University, 2009  
Co-organizer, Southern California Symposium on Fluids, Caltech, 2010  
Co-organizer, Session on Nonlinear PDE and Applications, UCLA, 2010

*Mentoring Activities*

Organizer: “Celebration of Women in Mathematics” Conference, M.I.T., 1994  
Mentoring program for women graduate students, Institute for Advanced Study Program, 1995  
Panel discussion, Berkeley / Mills College College summer program for women, 1995  
Panel discussion, “Launching a career in mathematics”, Association for Women in Mathematics  
Workshop, Winter Meeting, AMS, 1996

AWM representative to the Joint Committee on Women, 2003-05  
Co-principal speaker, Nebraska Conference for Women, 2005  
Co-organizer, Celebration of Ladyzhenskaya and Oleinik, MSRI, 2006

**Grant Support:**

1975-2012 N.S.F. summer grants  
1982-83 N.S.F. sabbatical grant  
1988 N.S.F. U.S.-Swiss Cooperative Science Program  
1991-92 N.S.F. U.S.-U.S.S.R. Cooperative Science Program  
1993-96 N.S.F. U.S.-Russian Program  
1993-95 N.S.F. Special Projects (with R. MacPherson)  
1993-95 N.S.F. Visiting Professorship for Women  
2002-03 Indo- U.S. Forum Grant (with Kalyan Sinha)  
2006 N.S.A. Workshop Grants  
2007-09 C.R.D.F. U.S.-Russian Grant (with V. Yudovich)  
2011-12 XSEDE supercomputer grant (with F. Jacobitz)

**Editorial Positions:**

1991-96 Editorial Board, Geophysical and Astrophysical Fluid Dynamics  
1992-98 Editorial Board, SIAM Journal of Mathematical Analysis  
1993- Editorial Committee, Notices of the AMS  
1996-05 Chair, Colloquium Publications of the AMS  
2009- Editorial Board, Journal of Mathematics in Engineering, Science and Aerospace  
2010- Editorial Board, Journal of Mathematical Fluid Mechanics  
2005- Editor in Chief, Bulletin of the AMS

**Academic honors / Awards / Recognition:**

1967-69 Kennedy Memorial Scholarship  
1985 Lecturer in a series of seven distinguished women scientists,  
Science Museum of Minnesota  
1991 Plenary lecturer at the Cambridge Conference in honor of Dame Mary Cartwright  
1993 Invited hour address at AMS regional meeting in DeKalb, Il.  
1993 N.S.F. Visiting Professorship for Women Award  
1995 Elected Honorary Member, Moscow Mathematical Society  
1998 Medal of Institut Henri Poincare  
1998 Gauthier Villars Prize for Nonlinear Analysis  
1999 Plenary lecturer at the SIAM Annual Meeting, Atlanta  
2003 University of Illinois Senior Scholar Award

**Selected Invited Lectures:**

*seminars- international universities*

1994 University of Stockholm  
1996 University of Exeter  
1996 University of Bayreuth

1996 Academy of Sciences, Beijing  
 1996 University of Heidelberg  
 1996 University of Stuttgart  
 1997 University of Heidelberg  
 1997 I.C.T.P. Trieste  
 1997 U. of Witswatersand, Johannesburg  
 1997 Analysis Nonlinear, UNAM, Mexico City  
 1998 College de France Seminar of J.-L. Lions  
 1998 Institut Henri Poincare, Paris  
 1998 Ecole Normal Superieure, Paris  
 1998 University of Paris VI  
 1998 Max Planck Institut, Bonn  
 1998 University of Utrecht, Netherlands  
 1998 University of Paris- Orsay  
 1998 Lab. Dynamic Meteorology, ENS, Paris  
 1998 Observatoire de France, Toulouse  
 1999 University of Sidney, Sidney  
 2001 University of Gottingen, Graduate Colloquium  
 2001 University of Heidelberg, Heidelberg  
 2001 University of Stuttgart, Stuttgart  
 2001 Institut Henri Poincare, Paris  
 2002 Ecole Normal Supereirure, Lyon  
 2003 ETH, Zurich  
 2003 TIFR, Bangalore  
 2004 University of Zurich  
 2004 University of Paris - 7  
 2004 ENS- Lyon  
 2004 University of Paris-Nord  
 2004 ENS- Paris  
 2004 University of Edinburgh  
 2004 University of Paris-Orsay  
 2006 University of Lund  
 2006 R.I.M.S., University of Kyoto  
 2006 Graduate Center, University of Tokyo  
 2007 University of Toronto/Fields Institute  
 2007 University of Paris-Nord  
 2008 East China Normal University, Shanghai  
 2009 University of Cambridge  
 2009 University of Nottingham  
 2009 ENS - Paris  
 2011 Oxford University  
 2011 University of Campinas, Brazil  
 2011 Federal University, Rio de Janeiro, Brazil  
 2012 CRM, Montreal  
 2012 Newton Institute, Cambridge

*seminars - American universities*

- 1994 Brown University, Analysis Seminar
- 1994 University of Virginia, Joint Pure- Applied Colloquium
- 1994 Brown University, Fluid Mechanics Seminar
- 1994 Yale University, Analysis Seminar
- 1994 Brown University, Applied Math Colloquium
- 1994 U.S.C., Center for Applied Math Sciences
- 1994 University of Houston, Nonlinear Analysis Seminar
- 1994 University of Illinois, Urbana, Theoretical Mechanics Colloquium
- 1994 University of Arizona, Applied Math Seminar
- 1995 University of California, Berkeley, Colloquium
- 1996 Brown University, P.D.E. Seminar
- 1996 Notre Dame University, Colloquium
- 1996 University of Missouri, Colloquium
- 1996 Northwestern University, PDE Seminar
- 1996 University of Illinois, Urbana, Math in Science Series
- 1997 University of Texas, Austin Applied Math Seminar
- 1997 University of Chicago, Applied Math Seminar
- 1997 Kansas State University, Colloquium
- 1998 University of Michigan, P.D.E. Seminar
- 1998 Northwestern University, Nonlinear Science Seminar
- 1999 Ohio State University, Applied Math Seminar
- 1999 University of California at Irvine, P.D.E. Seminar
- 1999 Purdue University, Colloquium
- 1999 Princeton University, Fluid Dynamics Seminar
- 1999 Institute for Advanced Study, Turbulence Seminar
- 1999 Courant Institute, MHD Seminar
- 1999 Princeton University, Applied Math Colloquium
- 1999 Brown University, Applied Math Colloquium
- 1999 University of Pittsburgh, Math Colloquium
- 1999 U.C. Irvine, PDE Seminar
- 1999 Notre Dame University, Colloquium
- 2000 University of Wisconsin, PDE Seminar
- 2000 Brown University, PDE Seminar
- 2000 University of Missouri, "Show me" Lecture
- 2000 Washington University, Colloquium
- 2000 University of Missouri, Colloquium
- 2000 University of Missouri, PDE Seminar
- 2000 University of Indiana, PDE Seminar
- 2000 University of Indiana, Colloquium
- 2001 University of Chicago, Colloquium
- 2001 University of Utah, Applied Math Seminar
- 2002 University of Texas at Austin, Applied Math Seminar
- 2002 North Carolina State, Colloquium
- 2002 USC, Colloquium
- 2002 IIT, Colloquium
- 2002 University of Michigan, PDE Seminar

2003 Princeton University, Analysis Seminar  
 2004 Notre Dame, Applied Math Seminar  
 2004 Concordia University, Analysis Seminar  
 2004 USC, Colloquium  
 2005 IAS, Members Seminar  
 2005 Rutgers, Colloquium  
 2005 Princeton, Joint Princeton-IAS-Rutgers Analysis Seminar  
 2005 Courant, NYU, Analysis Seminar  
 2005 Princeton University, Noetherian Ring  
 2005 Penn State University, Colloquium  
 2005 Yale, Analysis Seminar  
 2006 U.C. Irvine, Colloquium  
 2006 Indiana University, Colloquium  
 2006 University of Southern California, Colloquium  
 2007 Northwestern, PDE Seminar  
 2007 UCLA, Applied Colloquium  
 2008 U.C. Irvine, Colloquium  
 2008 U.C. Santa Barbara, Colloquium  
 2008 Cal Poly, San Luis Obsipo, Colloquium  
 2008 California Institute of Technology, Applied Colloquium  
 2008 University of Texas, Austin, Analysis Seminar  
 2009 Arizona State University, Colloquium  
 2009 University of Texas, Austin, Distinguished Women in Math Lecture.  
 2010 U.C. Riverside, Colloquium  
 2010 UIC, Applied Math Seminar  
 2011 Ohio State, PDE seminar  
 2011 U.C. Irvine, Colloquium  
 2011 Penn State University, Applied Math Seminar

*invited conference lectures*

1992 Dynamo Theory Workshop, Newton Institute, Cambridge  
 1994 Special Session, AMS meeting at Manhattan  
 1994 Waves in the Ocean Workshop, M.S.R.I.  
 1995 Course of four lectures on non-linear waves at IAS, Princeton  
 1996 International Conference on Hyperbolic P.D.E., Hong Kong  
 1996 Special Session, A.M.S. meeting at Columbia, Missouri  
 1996 Oberwolfach meeting on Mathematical Fluid Dynamics  
 1997 Special Session, Joint A.M.S. - S.A.M.S. meeting  
 1997 Oberwolfach meeting on Fluid Stability  
 1997 IMACS mini-symposium, Berlin  
 1998 A.M.S. Special Session, Temple University  
 1999 Conference on M.H.D. Instabilities, I.H.P. Paris  
 1999 Dynamical Systems Workshop, IAS, Princeton  
 1999 Fluids Mimi-symposium, SIAM annual meeting, Atlanta  
 1999 Fluids Special Session, Joint AMS-AuMS meeting in Australia  
 1999 Fluids Special Session, AMS meeting in Austin  
 2000 Conference in honour of Roger Temam, Paris  
 2000 French- Czech Conference on Fluid Dyanamics, CIRM, France

2000 Conference in honor of John Heywood, Naples  
 2000 Newton Institute Workshop on Topological Fluids, Cambridge  
 2001 Contemporary Challenges in Fluid Mechanics Conference, Italy  
 2001 Dynamics and Geophysics Workshop, IMA  
 2001 Applied PDE Special Session, AMS meeting in Irvine  
 2001 CNRS Workshop on Shear Flow and Turbulence, Paris  
 2003 Directions in Applied Math, U. of Illinois-Urbana  
 2003 Workshop on Wavelets, Banff Center, Canada  
 2003 Conference on PDE and Fluid Dynamics, Northwestern University  
 2003 Mathematical Fluids Session, AMS-Spain Meeting  
 2003 PDE and Applications Session, AMS-India Meeting  
 2004 Fluids Workshop, ENS-Cachan, Paris  
 2004 SIAM minisymposium Houston  
 2004 Annual Nebraska Conference for Women in Mathematics  
 2005 Mathematics Fluid Dynamics Workshop, AIM  
 2005 Stability and Control Workshop, Oberwolfach  
 2005 Conference on PDE, Poznan, Poland  
 2006 Geophysical Fluids Workshop, A.I.M.  
 2006 Chicago PDE Days, Northwestern University  
 2006 Conference for 70th Birthday of Ya. Sinai, U. of Maryland  
 2006 Conference on Mathematical Fluid Dynamics, Steklov Institute, Moscow  
 2006 Conference in honor of Ladyzhenskaya and Oleinik, MSRI  
 2006 Mathematical Fluid Dynamics Workshop, Bernoulli Institute, Lausanne  
 2007 Conference in honor of Paulo Galdi, Lisbon  
 2007 300th Euler Centenary, Euler Institute, St. Petersburg  
 2007 Nonlinear Conservation Laws Session, AMS DePaul Meeting  
 2007 PDEs of Evolution Type Session, AMS Warsaw Meeting  
 2008 Geophysical Fluid Dynamics Session, AMS-Indiana Meeting  
 2008 Conference for 85th Birthday of Cathleen Morawetz, Fields Institute  
 2008 Conference for 70th Birthday of George Sell, York University  
 2008 Session on Nonlinear PDE, joint AMS-Shanghai Meeting, China  
 2009 Southern California Meeting on Fluid Dynamics, UCSB  
 2009 PIMS conference on Regularity Problems in Hydrodynamics, Vancouver, Canada  
 2009 Maxwell Institute Conference on Fluid Stability, Edinburgh, Scotland  
 2009 AIM workshop on the Euler and SQG equations, Palo Alto  
 2009 Deterministic and Stochastic PDE Session, AMS-Baylor Meeting  
 2010 Conference on PDE of Fluids, University of Warwick  
 2010 Interdisciplinary PDE Session, AMS-Notre Dame Meeting  
 2011 Southern California Fluids Conference, U.C. Riverside  
 2011 SIAM PDE Conference, San Diego  
 2011 Conference in honor of Peter Constantin, Carnegie-Mellon University

## **Major departmental committees:**

### **UIC:**

1975- Applied Mathematics Committee  
1978-82, 84-89 Advisory Committee  
1983-85, 88-89 Colloquium Chairman  
1984-89, 94-97, 00-03 Faculty Appointments Committee  
Chair, 1995-96, 1999-00, 2005-06

### **USC:**

07-08 Faculty Appointments Committee  
08-12 College Promotion and Tenure Committee  
08-09 Department Merit Committee  
09-11 Faculty Appointments Committee  
09-10 Edited Department Newsletter  
11-12 Department Merit Committee  
11-12 Faculty Search Committee

## **Graduate Courses taught:**

Asymptotic Methods  
Applications of Partial Differential Equations  
Transform Methods  
Geophysical Fluid Dynamics  
Magnetohydrodynamics  
Stability Problems in Fluid Dynamics  
Topics in Nonlinear PDE  
Mathematical Fluid Dynamics

## **Ph.D Students Supervised:**

Natasa Pavlovic Ph.D 2002, UIC  
Yevegeny Goncharov Ph.D 2003, UIC  
Natalya Popova Ph.D 2005, UIC  
David St John Ph.D 2009, UIC

## **Thesis Committees:**

Nathan Glatt-Holtz Ph.D 2008, USC  
Vlad Vicol Ph.D 2009, USC  
Michaela Ignatova Ph.D 2010, USC

## **Postdoctoral Fellows Mentored:**

Andrei Lyashenko  
Roman Shvydkoy  
Alexey Cheskidov  
Alexsey Polunchenko  
Walter Rusin

## Publications

1. Spin-down in a rotating stratified fluid, Part I, *Stud. Appl. Math.* LIII, 111-136 (1974).
2. Interaction of vortices on the surface of a rotating sphere, *Tellus* 27, 15-24 (1975).
3. Quasi-steady flows of a rotating stratified fluid in a sphere, *J. Fluid Mech.* 76, 209-228 (1976).
4. Limits to tidal control on lunar asymmetry, (with J.V. Smith), *Lunar Science VIII*, 322-324 (1977).
5. Hydrostatic tidal model for lunar asymmetry, *Geophysical and Astrophysical Fluid Dynamics*, 15, 105-122 (1980).
6. *An Introduction to the Mathematical Theory of Geophysical Fluid Dynamics*, Mathematics Studies 41, North-Holland, 282pp (1980).
7. Internal waves in the ocean stratified with variable buoyancy frequency, (with W.L. Siegmann), *An. Acad. Brasil Cienc.* 53, 213-221 (1981).
8. Internal waves in a contained rotating stratified fluid, (with W.L. Siegmann), *J. Fluid Mech.* 114, 123-156 (1982).
9. Internal waves in a rotating stratified fluid in an arbitrary gravitational field, (with W. Siegmann), *Geophys. and Astrophys. Fluid Dynamics*, 19, 267-292 (1982).
10. Turning surface behavior for internal waves subject to general gravitational fields, *Geophys. and Astrophys. Fluid Dynamics*, 22, 189-200 (1982).
11. Effects of dissipation on internal waves in a contained rotating stratified fluid, (with W.L. Siegmann), *Geophys. and Astrophys. Fluid Dynamics*, 27, 183-216 (1983).
12. Ordinary differential equations and internal waves, *Differential and Integral Equations*, Proc. 13th Midwest Conf., 36-54 (1985).
13. Internal oscillations in the Earth's fluid core, *Geophys. J. of the Roy. Astr. Soc.* 80, 345-361 (1985).
14. Stability of the subseismic wave equation for the Earth's fluid core, *Geophys. and Astrophys. Fluid Dynamics* 31, 151-167 (1985).
15. Internal oscillations in a rotating stratified spherical shell: asymptotic solutions. *Geophys. J. of the Roy. Astr.* 89, 637-657 (1987).
16. Hydromagnetic waves in the Earth's fluid core, *Geophys. and Astrophys. Fluid Dynamics* 39, 315-333 (1987).
17. Hydromagnetic waves in the Earth's fluid core. Proceedings of the symposium U 2, 19th General Assembly of I.U.G.G., U2-28, 1510 (1987).
18. Stability and waves in the Earth's fluid core, *Proc. Energy Stability and Convection*, Pitman Research Notes in Mathematics 168, 325-345 (1988).

19. Asymptotic behaviour of decay rates of internal waves in a rotating stratified spherical shell, *Geophys. J. Roy. Astr. Soc.* *96*, 245-252 (1989).
20. Conditions for hydromagnetic instabilities in a contained rotating stratified fluid. *Geophys. and Astrophys. Fluid Dynamics*, *46*, 245-260 (1989).
21. Viscous decay of core oscillations. Proceedings of the S.E.D.I. Symposium, Terra Cognita (1989).
22. Hydromagnetic waves in a differentially rotating stratified spherical shell, *Geophys. and Astrophys. Fluid Dynamics*, *48*, 53-67 (1989).
23. Nonlinear stability for stratified magnetohydrodynamics, (with M.M. Vishik), *Geophys. and Astrophys. Fluid Dynamics*, *55*, 19-45 (1990).
24. Lax pair formulation for the Euler equation, (with M.M. Vishik), *Physics Letters A*, *148* no. 6, 7 313-319 (1990).
25. Instability criteria for the flow of an inviscid incompressible fluid, (with M.M. Vishik), *Phys. Rev. Lett.*, *66* no. 17, 2204-2206 (1991).
26. Dynamo theory, vorticity generation and exponential stretching, (with M.M. Vishik), *Chaos*, vol. 1, no. 2, 198-205 (1991).
27. Instability criteria in fluid dynamics, (with M.M. Vishik), *Topological Methods in Fluid Dynamics*, ed. H.K. Moffatt, NATO ASI *218*, 535-549 (1992).
28. Instability criteria for steady flows of a perfect fluid, (with M.M. Vishik), *Chaos*, vol. 2, no. 3, 455-460 (1992).
29. An inverse scattering treatment for the flow of an ideal fluid in two dimensions, (with M.M. Vishik), *Nonlinearity*, *6*, 231-249 (1993).
30. Dynamo theory methods for hydrodynamical stability, (with M.M. Vishik), *J. Math Pure et Appliques* *72*, 145-180 (1993).
31. Hydrodynamic instability for certain ABC flows (with A.D. Gilbert and M.M. Vishik), *Geophys Astrophys. Fluid Dyn.* *73*, 97-107 (1993).
32. On stability and instability criteria for magnetohydrodynamics, (with M.M. Vishik), *Chaos*, vol. 5, no. 2, 416-423 (1995).
33. Nonlinear instability in hydrodynamics on an ideal fluid (with W. Strauss and M.M. Vishik), *Annales I.H.P, J. Nonlineaire* *14*, 2, 187-209 (1997).
34. Instability in parallel flow revisited (with L.N. Howard), *Studies in Applied Math.* *101*, no. 1, 1-21 (1998).
35. Asymptotic methods for magnetohydrodynamic stability, (with M.M. Vishik), *Quarterly Applied Math.* *56* no. 2, 377-398 (1998).
36. Lectures on Stability and Instability of an Ideal Fluid. IAS/Park City Lecture Series, ed. L. Caffarelli & Weinan E., vol. 5, 227-299 (1998).

37. Nonlinear instability of a precessing body with a cavity filled by an ideal fluid (with A.A. Lyashenko), *SIAM J. Math. Analysis*, *29*, no. 2, 600-618 (1998).
38. A sufficient condition for instability in the limit of vanishing dissipation (with A. Lyashenko). *J. math Analysis & Applications* *221* 544-558 (1998).
39. The unstable spectrum of oscillating shear flows (with L. Belenkaya and V. Yudovich), *SIAM J. Applied Math* *59*, no. 5 1701-1715 (1999).
40. Robustness of instability for the 2-D Euler equations (with W. Strauss and M.M. Vishik), *SIAM J. Math Analysis* *30*, no. 6, 1343-1355 (1999).
41. Instabilities in fluid motion (with V. Yudovich), *Notices of AMS* *46* no. 11, 1358-1367 (1999).
42. Unstable eigenvalues associated with inviscid fluid flows (with M. Vishik and V. Yudovich), *J. Math Fluid Mech* *2*, no. 4, 365-380 (2000).
43. On nonlinear instability and stability for stratified shear flow, *J. Math Fluid Mech* *3*, no. 1, 82-97 (2001).
44. Instability of steady flows of an ideal incompressible fluid (with A. Shnirelman). "Mathematical Fluid Mechanics - Recent Results and Open Questions", Editors Neustupa and Penel, *Advances in Mathematical Fluid Mechanics*, Birkhauser, 143-172 (2001).
45. On vortex tube stretching and instabilities in an inviscid fluid, *J Math Fluid Mech* *4* no. 1, 30-44 (2002).
46. On the unstable spectrum of the Euler equation. *Nonlinear PDE and Applications*, *Seminaire du College de France* vol. 14, *Stud. Math. Appl* *31*, 351-365, North-Holland (2002).
47. Localized instabilities in fluids (with A. Lipton-Lifchitz). *Handbook on Mathematical Fluid Dynamics*, vol. 2, 289-354, North-Holland (2003).
48. Navier: blow up and collapse (with M. Cannone), *Notices A.M.S.* *50*, no. 1, 7-13 (2003).
49. Nonlinear instability in two dimensional ideal fluids: the case of a dominant eigenvalue (with M. Vishik). *Comm. Math Physics* *243*, 261-273 (2003).
50. Remarks concerning a modified Navier Stokes equation (with N. Pavlovic). *Discrete and Continuous Dyn. Sys* *10*, no. 1-2, 269-288 (2004).
51. Blow up in a 3 dimensional vector model for the Euler equations (with N. Pavlovic), *Comm. Pure App. Math* vol. LVII, 705-725 (2004).
52. On recent development in the spectral problem for the linearized Euler equation (with R. Shvydkoy), *AMS Contemporary Math*, vol. 371, 271-297 (2005).
53. The unstable spectrum of the surface quasi-geostrophic equation (with R. Shvydkoy), *J. Math Fluid Mech*, *7*, 81-93 (2005).

54. The stability of flows, *Encyclopedia of Mathematical Physics*, Edited by Francoise, Naber and Tsou, Elsevier (2006).
55. Dyadic models for the equations of fluid motion (with N. Pavlovic), *Proceedings of the MSRI Workshop: the legacy of Ladyzhenskaya and Oleinik* (2006).
56. Nonlinear instability for the Navier-Stokes equations (with N. Pavlovic and R. Shvydkoy), *Comm. Math. Physics* 264, 335-347 (2006).
57. An inviscid dyadic model of turbulence: stability of the fixed point and Onsager's Conjecture (with A. Cheskidov and N. Pavlovic), *Journal Math Physics*, vol. 48, no. 6 (2007).
58. The unstable spectrum of the Navier-Stokes operator in the limit of vanishing viscosity (with R. Shvydkoy). *Annales I.H.P., J. Nonlineaire*, 25, 713-724 (2008).
59. Energy conservation and Onsager's Conjecture for the Euler equations (with A. Cheskidov, P. Constantin, and R. Shvydkoy). *Nonlinearity*, 21 no. 6, 1233-1252 (2008).
60. The vanishing viscosity limit for a dyadic model (with A. Cheskidov) *Physica D*, 238, no 8, 783-787 (2009).
61. Nonlinear instability for the critically dissipative quasi-geostrophic equation (with N. Pavlovic and V. Vicol). *Comm. Math. Physics*, 292, no 3, 797-810, (2009).
62. On the energy equality for weak solutions to the 3D Navier-Stokes equations (with A. Cheskidov and R. Shvydkoy). *Advances in Mathematical Fluid Mechanics*, 171-175, Springer (2010).
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