# Curriculum Vitae

Larry G. Redekopp

### **Education**

- Ph.D. 1969 Engineering, University of California, Los Angeles
- M.S. 1966 Engineering, University of California, Los Angeles
- B.S. 1962 Mechanical Engineering, Montana State University

#### Academic and Professional Positions

- 2009-10: Chairman, AME Department, University of Southern California
- 1992-97: Chairman, Department of Mechanical Engineering, University of Southern California.
- 1987-92: Co-Chairman, Department of Aerospace Engineering, University of Southern California.
- 1981- : Professor, Department of Aerospace Engineering, University of Southern California.
- 1982-83: Associate Pastor, First Baptist Church of Reseda, Reseda, California.
- 1976-77: Research Associate Professor, Department of Mathematics, Clarkson College of Technology, Potsdam, New York (Sabbatical Leave from the Univ. of So. Calif.).
- 1975-81: Associate Professor, Department of Aerospace Engineering, University of Southern California.
- 1973-82: Consultant, TRW Systems, Redondo Beach, California.
- 1971-75: Assistant Professor, Department of Aerospace Engineering, University of Southern California.
- 1970-71: Visiting Assistant Professor, Department of Aerospace Engineering, University of Southern California.
- 1969-70: Post-Doctoral Research Fellow, University of Colorado.
- 1966-69: Research Assistant, University of California, Los Angeles.
- 1965-66: Lecturer, Northrop Institute of Technology, Los Angeles.

## <u>Awards</u>

- 1962: Machine Design Award (*Machinery Magazine*)
- 1962-1965: National Defense Education Act Graduate Fellowship
- 1967-1969: Ford Foundation Graduate Fellowship
- 1969-1970: AFOSR-NRC Post Doctoral Fellowship
- 1979: Western Electric Fund Award for Teaching Excellence in Engineering, Pacific Southwest Region of the American Society for Engineering Education
- 1980: Award for Excellence in Teaching, USC School of Engineering
- 1986: Award for Excellence in Teaching, USC School of Engineering
- 1987: Elected Fellow of the American Physical Society
- 1991: Associates Award for Excellence in Teaching, University of Southern California
- 1997: Gledden Fellowship for Senior Visiting Scientists, Univ. of Western Australia.
- 1998: School of Engineering Service Award, USC School of Engineering
- 2012: USC Mellon Mentoring Award

# **Educator Experience**

- Taught over 20 different courses at the undergraduate and graduate levels in Aerospace and Mechanical Engineering.
- Had primary responsibility for curriculum development for 6 years in Aerospace Engineering.
- Prepared requisite materials for two ABET reviews in Aerospace Engineering with consequent accreditation approvals for the maximum term each time (1985, 1991,).
- Supervised a comprehensive curriculum review and revision in Mechanical Engineering (1992).
- Prepared requisite materials for ABET Focused Visit in Mechanical Engineering with consequent full accreditation approval and removal of all previously noted deficiencies (1994).
- Served on many different curricula, academic review, budget, and planning committees at the School and University level.
- Served on Appointment, Promotions and Tenure Committees at both the School and University levels.
- Supervised a coordinated, comprehensive curriculum revision for both the Aerospace and Mechanical Engineering Departments (1996-97).

# **External Service**

- Invited Lecturer, Summer Program in Geophysical Fluid Dynamics, Woods Hole Oceanographic Institution, 1980.
- Invited Lecturer, American Mathematical Society Summer Conference on Astrophysical and Geophysical Fluid Dynamics, University of Chicago, 1981.
- NSF-PYI Selection Panel for Fluid Mechanics, Heat Transfer and Particulates Division (1990).
- Service for the American Physical Society, Division of Fluid Dynamics (DFD):
  - 1992 DFD Vice-Chair, Chair of Fellowship Committee, Editor of Newsletter, Program Committee Member
  - 1993 DFD Chair-Elect, Chair of Program Committee
  - 1994 DFD Chairman, Program Committee Member
  - 1995 DFD Past Chairman
  - 1997-99 DFD Centennial Liaison, APS Centennial Planning Commission
- Fluid Dynamics Technical Committee, Am. Inst. of Aeronautics & Astronautics, 1993-1995.
- Chairman, First AIAA Theoretical Fluid Mechanics Meeting, New Orleans, June 1996.
- NASA Micro-gravity Fluid Physics Review Panel, 1995.
- Associate Editor, European Journal of Mechanics B/Fluids, 1996-2005.
- Served as a reviewer for:

Journal of Fluid Mechanics		Physics of Fluids	
Dynamics of Atmospheres and Oceans		Physical Review E	
European Journal of Mechanics B/Fluids		Physical Review Letters	
ASME Journal of Applied Mechanics		Physica D	
ASME Journal of Heat Transfer		Physics Letters A	
Journal of the Atmospheric Sciences		Wave Motion	
Journal of Physical Oceanography		ZAMP	
International Journal of Heat and Mass Transfer		AIChE Journal	
Journal of Mathematical Analysis and Applications		Computers and Fluids	
Geophysical Research Letters		Chaos	
Geophysical and Astrophysical Fluid Dynamics			AFOSR
AIAA Journal			NASA
Fluid Dynamics Research	Applie	d Mech. Revs.	NSF
Journal of Geophysical Research			ONR
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#### **Publications**

- "Supersonic Interference Flow along the Corner of Intersecting Wedges," *AIAA Journal*, Vol. 5, pp. 480-488, March 1967. (A. F. Charwat & L. G. Redekopp). Also, Rand Memorandum RM-4863-PR, July 1966. Also, presented at 3rd AIAA Aerospace Sciences Meeting, January 1966, New York.
- "Effect of Mass Addition on the Heat Transfer to a Cavity in Supersonic Flow," Int. J. of Heat and Mass Transfer, Vol. 11, pp. 787-804, June 1968. (A. F. Charwat & L. G. Redekopp).
- "Analysis of the Electromechanical Piston Used in Calibrating Infrasonic Sensors and of the Modified Moore Variometer Used in Infrasound Studies," *J. Acoustical Soc. of Am.*, Vol. 43, pp. 1129-1136, May 1968. (U. Fehr, B. Ben-Ary & L. G. Redekopp).
- "Theoretical Analysis of Boundary Layer Regions in Stratified Flow," Report No. 69-23, School of Engineering and Applied Science, UCLA, July 1969. (L. G. Redekopp). Also, "The Boundary Layer on a Flat Plate in a Stably Stratified Flow," *Bull. Amer. Phys. Soc.*, Vol. 14, No. 11, pp. 1087-1088, 1969.
- "The Development of Horizontal Boundary Layers in Stratified Flow: Part I. Non-Diffusive Flow," J. Fluid Mech., Vol. 42, pp. 497-512, 1970. (R. E. Kelly & L. G. Redekopp).
- "The Development of Horizontal Boundary Layers in Stratified Flow: Part II. Diffusive Flow," J. Fluid Mech., Vol. 42, pp. 513-526, 1970. (L. G. Redekopp).
- "The Boundary Layer on a Flat Plate Moving Transversely in a Rotating, Stratified Fluid," J. Fluid Mech., Vol. 46, pp. 769-786, 1971. (L. G. Redekopp).
- "Shape Evolution of a Subliming Surface Subjected to Unsteady Spatially Non-Uniform Heat Flux," *Int. J. of Heat and Mass Transfer*, Vol. 14, pp. 673--687, 1971. (F. W. Spaid, A. F. Charwat, L. G. Redekopp & R. Rosen).
- "The Motion of a Viscous, Stratified Fluid Subjected to Forced Oscillations," *Recent Research on Unsteady Boundary Layers*, Vol. 2, E. A. Eichelbrenner, ed., les Presses de L'Universite Laval, Quebec, 1972. (L. G. Redekopp). Also, presented at IUTAM Symposium on Unsteady Layers, Quebec, Canada, May 1971.
- 10. "The Role of Buoyancy and the Boussinesq Approximation in Horizontal Boundary Layers," *J. of Hydronautics*, Vol. 6, pp. 34-39, January 1972. (L. G. Redekopp & A. F. Charwat).
- "Sidewall Boundary Layers in Rotating Axial Flow," J. Fluid Mechanics, Vol. 55, pp. 565-577, 1972. (L. G. Redekopp).
- "The Stability of Asymmetric Jets and Shear Layers," *Bull. Amer. Phys. Soc.*, Vol. 17, No. 11, p. 1076, 1972. (L. G. Redekopp).

 "Wave Patterns Generated by Disturbances Traveling Horizontally in Rotating Stratified Fluids," *Geophysical Fluid Dynamics*, Vol. 6, pp. 289-313, 1975. (L. G. Redekopp) Also, presented at the Seventh U.S. Nat'l Congress of Applied Mechanics, Boulder, Colorado, June 1974.
 Also, "Columnar Motions in Rotating, Stratified Fluids," *Bull. Amer. Phys. Soc.*, Vol.

16, No. 11, pp. 1331-1332, 1971. (L. G. Redekopp).

- "Internal Waves Produced by Underwater Vehicles: The Near Field", TRW Report 16062-6008-RU-00, Applied Physics Laboratory/Johns Hopkins University Issuing No. POR-3614,1974. (G. F. Carrier & L. G. Redekopp).
- "Internal Wave Patterns Produced by Underwater Vehicles," TRW Report 26062-6007-RU-00, Applied Physics Laboratory/Johns Hopkins University Issuing No. POR-3630, 1974. (C. L. Hindman & L. G. Redekopp).
- "On Disturbances Generated by Moving Sources in Non-Homogeneous Fluids," TRW Report 16062-6009-RU-00, Applied Physics Laboratory/Johns Hopkins University Issuing No. POR-3681, 1975. (C. L. Hindman & L. G. Redekopp).
- 17. "On the Motion of a Rotating Fluid in the Presence of an Infinite Rotating Disc," *Archives in Mechanics*, Vol. 28, 5--6; pp. 1011-1024, Warszawa, 1976. (P. D. Weidman & L. G. Redekopp).
  Also, <u>Proceedings of the XIIth Biennial Fluid Dynamics Symposium</u>, Spala, Poland, September 1975
  Also, *Bull. Am. Phys. Soc.*, Vol. 19, No. 10, p. 1159, 1974.
- "A Solitary Wave Theory of the Great Red Spot and Other Observed Features in the Jovian Atmosphere," *Icarus*, Vol. 29, pp. 261-271, 1976. (T. Maxworthy & L. G. Redekopp). Also, "On Solitary Waves in a Zonal Shear Flow," *Bull. Amer. Phys. Soc.*, Vol. 19, No. 10, p. 1142, 1974. (L. G. Redekopp). Also, presented at the Jupiter Colloquium, Tucson, Arizona, May 1975.
- 19. "New Theory of the Great Red Spot from Solitary Waves in the Jovian Atmosphere," *Nature*, Vol. 260, pp. 509-511, April 8, 1976. (T. Maxworthy & L. G. Redekopp).
- "Breakdown of Zakharov-Shabat Theory and Soliton Creation," *Phys. Rev. Lett.*, Vol. 38, No. 8, pp. 377-380, February 21, 1977. (A. C. Newell & L. G. Redekopp).
- "On Two-Dimensional Packets of Capillary-Gravity Waves," J. Fluid Mech., Vol. 79, pp. 703-714, 1977. (V. D. Djordjevic & L. G. Redekopp).
- 22. "On the Theory of Solitary Rossby Waves," J. Fluid Mech., Vol. 82, pp. 725-745, 1977. (L. G. Redekopp)
  Also, "Rossby Wave Solitons," Bull. Am. Phys. Soc., Vol.20, No. 11, p. 1432, 1975.
  Also, presented at the Conference on Atmospheric and Oceanic Waves and Stability, Seattle, Washington, March 1976. (L. G. Redekopp).

- 23. "Solitons in Shear Flows," *Geofluidynamical Wave Mathematics Research Contributions*, Conference Board of the Mathematical Sciences/National Science Foundation Regional Research Conference in the Mathematical Sciences, Seattle, Washington, pp. 202-215, 1977. (L. G. Redekopp).
  Also, "Nonlinear Waves in Shear Flows: Critical Layers and Subharmonic Destabilization," *Bull. Am. Phys. Soc.*, Vol. 22, No. 10. p. 1288, 1977.
- "On the Production and Interaction of Planetary Solitary Waves: Applications to the Jovian Atmosphere", *Icarus*, Vol. 33, pp. 388-409, 1978. (T. Maxworthy, L. G. Redekopp & P. D. Weidman).
- 25. "Solitary Rossby Waves in Zonal Shear Flows and Their Interactions," *J. Atm. Sciences*, Vol. 35, pp. 790-804, 1978. (L. G. Redekopp & P. D. Weidman). Also, "On the Interaction of Solitary Rossby Waves in Zonal Shear Flows," *Bull. Am. Phys. Soc.*, Vol. 21, No. 10, p. 1221, 1976.
- "Solitary Waves in Geophysical Applications," *Bull. Am. Phys. Soc.*, Vol. 23, No. 1, p. 89, 1978. (Invited Lecture at 1978 APS Annual Mtg., San Francisco, 23-26 Jan. 1978).
- "The Fission and Disintegration of Internal Solitary Waves Moving over Two-Dimensional Topography," *J. Physical Oceanography*, Vol. 8, pp. 1016-1024, 1978. (V. D. Djordjevic & L. G. Redekopp).
- "On the Development of Packets of Surface Gravity Waves Moving over an Uneven Bottom," ZAMP, Vol. 29, pp. 950-962, 1978. (V. D. Djordjevic & L. G. Redekopp).
- "Some Solutions Pertaining to the Resonant Interaction of Long and Short Waves," *Phys. Of Fluids*, Vol. 22, pp. 1872-1876, 1979. (Y.-C. Ma & L. G. Redekopp).
- "Solitary Waves in Stratified Shear Flows," *Geophys. Astrophys. Fluid Dynamics*, Vol. 13, pp. 185-196, 1979. (S. A. Maslowe & L. G. Redekopp).
- "The Nonlinear Capillary Instability of a Liquid Jet. Part 1, Theory", J. Fluid Mech., Vol. 96, pp. 259-276, 1980. (K. C. Chaudhary & L. G. Redekopp).
- "Similarity Solutions of Some Two-Space-Dimensional Nonlinear Wave Evolution Equations," *Stud. Appl. Math.*, Vol. 63, pp. 185-207, 1980. (L. G. Redekopp). Also, "Similarity Solutions of Two-Dimensional Wave Evolution Equations," *Bull. Am. Phys. Soc.*, Vol. 23, No. 8, p. 1014, 1978. (L. G. Redekopp).
- "Long Nonlinear Waves in Stratified Shear Flows," J. Fluid Mech., Vol. 101, pp. 321-348, 1980. (S. A. Maslowe & L. G. Redekopp).
- "Solitary Rossby Waves in the Presence of Vertical Shear," J. Atm. Sci., Vol. 37, pp. 2243-2247, 1980. (P. D. Weidman & L. G. Redekopp). Also, Bull. Am. Phys. Soc., Vol. 24, No. 8, p. 1144, 1979.

- "A Possible Fluid Dynamical Interpretation of Some Reported Features in the Jovian Atmosphere," *Science*, Vol. 210, pp. 1350-1351, December 19, 1980. (T. Maxworthy & L. G. Redekopp).
- "The Radiation Damping of Long, Finite Amplitude Internal Waves," *Phys. of Fluids*, Vol. 23, pp. 2182-2183, 1980. (N. R. Pereira & L. G. Redekopp).
- 37. "The Interaction of Long and Short Internal Gravity Waves: Theory and Experiment," J. Fluid Mech., Vol. 111, pp. 367-409,1981. (C. G. Koop & L. G. Redekopp). Also, Bull. Am. Phys. Soc., Vol. 25, No. 9, p. 1106, 1980. Also, "The Resonant Interaction of Long and Short Internal Gravity Waves: Theory and Experiment," TRW Report 34510-6061-TV-00, July 1979. (C. G. Koop & L. G. Redekopp).
- "Initial Conditions and Korteweg-deVries Solitons", J. of the Engr. Mech. Div., Proc. of the ASCE, Vol. 108, EM2, pp. 277-289, 1982. (P. D. Weidman & L. G. Redekopp).
- "Nonlinear Waves in Geophysics: Long Internal Waves," *Lectures in Applied Mathematics*, Am. Math. Soc., Vol. 20, pp. 59-78, 1983. (L. G. Redekopp).
   Also, "The Effect of Rotation on Long Internal Waves," *Bull. Am. Phys. Soc.*, Vol. 26, No. 9, p. 1276, 1981. (L. G. Redekopp).
- "Nonlinear Evolution Equations and Critical Layers," *Lectures in Applied Mathematics*, Am. Math. Soc., Vol. 20, pp. 79-96, 1983. (P. Huerre & L. G. Redekopp).
- "Three-Frequency Motion and Chaos in the Ginzburg-Landau Equation," *Phys. Rev. Lett.*, Vol. 49, No. 7, pp. 458-460, August 16, 1982. (H. T. Moon, P. Huerre & L. G. Redekopp). Also, "Long Time Dynamics of the Ginzburg-Landau Equation," *Bull. Am. Phys. Soc.*, Vol. 26, No. 9, p. 1263, 1981. (H. T. Moon, P. Huerre & L. G. Redekopp).
- 42. "Transitions to Chaos in the Ginzburg-Landau Equation," *Physica D*, Vol. 7, pp. 135-150, 1983. (H. T. Moon, P. Huerre & L. G. Redekopp).
  Also, "Bifurcations and Chaotic Transitions in the Ginzburg-Landau Equation," *Bull. Am. Phys. Soc.*, Vol. 27, No. 9, p. 1193, 1982. (H.T. Moon, P. Huerre & L.G. Redekopp).
- "Wave Motions on Vortex Cores," J. Fluid Mech., Vol. 151, pp. 141-165, 1985. (T. Maxworthy, E. J. Hopfinger & L. G. Redekopp).
- "Linear Stability Theory for a Subsonic Mixing Layer in the Viscous Critical Layer Regime", *A Symposium to Honor C. C. Lin*, World Scientific, D. J. Benney, F. H. Shu and Chi Yuan, eds., pp. 124-128, 1988. Symposium held June 22 - 24, 1987, MIT. (V. D. Djordjevic & L. G. Redekopp).
- "Models of Hydrodynamic Resonances in Separated Shear Flows," <u>Proceedings of the Sixth</u> <u>Symposium on Turbulent Shear Flows</u>, pp. 3.2.1-3.2.6, September 7-9, 1987, Toulouse, France. (J. M. Chomaz, P. Huerre & L. G. Redekopp).

- "Bifurcations to Local and Global Modes in Spatially-Developing Flows," *Phys. Rev. Lett.*, Vol. 60, No. 1, pp. 25-28, 1988. (J. M. Chomaz, P. Huerre & L. G. Redekopp). Also, "Wave Selection Mechanisms in Open Flows," *Bull. Am. Phys. Soc.*, Vol. 31, No. 10, p. 1696, 1986. (J. M. Chomaz, P. Huerre & L. G. Redekopp).
- "A Numerical Study of Bifurcations in a Barotropic Shear Flow," <u>Proceedings of the 1988</u> <u>Summer Program</u>, Center for Turbulence Research, NASA Ames Research Center/Stanford University, pp. 41-47, 1988. (P. Huerre, L. Keefe, G. Meunier, L. Rogers, L. G. Redekopp & P. Spalart).
- "Linear Stability Analysis of Nonhomentropic, Inviscid Compressible Flows," *Phys. Fluids*, Vol. 31, No. 11, pp. 3239-3245, 1988. (V. D. Djordjevic & L. G. Redekopp). Also, "Stability Analysis of Subsonic, Nonhomentropic Free Shear Layers," *Bull. Am. Phys. Soc.*, Vol. 32, No. 10, p. 2068, 1987. (L. G. Redekopp & V. D. Djordjevic).
- "Nonlinear Stability of Subsonic Mixing Layers with Symmetric Temperature Variations," *Proc. Roy. Soc. London*, Vol. A426, pp. 287-330, 1989. (V. D. Djordjevic & L. G. Redekopp).
- "Stability Properties of Subsonic Mixing Layers," Paper AIAA-89-1020, AIAA 2<sup>nd</sup> Shear Flow Conference, 13-16 March 1989, Tempe, AZ. (V. D. Djordjevic, S. Pavithran & L. G. Redekopp).
- "The Absolute-Convective Transition in Subsonic Mixing Layers," *Phys. Fluids A*, Vol. 1, No. 10, pp. 1736-1739, 1989. (S. Pavithran & L. G. Redekopp).
- "An Amplitude Equation for Broadband Evolution in Mixing Layers," *Bull. Am. Phys. Soc.*, Vol. 34, No. 10, p. 2270, 1989. (L. G. Redekopp, H. Asano & P. Huerre).
- 53. "The Effect of Profile Symmetry on the Nonlinear Stability of Mixing Layers," *Studies Appl. Math.*, Vol. 83, pp. 287-317, 1990. (V. D. Djordjevic & L. G. Redekopp). Also, "Profile Symmetries and the Nonlinear Stability of Free Shear Flows," *Bull. Am. Phys. Soc.*, Vol. 33, No. 10, p. 2247, 1988. (V. D. Djordjevic & L. G. Redekopp).
- 54. "The Effect of Nonlinearity and Forcing on Global Modes," New Trends in Nonlinear Dynamics and Pattern Forming Phenomena: The Geometry of Nonequilibrium, NATO ASI Series B: Physics, Vol. 237, pp. 259-274, Plenum Press, New York, 1990. (J. M. Chomaz, P. Huerre & L. G. Redekopp). Also, "Sensitivity to External Excitations, Absolute and Convective Instabilities in Spatially-Developing Systems," Bull. Am. Phys. Soc., Vol. 32, No. 10, p. 2069, 1987. (J. M. Chomaz, P. Huerre & L. G. Redekopp).
- 55. "A Frequency Selection Criterion in Spatially-Developing Flows," *Studies Appl. Math.*, Vol. 84, pp. 119-144, 1991. (J. M. Chomaz, P. Huerre & L. G. Redekopp).
  Also, "A Frequency Selection Mechanism in Spatially-Developing Flows," *Bull. Am. Phys. Soc.*, Vol. 33, No. 10, p. 2283, 1988. (P. Huerre, J. M. Chomaz & L. G. Redekopp).

- 56. "A Linear Stability Analysis of the Coupling of Gravity Waves and Convection," *Europ. J. Mech. B/Fluids*, Vol. 10, No. 2-Supplement, pp. 75-80, 1991. (S. Pavithran & L. G. Redekopp). Also, "Rayleigh Benard Instability in the Presence of a Deformable Interface," *Bull. Am. Phys. Soc.*, Vol. 34, No. 10, p. 2272, 1989. (S. Pavithran & L. G. Redekopp).
- "The Stability of a Sheared Density Interface," *Phys. Fluids A*, Vol. 3, No. 10, pp. 2360-2370, 1991. (G. A. Lawrence, F. K. Browand & L. G. Redekopp).
- "Linear Instability Characteristics of Wake-Shear Layers," *Phys. Fluids A*, Vol. 4, No. 1, pp. 189-191, 1992. (D. Wallace & L. G. Redekopp).
   Also, "Linear Instability Characteristics of Wake-Shear Layers," Paper *AIAA-91-1644*, AIAA 22nd Fluid Dynamics, Plasma Dynamics and Lasers Conference, Honolulu, Hawaii, 24-26 June 1991. (D. Wallace & L. G. Redeopp).
- "Transcritical, Shallow-Water Flow Over Compact Topography," *Wave Motion*, Vol. 15, pp. 1-22, 1992. (V. D. Djordjevic & L. G. Redekopp). Also, "Sharp-Crested, Permanent Wave Forms," *Bull. Am. Phys. Soc.*, Vol. 30, No. 10, p. 1756, 1985. (V. D. Djordjevic & L. G. Redekopp).
- 60. "Breakdown of a Coherent Global Mode," *Physics Lett. A*, Vol. 164, Nos. 3 & 4, pp. 289-294, 1992. (D. Park & L. G. Redekopp).
  Also, *Bull. Am. Phys. Soc.*, Vol. 36, No. 10, p. 2644, 1991. (D. Park & L. G. Redekopp).
- 61. "A Model for Pattern Selection in Wake Flows," *Phys. Fluids A*, Vol. 4, No. 8, pp. 1697-1706, 1992. (D. Park & L. G. Redekopp). Also, "A Model of Boundary Effects in Karman Vortex Streets", Bull. Am. Phys. Soc., Vol. 34, No. 10, p. 2282, 1989. (M. Rossi, P. Huerre & L. G. Redekopp).
- 62. "Resonantly Interacting Modes in Wake-Shear Layers," *Europ. J. Mech. B/Fluids*, Vol. 13, No. 2, pp. 139-164, 1994. (D. Wallace, L. G. Redekopp & P. Huerre). Also, "Stability Properties and Nonlinear Interactions for Wake-Shear Layers," *Bull. Am. Phys. Soc.*, Vol. 35, No. 10, p. 2311, 1990. (L. G. Redekopp, D. Wallace & P. Huerre).
- 63. "The Coupling of Gravity Waves and Convection: Amplitude Equations and Planform Selection," *Stud. Appl. Math.*, Vol. 93, pp. 209-250, 1994. (S. Pavithran & L. G. Redekopp).
  Also, "Coupling Between Convection Rolls and Long Gravity Waves: A Natural Codimension Three Problem," **Bull. Am. Phys. Soc.**, Vol.31, No. 10, p. 1729, 1986.
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  Also, "A Numerical Study of the Coupling of Gravity Waves with Convection," *Bull. Am. Phys. Soc.*, Vol. 36, No. 10, p. 2642, 1991. (L. G. Redekopp & S. Pavithran).

- 64. "The Interaction of Convection and Internal Waves," <u>Proc. 4th International Symposium on Stratified Flows</u>, Vol. 1, Grenoble, France, June 29 July 2, 1994. (N. Kale & L. G. Redekopp).
  Also, "The Coupling of Convection and Waves: Analysis of the Longwave Bifurcation," *Bull. Am. Phys. Soc.*, Vol. 38, No. 12, pp. 2291-2292, 1993. (N. Kale & L. G. Redekopp).
- 65. "Passage through Resonance for the Forced Korteweg-deVries Equation," *Phys. Rev. Lett.*, Vol. 74, No. 26, pp. 5158-5161, 1995. (L. G. Redekopp & Z. You). Also, "Passage through Resonance for the Forced KdV Equation," *Bull. Am. Phys. Soc.*, Vol. 37, No. 8, p. 1809, 1992. (L. G. Redekopp & Z. You).
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- 67. "Global Dynamics of Symmetric and Asymmetric Wakes," *J. Fluid Mech.* Vol. 331, pp.231-260 1997. (D. A. Hammond & L. G. Redekopp). Also, "Global Dynamics and Flow Vectoring in Asymmetric Wakes," Paper *AIAA 94-2219*, AIAA 25<sup>th</sup> Fluid Dynamics Conference, 20-23 June 1994, Colorado Springs, CO. (D. Hammond & L. G. Redekopp). Also, "Symmetry Breaking and Flow Vectoring in Wake-Shear Layers," *Bull. Am. Phys. Soc.*, Vol. 38, No. 12, p. 2303, 1993. (D. Wallace & L. G. Redekopp).
- 68. "Sediment Resuspension and Mixing by Resonantly-Generated Internal Solitary Waves,"
  J. Physical Ocean. Vol. 27, pp. 1181-1196, 1997. (D. Bogucki, T. Dickey & L. G. Redekopp).
  Also, "The Resonantly-Forced Korteweg-deVries Equation and Sediment Resuspension," Paper AIAA 96-2147, 1<sup>st</sup> AIAA Theoretical Fluid Mechanics Meeting, 17-20 June 1996, New Orleans, LA.

Also, "Resonantly-Forced Internal Wave Solitons and Sediment Resuspension," *Bull. Am. Phys. Soc.*, Vol. 40, No. 12, p. 1953, 1995. (D. A. Hammond & L. G. Redekopp).

- "Global Dynamics and Aerodynamic Flow Vectoring of Wakes," J. Fluid Mech., Vol. 338, pp. 231-248, 1997. (D. A. Hammond & L. G. Redekopp).
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- "Local and Global Instability Properties of Separation Bubbles," *Europ. J. Mech. B/Fluids.*, Vol. 17, No. 2, pp.145-164, 1998. (D. A. Hammond & L. G. Redekopp).
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#### Patents

Patent No.5532406Title:Flow-vectored trailing-edge for airfoils and jets.Issue Date.2 July 1996