Curriculum Vitae: SERGE D'ALESSIO, Ph.D., P.Eng.

Office of the Dean
Faculty of Mathematics
University of Waterloo
Waterloo, Ontario, N2L 3G1

tel: (519)888-4567 ext. 35014, **fax:** (519)746-0274
e-mail: sdalessio@uwaterloo.ca
www: http://www.math.uwaterloo.ca/~sdalessi/
Citizenship: Canadian

EDUCATION

PH.D., (APPLIED MATHEMATICS), UNIVERSITY OF WESTERN ONTARIO, 1993

Supervisor: Dr. S.C.R. Dennis
Research Area: Analytical and computational fluid dynamics.
Dissertation: Models for Steady State Flow Past a Cylinder

M.ENG., (ENGINEERING PHYSICS), McMASTER UNIVERSITY, 1988

Supervisor: Dr. A.A. Harms
Research Area: Computer modelling of meteors/comets in the atmosphere.
Thesis: The Nuclear and Aerial Dynamics of the Tunguska Event

B.ENG., (ENGINEERING PHYSICS, GRADUATED SUMMA CUM LAUDE), McMASTER UNIVERSITY, 1986

Project Course: Interfaced a computer to a photomultiplier to digitize a neutron radiographic image.

ACADEMIC AWARDS, SCHOLARSHIPS & FELLOWSHIPS

- 1996-1997 Canadian Government Laboratory Visiting Fellowship
- 1994-1995 NSERC Postdoctoral Fellowship
- 1992 Graduate Research Fellowship
- 1992 Summer Graduate Research Award
- 1991-1992 Special University Scholarship
- 1989-1990 Graduate Studies Admission Scholarship
- 1989-1990 NSERC Postgraduate Scholarship
- 1988 Governor General's Gold Medal
- 1986-1987 NSERC Postgraduate Scholarship
- 1986-1987 H.L. Hooker Graduate Scholarship
- 1984 Summer NSERC Research Award
- 1983-1984 H.A. Ricker Scholarship
- 1981 Chancellor's Scholarship

EMPLOYMENT HISTORY

July 2003 - present	**Associate Professor** (Tenured), Dean's Office, Faculty of Mathematics, University of Waterloo, Waterloo, Ontario
July 1999 - June 2003	**Assistant Professor** (Tenure Track), Dean's Office, Faculty of Mathematics, University of Waterloo, Waterloo, Ontario
July 1997 - June 1999	**Assistant Professor** (Definite Term), Dean's Office, Faculty of Mathematics, University of Waterloo, Waterloo, Ontario
January 1996 - June 1997	**Visiting Fellow**, Canadian Centre for Climate Modelling and Analysis, University of Victoria, Victoria, British Columbia
January 1994 - December 1995	**Postdoctoral Fellow and Lecturer**, Department of Mathematical and Statistical Sciences, University of Alberta, Edmonton, Alberta
May 1993 - December 1993	**Research Associate and Lecturer**, Department of Applied Mathematics, University of Western Ontario, London, Ontario
September 1989 - April 1993	**Teaching Assistant and Lecturer**, Department of Applied Mathematics, University of Western Ontario, London, Ontario
August 1988 - May 1989	**Physics Instructor**, Division of Mathematics and Science, Okanagan University College, Kelowna, British Columbia
September 1984 - May 1988	**Teaching Assistant**, Department of Engineering Physics, McMaster Univeresity, Hamilton, Ontario
May 1985 - June 1985	**Part-time Research Assistant**, Department of Engineering Physics, McMaster Univeresity, Hamilton, Ontario
May 1984 - August 1984	**Research Student**, Department of Engineering Physics, McMaster Univeresity, Hamilton, Ontario

PROFESSIONAL AFFILIATIONS

- Canadian Applied and Industrial Mathematics Society
- Canadian Meteorological and Oceanographic Society
- Ontario Society of Professional Engineers
- Professional Engineers Ontario
- Society for Industrial and Applied Mathematics

SERVICE

- Associate Dean, Undergraduate Admissions and Outreach 2010 - present
- Director of First Year Studies 2004 - 2009
- Coordinator of the Mathematics Tutorial Centre 1997 - 2003

RESEARCH GRANTS

- NSERC Discovery Grant, 2006 - 2011 ($85,000)
- NSERC Research Grant, 2001 - 2006 ($75,000)
- University of Waterloo (R.A. Support Program), 2000 ($6,750)
- NSERC Research Grant, 1998 - 2001 ($36,500)
- CFI Equipment Grant (Co-Recipient), 1998 ($56,000)
- University of Waterloo (Start-up Grant), 1997 ($12,000)

REFEREEING

Papers reviewed for (number of articles):

- *Archive of Applied Mechanics* (2)
- *Canadian Society of Mechanical Engineers Transactions* (1)
- *Chemical Engineering Science* (1)
- *Industrial and Engineering Chemistry Research* (5)
- *International Journal of Heat and Mass Transfer* (5)
- *Journal of Computational Physics* (1)
- *Journal of Fluid Mechanics* (1)
- *Journal of Geophysical Research - Oceans* (1)
- *Journal of Hydrology* (1)
- *Journal of Physical Oceanography* (2)
- *Mechanics Research Communications* (1)
- *Ocean Modelling* (1)
- *Physics of Fluids* (1)
- *Studies in Applied Mathematics* (2)
- *The Canadian Applied Mathematics Quarterly* (1)
- *The Canadian Journal of Chemical Engineering* (1)
- *The Canadian Journal of Physics* (1)
- *The 6th ASME-JSME Thermal Engineering Conference* (1)
- *Transactions of the Canadian Society for Mechanical Engineering* (1)

STUDENT SUPERVISION

NAME	YEAR	STATUS	PROJECT
Kelly Ogden	2009 - present	MMath	Roll Waves
Derek Steinmoeller	2007 - 2009	MMath	Barotropic Flows
William Ko	2007 (summer)	Research Assistant	Scientific Computation
Ranmal Perera	2006 - 2008	MMath	Large Grashof Number Flows
Leslie Finlay	2004 - 2006	MMath	Thermal Stability
Alex Korobov	2004	Research Associate	Convective Shear Flows
Martin Williams	2002 - 2004	MMath & Research Assistant	Free Convection
Fred Chapman	2003 (summer)	Research Associate	Scientific Visualization
Mike Saunders	2000 - 2002	MMath	Mixed Convection
Scott Gusba	2001 (summer)	Research Assistant	Problems in Heat Transfer
David Harmsworth	2000 (summer)	Research Assistant	Forced Convection

POSTDOCTORAL FELLOW SUPERVISION

NAME	YEAR	PROJECT	PRESENT POSITION
Katrin Rohlf	2002 (summer)	Unsteady Shear Flows	Assistant Professor (Ryerson University)

I am also actively co-supervising students at Ryerson University with Dr. J.P. Pascal; these include H.A. Jasmine, a postdoctoral researcher, and N. Gonputh, a Master's student.

THESIS COMMITTEE MEMBERSHIP

NAME	INSTITUTION	DEGREE	POSITION	YEAR
Timothy Rees	U. Waterloo (Applied Math)	Ph.D.	Advisory Committee Member	2008
Youna Hu	U. Waterloo (Applied Math)	M.Math.	Examining Committee Member	2007
Vladimir Gerasik	U. Waterloo (Applied Math)	M.Math.	Examining Committee Member	2006
Jueun Kim	U. Waterloo (Applied Math)	M.Math.	Examining Committee Member	2005
James Munroe	U. Waterloo (Applied Math)	M.Math.	Examining Committee Member	2004
Matthew Scott	U. Waterloo (Applied Math)	Ph.D.	Advisory Committee Member	2003
Ranis Ibragimov	U. Waterloo (Applied Math)	Ph.D.	Advisory Committee Member	2002
Corina Drapaca	U. Waterloo (Applied Math)	Ph.D.	Examining Committee Member	2002

PUBLICATIONS LIST

Refereed Journal Publications:

1. D.T. Steinmoeller, S.J.D. D'Alessio and F.J. Poulin, Prograde and Retrograde Flow Past Cylindrical Obstacles on a β-plane, *Acta Mechanica*, (accepted September 2010).

2. S.J.D. D'Alessio, J.P. Pascal, H.A. Jasmine and K.A. Ogden, Film flow over heated wavy inclined surfaces, *Journal of Fluid Mechanics*, **665**, 418-456, 2010.

3. J.P. Pascal and S.J.D. D'Alessio, Instability in gravity-driven flow over uneven permeable surfaces, *International Journal of Multiphase Flow*, **36**, 449-459, 2010.

4. S.J.D. D'Alessio and R.N. Perera, Unsteady free convection from elliptic cylinders at large Grashof numbers, *International Journal of Heat and Mass Transfer*, **52**, 5940-5953, 2009.

5. S.J.D. D'Alessio, J.P. Pascal and H.A. Jasmine, Instability in gravity-driven flow over uneven surfaces, *Physics of Fluids*, **21**, 062105, 2009.

6. S.J.D. D'Alessio, L.A. Finlay and J.P. Pascal, Free convection from elliptic cylinders at small Grashof numbers, *International Journal of Heat and Mass Transfer*, **51**, 1379-1392, 2008.

7. S.J.D. D'Alessio and S. Kocabiyik, Numerical simulations of the flow past an obliquely oscillating elliptic cylinder, *The Canadian Applied Mathematics Quarterly*, **15**, 247-278, 2007.

8. J.P. Pascal, T.B. Moodie, N. Antar and S.J.D. D'Alessio, Solutions for initial-boundary-value problems representing gravity currents arising from variable inflows, *Studies In Applied Mathematics*, **119**, 127-171, 2007.

9. J.P. Pascal and S.J.D. D'Alessio, Instability of power-law fluid flows down an incline subjected to wind stress, *Applied Mathematical Modelling*, **31**, 1229-1248, 2007.

10. C.L. Tang, S.J.D. D'Alessio and B.M. DeTracey, Mixed-layer simulations at OWS Bravo: the role of salinity in interannual variability of the upper ocean at high latitude, *International Journal of Oceans and Oceanography*, **1**, 119-139, 2006.

11. S.J.D. D'Alessio, J.P. Pascal and T.B. Moodie, Thermohaline considerations in surface gravity driven flows, *International Journal of Engineering Science*, **44**, 1237-1255, 2006.

Refereed Journal Publications (continued):

12. T.B. Moodie, J.P. Pascal and S.J.D. D'Alessio, Thermally-enhanced motions of variable-inflow surface gravity-driven flows, *Studies In Applied Mathematics*, **115**, 405-432, 2005.

13. K. Rohlf and S.J.D. D'Alessio, Uniform shear flow past a circular cylinder, *Acta Mechanica*, **178**, 199-222, 2005.

14. J.P. Pascal, T.B. Moodie and S.J.D. D'Alessio, Stratified two-layer thermally-enhanced gravity-driven flows, *International Journal of Engineering Science*, **43**, 59-78, 2005.

15. T.B. Moodie, J.P. Pascal and S.J.D. D'Alessio, Nonhydraulic effects in two-layer thermally-enhanced gravity-driven flows, *International Journal of Non-Linear Mechanics*, **40**, 11-25, 2005.

16. S.J.D. D'Alessio and L.A. Finlay, Power-law flow past a cylinder at large distances, *Industrial and Engineering Chemistry Research*, **43**, 8407-8410, 2004.

17. S.J.D. D'Alessio, J.P. Pascal and T.B. Moodie, Thermally enhanced gravity driven flows, *Journal of Computational and Applied Mathematics*, **170**, 1-25, 2004.

18. S. Kocabiyik and S.J.D. D'Alessio, Numerical study of flow around an inclined elliptic cylinder oscillating in line with an incident uniform flow, *European Journal of Mechanics - B / Fluids*, **23**, 279-302, 2004.

19. S.J.D. D'Alessio, M.G. Saunders and D.L. Harmsworth, Mixed convective heat transfer from an accelerating elliptic cylinder, *International Journal of Heat and Mass Transfer*, **46**, 2927-2946, 2003.

20. K. Abdella and S.J.D. D'Alessio, A parameterization of the roughness length for the air-sea interface in free convection, *Environmental Fluid Mechanics*, **3**, 55-77, 2003.

21. J.P. Pascal and S.J.D. D'Alessio, The Effects of Density Extremum and Rotation on the Onset of Thermal Instability, *International Journal of Numerical Methods for Heat and Fluid Flow*, **13**, 266-285, 2003.

22. S.J.D. D'Alessio and S. Kocabiyik, Forced convection from transversely oscillating elliptic cylinder, *International Journal of Transport Phenomena*, **5**, 103-118, 2002.

23. S.J.D. D'Alessio, Concerning the influence of wave breaking on Monin-Obukhov similarity theory, *Acta Mechanica*, **157**, 1-14, 2002.

Refereed Journal Publications (continued):

24. S.J.D. D'Alessio and S. Kocabiyik, Numerical simulation of the flow induced by a transversely oscillating inclined elliptic cylinder, *Journal of Fluids and Structures*, **15**, 691-715, 2001.

25. S.J.D. D'Alessio and F.W. Chapman, The initial flow past a uniformly accelerating inclined elliptic cylinder, *The Canadian Applied Mathematics Quarterly*, **8**, 203-234, 2000.

26. S.J.D. D'Alessio and J.P. Pascal, Linear stability of steady fluid flow through a constricted channel, *Acta Mechanica*, **143**, 203-213, 2000.

27. S.J.D. D'Alessio, S.C.R. Dennis and P. Nguyen, Unsteady viscous flow past an impulsively started oscillating and translating elliptic cylinder, *Journal of Engineering Mathematics*, **35**, 339-357, 1999.

28. S.J.D. D'Alessio, K. Abdella and N.A. McFarlane, A new second order turbulence closure scheme for modeling the oceanic mixed layer, *Journal of Physical Oceanography*, **28**, 1624-1641, 1998.

29. S.J.D. D'Alessio, Steady and unsteady forced convection past an inclined elliptic cylinder, *Acta Mechanica*, **123**, 99-115, 1997.

30. S.J.D. D'Alessio, T.B. Moodie, J.P. Pascal and G.E. Swaters, Intrusive gravity currents, *Studies In Applied Mathematics*, **98**, 19-46, 1997.

31. S.J.D. D'Alessio, Steady, unsteady and linear stability of flow past an elliptic cylinder, *The Canadian Applied Mathematics Quarterly*, **4**, 341-379, 1996.

32. S.J.D. D'Alessio and J.P. Pascal, Steady flow of a power-law fluid past a cylinder, *Acta Mechanica*, **117**, 87-100, 1996.

33. S.J.D. D'Alessio, T.B. Moodie, J.P. Pascal and G.E. Swaters, Gravity currents produced by sudden release of a fixed volume of heavy fluid, *Studies In Applied Mathematics*, **96**, 359-385, 1996.

34. S.J.D. D'Alessio and S.C.R. Dennis, Steady laminar forced convection from an elliptic airfoil, *Journal of Engineering Mathematics*, **29**, 181-193, 1995.

35. S.J.D. D'Alessio and S.C.R. Dennis, A method of domain decomposition for calculating the steady flow past a cylinder, *Journal of Engineering Mathematics*, **28**, 227-240, 1994.

36. S.J.D. D'Alessio and S.C.R. Dennis, A vorticity model for viscous flow past a cylinder, *Computers & Fluids*, **23**, 279-293, 1994.

Refereed Journal Publications (continued):

37. S.J.D. D'Alessio and A.A. Harms, On the aerial dynamics of the Swift-Tuttle comet, *Planetary and Space Science*, **41**, 665-668, 1993.

38. S.J.D. D'Alessio and A.A. Harms, The nuclear and aerial dynamics of the Tunguska event, *Planetary and Space Science*, **37**, 329-340, 1989.

39. S.J.D. D'Alessio and A.A. Harms, Comet induced nuclear fusion in the atmosphere, *Annals of Nuclear Energy*, **15**, 567-569, 1989.

Book Chapters:

1. C.L. Tang, N.A. McFarlane and S.J.D. D'Alessio, Boundary layer models for the ocean and atmosphere (Chp. 7). In: W. Perrie (editor), *Atmosphere-Ocean Interactions, Volume 1, Advances in Fluid Mechanics*, pp. 223-264, 2002, WIT Press, Southampton, UK.

Conference Proceedings (period 2000 - present):

1. K.A. Ogden, S.J.D. D'Alessio and J.P. Pascal, Modelling gravity-driven flow over uneven surfaces. In: M. Rahman & C.A. Brebbia (editors), *Advances in Fluid Mechanics VIII*, Vol. **69**, pp. 299-309, WIT Press, 2010.

2. J.P. Pascal and S.J.D. D'Alessio, Simulating flows over wavy inclined surfaces. In: H.R. Arabnia (editor), *Proceedings of the 2009 International Conference on Scientific Computing - CSC 2009*, pp. 113-117, CSREA Press, 2009.

3. D. Steinmoeller, S.J.D. D'Alessio and F.J. Poulin, Simulating Flows Past Cylinders on the β-plane, In: J. Militzer & I. Ugursal (co-chairs), *Proceedings of the 22nd Canadian Congress of Applied Mechanics CANCAM 2009*, pp. 58-59, 2009.

4. R.N. Perera and S.J.D. D'Alessio, Unsteady free convection from a heated tube. In: D.J. Bergstrom & R. Spiteri (co-chairs), *Proceedings of the 16th Annual Conference of the Computational Fluid Dynamics Society of Canada CFD 2008*, Session 5A - Natural Convection, 2008.

5. D. Steinmoeller, S.J.D. D'Alessio and F.J. Poulin, Sheared flow past an elliptic airfoil. In: D.J. Bergstrom & R. Spiteri (co-chairs), *Proceedings of the 16th Annual Conference of the Computational Fluid Dynamics Society of Canada CFD 2008*, Session 7C - Aerodynamic Flows, 2008.

6. S.J.D. D'Alessio and J.P. Pascal, A mathematical and numerical study of roll waves. In: M. Rahman & C.A. Brebbia (editors), *Advances in Fluid Mechanics VII*, Vol. **59**, pp. 457-466, WIT Press, 2008.

Conference Proceedings (continued):

7. S.J.D. D'Alessio, A numerical method for studying impulsively generated convection from heated tubes. In: C.A. Brebbia & G.M. Carlomagno (editors), *Computational Methods and Experimental Measurements XIII*, Vol. **46**, pp. 425-435, WIT Press, 2007.

8. S.J.D. D'Alessio and J.P. Pascal, A comparative study of gravity current models in deep surroundings. In: G. Kawall, S. Yu & D. Naylor (editors), *Proceedings of the 21st Canadian Congress of Applied Mechanics CANCAM 2007*, pp. 496-497, 2007.

9. J.P. Pascal and S.J.D. D'Alessio, Instability of laminar flow down an uneven inclined plane. In: C.P.T. Groth, M.F. lightstone & J.W. Yokota (editors), *Proceedings of the 15th Annual Conference of the Computational Fluid Dynamics Society of Canada CFD 2007*, Session 5D - Fluid Dynamics, 2007.

10. L.A. Finlay, S.J.D. D'Alessio and J.P. Pascal, Steady, unsteady and linear stability of free convection from a heated tube. In: A. Pollard, J. Pharoah & D. Matovic (editors), *Proceedings of the 14th Annual Conference of the Computational Fluid Dynamics Society of Canada CFD 2006*, Section 13 - Heat Transfer III, 2006.

11. S.J.D. D'Alessio, J.P. Pascal and T.B. Moodie, Rear shock formation in gravity currents. In: M. Rahman & C.A. Brebbia (editors), *Advances in Fluid Mechanics VI*, Vol. **52**, pp. 445-455, WIT Press, 2006.

12. T.B. Moodie, J.P. Pascal and S.J.D. D'Alessio, Hot spots and nonhydraulic effects in surface gravity flows. In: M. Rahman & C.A. Brebbia (editors), *Advances in Fluid Mechanics VI*, Vol. **52**, pp. 175-184, WIT Press, 2006.

13. M.L. Williams, A.S. Korobov, S.J.D. D'Alessio and J.P. Pascal, Forced convection from a rotating circular cylinder in a uniform shear flow. Part 1: Analytical Results. In: M. Ostoja-Starzewski (editor), *Proceedings of the 20th Canadian Congress of Applied Mechanics CANCAM 2005*, pp. 286-287, 2005.

14. A.S. Korobov, M.L. Williams, S.J.D. D'Alessio and J.P. Pascal, Forced convection from a rotating circular cylinder in a uniform shear flow. Part 2: Numerical Results. In: M. Ostoja-Starzewski (editor), *Proceedings of the 20th Canadian Congress of Applied Mechanics CANCAM 2005*, pp. 288-289, 2005.

15. M.L. Williams and S.J.D. D'Alessio, Free convection from an inclined elliptic cylinder. Part 1: Analytical results. In: S. Chen and S. McIlwain (editors), *Proceedings of the 12th Annual Conference of the Computational Fluid Dynamics Society of Canada CFD 2004*, pp. 247-253, 2004.

Conference Proceedings (continued):

16. S.J.D. D'Alessio and M.L. Williams, Free convection from an inclined elliptic cylinder. Part 2: Numerical results. In: S. Chen and S. McIlwain (editors), *Proceedings of the 12th Annual Conference of the Computational Fluid Dynamics Society of Canada CFD 2004*, pp. 254-261, 2004.

17. S.J.D. D'Alessio, Analytical study of unsteady free convection from an inclined elliptic cylinder. In: S. Dost, H. Struchtrup & I. Dincer (editors), *Progress in Transport Phenomena*, pp. 69-74, Elsevier, 2002.

18. M.G. Saunders and S.J.D. D'Alessio, Determination of the initial stages of mixed convection from an accelerating elliptic cylinder. In: S. Dost, H. Struchtrup & I. Dincer (editors), *Progress in Transport Phenomena*, pp. 357-362, Elsevier, 2002.

19. S.J.D. D'Alessio, Mixed-layer modelling at ocean weathership station Bravo. In: H. Power & C.A. Brebbia (editors), *Computational Methods in Multiphase Flow*, Vol. **29**, pp. 287-297, WIT Press, 2001.

20. D.L. Harmsworth and S.J.D. D'Alessio, Forced convective heat transfer for an accelerating elliptic cylinder. Part 1: Analytical Results. In: *Proceedings of the 18th Canadian Congress of Applied Mechanics CANCAM 2001*, pp. 175-176, 2001.

21. S.J.D. D'Alessio and D.L. Harmsworth, Forced convective heat transfer for an accelerating elliptic cylinder. Part 2: Numerical Results. In: *Proceedings of the 18th Canadian Congress of Applied Mechanics CANCAM 2001*, pp. 177-178, 2001.

22. S. Kocabiyik and S.J.D. D'Alessio, Forced convection past a transversely oscillating inclined elliptic cylinder. In: I. Dincer & M.F. Yardim (editors), *Recent Advances in Transport Phenomena*, pp. 57-62, Elsevier, 2000.

23. S. Kocabiyik and S.J.D. D'Alessio, On an elliptic cylinder under translational oscillation. In: M. Teixeira, I. Fejtek, D. Pelletier (editors), *Proceedings of the 8th Annual Conference of the Computational Fluid Dynamics Society of Canada CFD2K*, pp. 591-596, 2000.

24. S.J.D. D'Alessio, One-dimensional modelling of the upper ocean and lake. In: M. Rahman & C.A. Brebbia (editors), *Advances in Fluid Mechanics III*, Vol. **26**, pp. 523-535, WIT Press, 2000.

25. J.P. Pascal and S.J.D. D'Alessio, Surface gravity currents subject to wind stress. In: M. Rahman & C.A. Brebbia (editors), *Advances in Fluid Mechanics III*, Vol. **26**, pp. 105-114, WIT Press, 2000.

PRESENTATIONS (period 2000 - present):

1. Modelling gravity-driven flow over wavy inclined surfaces. *Canadian Symposium on Fluid Dynamics*, St. John's, Newfoundland, July 17 - 20, 2010.

2. Film flow over heated wavy inclined surfaces. *Wave Phenomena IV*, Edmonton, Alberta, June 14 - 18, 2010.

3. Instability of inclined film flow over wavy permeable surfaces. *Wave Phenomena IV*, Edmonton, Alberta, June 14 - 18, 2010.

4. Simulating flows over wavy inclined surfaces. *The 2009 International Conference on Scientific Computing - CSC 2009*, Las Vegas, USA, July 13 - 16, 2009.

5. Instability of gravity-driven flow over uneven surfaces. *CMS Winter Meeting 2008*, Ottawa, Ontario, December 6-8, 2008.

6. A mathematical and numerical study of roll waves. *Advances in Fluid Mechanics, AFM 2008*, New Forest, UK, May 21 - 23, 2008.

7. A comparative study of gravity current models in deep surroundings. *21st Canadian Congress of Applied Mechanics CANCAM 2007*, Toronto, Ontario, June 3 - 7, 2007.

8. A numerical method for studying impulsively generated convection from heated tubes. *Computational Methods and Experimental Measurements, CMEM 2007*, Prague, Czech Republic, July 2 - 4, 2007.

9. Rear shock formation in gravity currents. *Advances in Fluid Mechanics, AFM 2006*, Skiathos, Greece, May 8 - 10, 2006.

10. Sheared flow past a cylinder, *16th Canadian Symposium on Fluid Dynamics CSFD 2004*, Dalhousie University, Halifax, Nova Scotia, June 13 - 15, 2004.

11. Free convection from an inclined elliptic cylinder. Part 2: Numerical results, *12th Annual Conference of the Computational Fluid Dynamics Society of Canada CFD 2004*, Ottawa, Ontario, May 9 - 11, 2004.

12. Thermally Driven Gravity Currents. Part 1: Formulation and Analytical Results. *The Canadian Applied and Industrial Mathematics Society Meeting CAIMS 2003*, Montreal, Quebec, June 16 - 20, 2003.

13. Analytical study of unsteady free convection from an inclined elliptic cylinder. *The 13th International Symposium on Transport Phenomena*, Victoria, B.C., July 14 - 18, 2002.

PRESENTATIONS (continued):

14. Mixed convection from an accelerating elliptic cylinder. *The Canadian Applied and Industrial Mathematics Society Meeting CAIMS 2002*, Calgary, Alberta, June 8 - 10, 2002.

15. Mixed-layer modelling at ocean weathership station Bravo. *First International Conference on Multiphase Flow 2001*, Orlando, Florida, USA, March 14 - 16, 2001.

16. Forced convective heat transfer for an accelerating elliptic cylinder. Part 2: Numerical Results. *The 18th Canadian Congress of Applied Mechanics CANCAM 2001*, St. John's, Newfoundland, June 3 - 7, 2001.

17. Mixed-layer simulations at OWS Bravo: The role of salinity in the mixed-layer dynamics. *Wave Phenomena III*, Edmonton, Alberta, June 11 - 15, 2001.

18. Sensitivity of oceanic mixed layer to surface forcing, *34th Annual Congress of the Canadian Meteorological and Oceanographic Society CMOS 2000*, University of Victoria, Victoria, B.C., May 29 - June 2, 2000.

19. One-dimensional modelling of the upper ocean and lake. *Advances in Fluid Mechanics 2000*, Montreal, Quebec, May 24 - 26, 2000.