Department : Mathematics and Statistics **Date :** 2011.06.27
University of Ottawa.

CURRICULUM VITAE

a) Name : **Employee number** 10763

VAILLANCOURT Rémi, Adjunct professor, tenure 1974(?)
Member of the Department of Mathematics and Statistics
Member of the Ottawa-Carleton Mathematics and Statistics Institute
Member of the Ottawa-Carleton Computer Science Institute
Member of the Faculty of Graduate and Postdoctoral Studies
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b) University degrees :

Ph.D.	Mathematcs	New York University	1969
M.Sc.	Mathematics	Ottawa	1964
B.Sc.	Mathematics	Ottawa	1961
B.A.	Philosophy	Ottawa	1957
M.Th.	Theology	Ottawa	1965

c) Experience :

1999–	Adjunct Professor,	University of Ottawa
1997–2003	Member of SITE,	University of Ottawa
1994–	Full Professor,	University of Ottawa
1973–94	Associate Professor,	University of Ottawa
1972–76	Chairman of the Department of Mathematics,	University of Ottawa
1970–73	Assistant Professor,	University of Ottawa
1969–70	Research Associate,	University of Chicago
1969	Research Assistant,	Courant Institute, NYU
1968	Instructor,	New York University
1965–69	Lecturer on study leave,	University of Ottawa
1959–61	Teaching Assistant,	Université d'Ottawa

e) University and professional work :

2011 External examiner of the Ph.D. thesis of Y. Zhou at Carleton Carleton,
2010 Examinateur de la thèse de M.Sc. de G. Giordano à l'Univ. d'Ottawa,
2011 Joint-Editor of Vestnik St. Petersburg University: Mathematics
2007 Joint-Editor of Scientific J. of Riga Technical Univ. : Computer Science
2009 Joint-Editor of Journal of Wavelet Transforms and Applications
2010 Chair of Ph.D. (Chemistry) thesis defence of K. McGilvray
2010 External reader of the D.Sc. thesis of R. K. Deka at Gauhati Univ., India,
2009 Reader of Ph.D. thesis of Olivier Rousseau,
2009 Reader of M.Sc. thesis of Alexandre Iolo,
2009 External reader of M.Sc. thesis
of Xiaobo Zhu, at Carleton University,
2009 External reader of Ph.D. thesis of Imad Chaddad,
at Riga Technical University, Riga,
2007- Editor of a special issue of *Cubo*,
2007- Associate editor of *J. of Wavelet Theory and Applications*,
2007 External reader of Ph.D. thesis of lona Dzenite,
at Riga Technical University, Riga,
2007 Evaluator for EPSRC Research Proposal, UK,
2006 Evaluator for EPSRC Research Proposal, UK,
2006 Referee for *Comp. Math. Applic., Proc. AMS*,
International J. Computers & Math. with Applic.,
Applicable Analysis, Image and Vision Computing,
Trans. on Internet Research.
2005– Associate editor of *Scientific Proc. of Riga Technical University*.
2005 External reader of M.Sc. (Sci. syst.) thesis
of Baozhu Liang, 2005.03.24.
2004 Evaluator for EPSRC Research Proposal, UK.
2004 Reader of Ph.D. thesis in Information Technology
of Hussein A. Aly, SITE, 2004.02.13.
2002–05 External Assessor of the Mathematics Institute Malaya University
Kuala Lumpur, Malaya.
2002–05 Undergraduate Mathematics program external examinor
University Malayi.
2002 External reader of Ph.D. thesis in telecommunications
of Carlos Vásquez, at INRS, Montréal.
2001 External reader of Ph.D. thesis in mathematics
of Kazem Ghanbari, Carleton University, Ottawa.
2001 External reader of Ph.D. thesis in mathematics
of Zuosheng Hu, Carleton University, Ottawa.
2001 External reader of Ph.D. thesis in mathematics
of Jingde Du, York University, Toronto.

f) Supervision of graduate studies:

Total number :	24 M.Sc.,	6 Ph.D.
Number completed:	21 M.Sc.,	6 Ph.D.
Number in progress :	0 M.Sc.,	5 Ph.D.

Students presently supervised and date of start

- Huong Thu Nguyen, Ph.D. (Math.) Sept. 2009–
- Hemza Yagoub, Ph.D. (Math.) May 2009–
- Parviz Rasoulipour, Ph.D. (Math.) Sept. 2008–
- Han Hao, Ph.D. (Math.) sept. 2006–
- Donald McLaren, Ph.D. (Math.) Sept. 2006–

Student supervised or co-supervised since 1999.

- Artur Przybylo, M.Sc. (Math.) Sept. 2007–June 2009
- Hemza Yagoub, M.Sc. (Math.) Sept. 2007–May 2009
- Melanie McKay, M.Sc. (Math.) Sept. 2006–March 2009
- Vladan Bozic, M.Sc. (Math.) Sept. 2006–May 2008
- Yuchuan Zhuang, M.Sc. (Systems Science) Sept. 2006–2008
- Yi Li, M.Sc. (Systems Science) Jan. 2006–2008
- Yu Zhang, M.Sc. (Syst. Sci) May 2006–2007
- Yuchuan Zhuang, M.Sc. (Comp. Sci..) sept. 2005–abandoned
- Emile Pelletier, M.Sc. (Math.) sept. 2001, co-supervision
- Weibin Qi, M.Sc. (Sci. Syst.) sept. 2002
- Mohamed Ali Hajji, Ph.D. (Math.) (Carleton), 2002–2003
- Tharmalingam Ratnarajah, Ph.D. (Math.) Sept. 2000–2003, co-supervision
- Dr. Eric Xinhou Hua, M.Sc. (Sci. Syst.) Sept. 2000–May 2002.
- M,Sc. (Phys.-Chem.) Steve Desjardins, Ph.D. (Math.), Sept. 1997, co-supervision from Sept. 97 to March 99, supervision Aprill 99 – May 2002.

g) Graduate Courses : 2010: MAT5187 Topics in applied mathematics (Numerical methods for ODEs); 2009: MAT5623 (differential algebraic equations); 2008: MAT5580 (matrix computations), MAT5991 T (delay differential equations); 2007: MAT 5187 (numerical methods for ordinary differential equations); 2006: MAT 5187 (numerical methods for ordinary differential equations); 2006: MAT 5187 (wavelets for hearing-aid); 2003: CSI 5190;

h) External Research Grants :

Main rechearcher : Rémi VAILLANCOURT.

2007–12	NSERC	24 000$	Multidisciplinary numerical research
2003–07	NSERC	24 000$	Multidisciplinary numerical research
1999–03	NSERC	12 075$	Multidisciplinary numerical research

Internal Research Grants :

Main researcher : Rémi VAILLANCOURT.

2008	Development grant	8 000$	Wavelets
2007	FGSP	6 500$	Doct. st.
2007	Development grant	14 000$	Wavelets
2006	Development grant	12 133$	Wavelets
2005	Development grant	12 133$	Wavelets
2004	Development grant	12 000$	Wavelets
2003	Development grant	14 500$	Wavelets
2002	Development grant	19 100$	Wavelets
2001	Development grant	14 257$	Wavelets

j) Summary of Publications :

1) Total number in career :

- Books authored: 8
- Books edited or translated: 3
- Chapters in books: 5
- Papers in refereed journals: 181
- Communications in refereed conference proceedings: 17
- Patents: 1
- Technical reports: 127
- Communications and presentations: 33
- Reviews for *Mathematical Reviews* and *Zentralblatt*: 800

2) Detailed Publications in last seven years.

Books authored :

1. R. Ashino & R. Vaillancourt, *Hayawakari Matlab (Matlab Compendium)*, Kyoritsu Shuppan, Tokyo, 2nd ed. 2010, 227 pages, (Japanese). [There were 11 printings of the first edition.] Translation into Korean, 1998.

Books edited :

1. A. Guran, D. J. Steigmanm, A. L. Smirnov & R.Vaillancourt, éd., *Advances in Mechanics of Solids: In Memory of Prof. Eliza Hasganu*, Series on Stability, Vibration and Control of Systems, Series B, Vol. 15, World Scientific, Singapore, 2006.

Chapters in books :

1. Xinhou Hua & R. Vaillancourt, *Dynamics of permutable maps*. in Early Days in Complex Dynamics, pp. 402–407, A. Rosa, ed. In press.

2. A. A. Kolyshkin, R. Vaillancourt & I. Volodko, *On the stability of transient viscous flow in an annulus*, in Advances in Mechanics of Solids: In Memory of Prof. E. M. Hasganu, Series on Stability, Vibration and Control of Systems, Series B, Vol. 15, World Scientific, Singapore, 2006, pp. 139–150.

Papers in refereed journals :

1. M. Bahri, R. Ashino & R. Vaillancourt, *Two-dimensional quaternion wavelet transform*, Appl. Math. Comput., **218** (2011) 1–21. doi: 10.1016/j.amc.2011.05.030.

2. T. Nguyen-Ba, H. Nguyen-Thu & R. Vaillancourt, *Strong-stability-preserving 4-stage Hermite–Birkhoff time-discretization methods*, Can. Appl. Math. Q. In press.

3. H. Yagoub, T. Nguyen-Ba & R. Vaillancourt, *Variable-step variable-order 3-stage Hermite–Birkhoff–Obrechkoff DDE solver of order 4 to 14*, Appl. Math. Comput., **217** (2011) 10247–10255. doi:10.1016/j.amc.2011.05.023

4. X. Wang, X. Hua & R. Vaillancourt, *Permutable functions concerning differential equations II*, Complex Variables and Elliptic Equations, **56**(1–4) (2011) 155 170. DOI: 10.1080/17476930903394853.

5. T. Nguyen-Ba, H. Nguyen-Thu, T. Giordano & R. Vaillancourt, *Strong-stability-preserving 7-stage Hermite–Birkhoff time-discretization methods* J. Sci. Comput., In press. DOI 10.1007/s10915-011-9473-7.

6. T. Nguyen-Ba, H. Hao, H. Yagoub & R. Vaillancourt, *One-step 9-stage Hermite–Birkhoff–Taylor DAE solver of order 10*, J. Appl. Math. and Comput., **35** (2011) 363–378. DOI: 10.1007/s12190-009-0362-2, pub. élec. 2009.12.01.

7. E. Kengne & R. Vaillancourt, *Stability of exact solutions of the cubic-quintic nonlinear Schrödinger equation with periodic potential*, Nonlinear Oscillations, **13**(4) (2011) 569–583. (Ukrainian original **13**(4), (October-December 2010) 533–545).

8. T. Nguyen-Ba, H. Nguyen-Thu, T. Giordano & R. Vaillancourt, *Strong stability preserving 3-stage Hermite–Birkhoff time-discretization methods* Appl. Num. Math., (2010). doi: 10.1016/j.apnum.2010.11.013.

9. R. Ashino & R. Vaillancourt, *Mean breakdown points for compressed sensing by uniformly distributed matrices*, JSIAM Letters, **2** (2010) 111–114.

10. T. Nguyen-Ba, H. Yagoub, H,. Hao & R. Vaillancourt, *Solution of electric circuits by a 9-stage Hermite–Birkhoff–Taylor DAE solver of order 11*, Scientific Proceedings of Riga Technical University, **45**(52), (2010) 87–94.

11. M. Bahri, E.S.M. Hitzer, R. Ashino & R. Vaillancourt, *Windowed Fourier transform of two-dimensional quaternionic signals*, Appl. Math. Comput., **216** (2010), 2366-2379. doi: 10.1016/j.amc.2010.03.082.

12. V. Bozic, T. Nguyen-Ba & R. Vaillancourt, *A three-stage, VSVO, Hermite–Birkhoff–Taylor, ODE solver*, Appl. Math. Comput., **216** (2010) 598–610. doi:10.1016/j.amc.2010.01.082.

13. E. Kengne, A. Kakhssassi, T. Nguyen-Ba & R. Vaillancourt, *Dispersive shock waves propagating in the cubic-quintic derivative NLS equation*, Can. J. Phys./Rev. Can. Phys., **88**(1) (2010), 55–66.

14. E. Kengne, R. Vaillancourt & B. A. Malomed, *Modulational instability and exact soliton and periodic solutions for two weakly coupled effectively 1D condensates trapped in a double-well potential*, Int. J. of Modern Physics B, **24**(14) (2010) 2211–2227. DOI: 10.1142/S021797921005541X

15. T. Nguyen-Ba, V. Bozic, E. Kengne & R. Vaillancourt, *A one-step 7-stage Hermite–Birkhoff–Taylor ODE solver of order 11*, J. Comput. Appl. Math., **234** (2010) 192–208. doi:10.1016/j.cam.2009.12.015.

16. R. Ashino, T. Nguyen-Ba & R. Vaillancourt, *Linear codes and compressed sensing with equivalent average breakdown points*, Scientific Proceedings of Riga Technical University, **41**(51), (2009), 91–96.

17. T. Nguyen-Ba, H. Nguyen-Thu & R. Vaillancourt, *Strong stability preserving 5-stage Hermite–Birkhoff time-discretization methods*, Scientific Proceedings of Riga Technical University, **41**(51) (2009) 67–90.

18. T. Nguyen-Ba, H. Nguyen-Thu & R. Vaillancourt, *Solution of electric circuits by a 9-stage Hermite–Birkhoff–Taylor DAE solver of order 10*, Scientific Proceedings of Riga Technical University, **41**(51) (2009) 97–108.

19. T. Nguyen-Ba, H. Hao, H. Yagoub & R. Vaillancourt, *One-step 9-stage Hermite–Birkhoff–Taylor DAE solver of order 10*, J. Appl. Math. and Comput., **35** (2011) 363-378. DOI: 10.1007/s12190-009-0362-2, pub. élec. 2009.12.01.

20. R. Ashino, T. Nguyen-Ba & R. Vaillancourt, *Low-dimensional linear codes with high breakdown points by QR decomposition*, Int. J. Pure Appl. Math., **57**(2) (2009) 151–163.

21. A. Madrane & R. Vaillancourt, *Three-dimensional adaptive central schemes on unstructured staggered grids*, SIAM J. Sci. Computing, **31**(5) (2009) 3979–3999.

22. T. Nguyen-Ba, V. Bozic, E. Kengne & R. Vaillancourt, *Nine-stage multi-derivative Runge–Kutta method of order 12*, Publications de l'Institut Mathématique, Nouvelle série, **86**(100) (2009) 75–96.

23. E. Kengne, C. Tadmon, T. Nguyen-Ba & R. Vaillancourt, *Higher order bright solitons and shock signals in nonlinear transmission lines*, Chinese J. Phys, **47**(5) (October 2009) 713–718.

24. H. Yagoub, T. Nguyen-Ba, T. Giordano & R. Vaillancourt, *Convergence of the variable-step variable-order 3-stage Hermite–Birkhoff ODE/DDE solver of order 5 to 15*, Scientific Proceedings of Riga Technical University, **41**(51) (2009) 49–66.

25. E. Kengne & R. Vaillancourt, *2D Ginzburg–Landau system of complex modulation for coupled nonlinear transmission lines*, J. Infrared, Millimeter, Terahertz Waves, **30**(7) (2009) 679–699 doi:10.1007/s10762-009-9485-7.

26. E. Kengne & R. Vaillancourt, *Exact equilibrium solutions of a diffusion equation with a nonlinear diffusion term by means of Jacobian elliptic functions*, Integral Transforms and Special Functions, **20**(9) (sept. 2009) 701–721.

27. E. Kengne, C. Tadmon & R. Vaillancourt, *On the dissipative complex Ginzburg–Landau equation governing the propagation of solitary pulse in dissipative nonlinear transmission lines*, Chinese J. of Physics, **47**(1) (fév. 2009) 81–92.

28. T. Nguyen-Ba, H. Hao, H. Yagoub & R. Vaillancourt, *One-step 5-stage Hermite–Birkhoff–Taylor ODE solver of order 12*, Appl. Math. Comput., **211** (2009) 313–328, doi:10.1016/j.amc.2009.01.043.

29. T. Nguyen-Ba, V. Bozic, E. Kengne & R. Vaillancourt, *One-step 9-stage Hermite–Birkhoff–Taylor ODE Solver of order 10*, J. Appl. Math. and Comput., **31**(1) (2009) 335–358. DOI 10.1007/s12190-008-0216-3.

30. E. Kengne & R. Vaillancourt, *Propagation of solitary waves on lossy nonlinear transmission lines*, International J. of Modern Physics B, **23**(23) (2009) 1–18.

31. E. Kengne & R. Vaillancourt, *Transmission of solitary pulse in dissipative nonlinear transmission lines*, Communications in Nonlinear Science and Numerical Simulations, **14**(11) (2009) 3804–3810. doi:10.1016/j.cnsns.2008.08.016.

32. E. Kengne, R. Vaillancourt & B. A. Malomed, *Coupled nonlinear Schrödinger equations for solitary-wave and kink signals propagating in discrete nonlinear*

dispersive transmission lines, Int. J. of Modern Physics B, **23**(2) (2009) 133-147.

33. T. Nguyen-Ba, H. Hao, H. Yagoub & R. Vaillancourt, *One-step 4-stage Hermite–Birkhoff–Taylor DAE solver of order 12*, Can. Appl. Math. Q., **16**(4) (2008) 415–438.

34. R. Ashino, T. Nguyen-Ba & R. Vaillancourt, *Decoding low-dimensional linear codes by linear programming*, Can. Appl. Math. Q., **16**(3) (2008) 241–254.

35. H. Yagoub, T. Nguyen-Ba & R. Vaillancourt, *Variable-step 7-stage Hermite–Birkhoff–Taylor DDE Solver of order 8*, Scientific Proceedings of Riga Technical University, **37**(50), (2008), 130–144.

36. T. Nguyen-Ba, E. Kengne & R. Vaillancourt, *One-step 4-stage Hermite–Birkhoff–Taylor ODE Solver of order 12*, Can. Appl. Math. Q., **16**(1) (Spring 2008) 77-94.

37. T. Nguyen-Ba, H. Yagoub, Y. Zhuang & R. Vaillancourt, *Variable-step variable-order 2-stage Hermite–Birkhoff–Obrechkoff ODE solver of order 3 to 14*, Scientific Proceedings of Riga Technical University, **37**(50) (2008) 79–102.

38. E. Kengne & R. Vaillancourt, *Integrability conditions for two-component Bose-Einstein condensates in periodic potentials*, Scientific Proceedings of Riga Technical University, **37**(50) (2008) 103–111.

39. T. Nguyen-Ba, H. Hao, H. Yagoub, & R. Vaillancourt, *One-step 9-stage Hermite–Birkhoff–Taylor DAE solver of order 11*, Scientific Proceedings of Riga Technical University, **37**(50) (2008) 55–78.

40. E. Kengne & R. Vaillancourt, *Bose-Einstein condensates in optical lattices: The cubic-quintic nonlinear Schrödinger equation with a periodic potential*, J. of Physics B: Atomic, Molecular & Optical Physics, **41** (2008) 205202 (9pp).

41. E. Kengne, V. Bozic, M. Viana & R. Vaillancourt, *Transverse stability of solitary waves propagating in coupled nonlinear dispersive transmission lines*, Physical Review E, **78**, 026603 (2008) 1–8.

42. V. Bozic, A. Przybylo, T. Nguyen-Ba & R. Vaillancourt, *One-step 9-stage Hermite–Birkhoff–Taylor ODE Solver of order 11*, University Scientific J., Telecommunications and Electronics Series, University of Technology and Life Sciences (UTP), Bydgoszcz, Poland, **11**, (2008) 33–52.

43. T. Nguyen-Ba, V. Bozic & R. Vaillancourt, *One-step 7-stage Hermite–Birkhoff–Taylor ODE solver of order 13*, Int. J. Pure Appl. Math., **43**(4) (2008) 569–592.

44. T. Nguyen-Ba, P. W. Sharp & R. Vaillancourt, *Hermite-Birkhoff-Obrechkoff 4-stage 4-step ODE solver of order 14 with quantized stepsize*, J. of Computational and App. Math.,**222**(2) (2008) 608–621.

45. X.-H. Hua & R. Vaillancourt, *Prime factorization of entire functions*, Cubo, **10**(1) (2008) 1–10.

46. T. Nguyen-Ba, P.. W. Sharp, H. Yagoub & R. Vaillancourt, *Hermite-Birkhoff-Obrechkoff 3-stage 4-step ODE solver of order 14 with quantized stepsize*, Can. Appl. Math. Q., **15**(2) (2007) 181–201.

47. R. Vaillancourt & V. G. Zakharov, *Interval wavelets adapted to monomial differential operators*, J. of Wavelet Theory and Applications, **1**(1) (2007) 31–63.

48. T. Nguyen-Ba, P. W. Sharp, H. Yagoub, & R. Vaillancourt, *Hermite–Birkhoff–Obrechkoff 5-stage 4-step ODE solver of order 15 with quantized stepsize*, Scientific Proceedings of Riga Technical University, **33**, Boundary Field Problems and Computer Simulation, 49th issue, (2007) 6–25.

49. E. Kengne & R. Vaillancourt, *Traveling wave propagation on coupled nonlinear transmission lines*, Scientific Proceedings of Riga Technical University, **33**, Boundary Field Problems and Computer Simulation, 49th issue, (2007) 42–58.

50. T. Nguyen-Ba, V. Bozic, E. Kengne & R. Vaillancourt, *One-step 4-stage Hermite–Birkhoff–Taylor ODE Solver of order 14*, Scientific Proceedings of Riga Technical University, **33**, Boundary Field Problems and Computer Simulation, 49th issue, (2007) 26–41.

51. E. Kengne & R. Vaillancourt, *On exact solutions of the Gross–Pitaevskii equation in periodic potential in the presence of external source*, J. Mathematical Physics, **48** (2007) 073520-1–13.

52. X.-H. Hua, R. Vaillancourt & X. L. Wang, *Permutable functions concerning differential equations*, J. Aust. Math. Soc., **83** (2007) 369–384.

53. T. Nguyen-Ba, H. Yagoub, Y. Zhang & R. Vaillancourt, *Variable-step variable-order 3-stage Hermite–Birkhoff–Obrechkoff ODE solver of order 4 to 14*, Can. Appl. Math. Q., **14**(4) (Winter 2006) 413–437.

54. R. Vaillancourt, R. & V. G. Zakharov, *Biorthogonal wavelet bases for solving time-dependent PDEs*, Scientific Proceedings of Riga Technical University, Boundary Field Problems and Computer Simulation, **29**(48) (2006) 25–52.

55. T. Nguyen-Ba, H. Yagoub, S. J. Desjardins & R. Vaillancourt, *Variable-step variable-order 4-stage Hermite–Birkhoff–Obrechkoff ODE solver of order 5 to 14*, Scientific Proceedings of Riga Technical University, Boundary Field Problems and Computer Simulation, **29**(48) (2006) 53–80.

56. M. A. Hajji & R. Vaillancourt, *Matrix derivation of Gaussian quadratures*, Scientific Proceedings of Riga Technical University, Boundary Field Problems and Computer Simulation, **29**(48), (2006) 198–213.

57. E. Kengne & R. Vaillancourt, *Stabilized soliton in attractive Bose-Einstein condensate in hyperbolic potential*, Scientific Proceedings of Riga Technical University, Boundary Field Problems and Computer Simulation, **29**(48) (2006) 81–94.

58. E. Kengne & R. Vaillancourt, *Ginzburg–Landau system of complex modulation equations for a distributed nonlinear-dissipative transmission lines*, Nonlinear Oscillations, **9**(4) (2006) 451–489.

59. T. Nguyen-Ba, H. Yagoub, Y. Li & R. Vaillancourt, *Variable-step variable-order 3-stage Hermite–Birkhoff ODE Solver of order 5 to 15*, Can. Appl. Math. Q., **14**(1) (Spring 2006) 43–69.

60. T. Nguyen-Ba & R. Vaillancourt, *Hermite–Birkhoff–Obrechkoff 3-stage 6-step ODE solver of order 14*, Can. Appl. Math. Q., **13**(2) (Summer 2005) 151–181.

61. A. Morimoto, R. Ashino & R. Vaillancourt, *Multiwavelet neural network preprocessing of irregularly sampled data*, Scientiae Mathematicae Japonicae, (e-2006) 301–317.

62. A. Morimoto, Y. Shimano, R. Ashino & R. Vaillancourt, *Wavelets and block singular value denoising*, Scientific Proceedings of Riga Technical University, **29**, Boundary Field Problems and Computer Simulation, 48th issue, (2006) 6-14.

63. P. W. Sharp & R. Vaillancourt, *New Nyström pairs for the general second-order problem*, Scientific Proceedings of Riga Technical University, **29**, Boundary Field Problems and Computer Simulation, 48th issue, (2006) 15-24.

64. P. W. Sharp & R. Vaillancourt, *Explicit Pouzet Runge–Kutta pairs for Voltera integro-differential equation*, Scientific Proceedings of Riga Technical University, **29**, Boundary Field Problems and Computer Simulation, 48th issue, (2006) 95–104.

65. T. Ratnarajah & R. Vaillancourt, *Complex singular Wishart matrices and applications*, Computers Math. Applic., **50** (2005) 399–411.

66. A.A. Kolyshkin, R. Vaillancourt & I. Volodko, *Approximate method for the calculation of the change in impedance due to a flaw in a conducting cylindrical layer*, Scientific Proceedings of Riga Technical University, **26**, Boundary Field Problems and Computer Simulation, 47th issue, (2005) 62-66.

67. A. Madrane, A. El Boukili & R. Vaillancourt, *A new overlapping unstructured grid algorithm*, Scientific Proceedings of Riga Technical University, **26**, Boundary Field Problems and Computer Simulation, 47th issue, (2005) 7–17.

68. E. F. Pelletier & R. Vaillancourt, *Modelling instgrument's sounds using Malvar wavelets*, Scientific Proceedings of Riga Technical University, **26**, Boundary Field Problems and Computer Simulation, 47th issue, (2005) 18–24.

69. X.-H. Hua & R. Vaillancourt, *Dynamics of permutable meromorphic functions*, Scientific Proceedings of Riga Technical University, **26**, Boundary Field Problems and Computer Simulation, 47th issue, (2005) 25–31.

70. P. W. Sharp & R. Vaillancourt, *Error growth of some symplectic explicit Runge–Kutta Nyström methods for a simulation of the gas giants*, Scientific Proceedings of Riga Technical University, **26**, Boundary Field Problems and Computer Simulation, 47th issue, (2005) 32–38.

71. P. W. Sharp & R. Vaillancourt, *Efficient order-five second-derivative explicit Runge–Kutta pairs with interpolants*, Scientific Proceedings of Riga Technical University, **26**, Boundary Field Problems and Computer Simulation, 47th issue, (2005) 39–47.

72. A.A. Kolyshkin, R. Vaillancourt & I. Volodko, *Weakly Nonlinear Analysis of Rapidly Decelerated Channel Flow*, IASME Transactions, Issue 7, Volume 2, (September 2005) 1157–1165.

73. T. Ratnarajah & R. Vaillancourt, *Quadratic forms on complex random matrices and multiple-antenna systems*, IEEE Transactions on Information Theory, **51**(8), (Aug. 2005) 2976–2984.

74. T. Ratnarajah, R. Vaillancourt & M. Alvo, *Complex random matrices and Rician channel capacity*, Problems of Information Transmission. **41**(1) (Jan.-March 2005) 1–21.

75. R. Ashino, A. Morimoto, M. Nagase & R. Vaillancourt, *Image compression with multiresolution singular value decomposition and other methods*, Mathematical and Computer Modeling, **41** (2005) 773–790.

76. T. Ratnarajah, R. Vaillancourt & M. Alvo, *Eigenvalues and condition numbers of complex random matrices*, SIAM J. Matrix Anal. Appl. **26**(2) (2005) 441–456.

77. M. S. Ghidaoui. A. A. Kolyshkin & R. Vaillancourt, *Transient turbulent flow in a pipe*, Scientific Proceedings of Riga Technical University, **21** (Boundary Field Problems and Computer Simulation, 46th issue, (2004) 19–24.

78. M. Yoshikawa, R. Ashino & R. Vaillancourt, *Case study on SVD multiresolution analysis*, Scientific Proceedings of Riga Technical University, **21**, Boundary Field Problems and Computer Simulation, 46th issue, (2004) 65–79.

79. W. Qi, A. Morimoto, R. Ashino & R. Vaillancourt, *Image denoising using spline and block singular value decomposition*, Scientific Proceedings of Riga Technical University, **21**, Boundary Field Problems and Computer Simulation, 46th issue, (2004) 36–46.

80. T. Nguyen-Ba & R. Vaillancourt, *Hermite–Birkhoff Differential Equation Solvers*, Scientific Proceedings of Riga Technical University, **21**, Boundary Field Problems and Computer Simulation, 46th issue, (2004) 47–64.

81. A. Morimoto, R. Ashino & R. Vaillancourt, *Curve fitting to irregularly sampled data by multiwavelets and neural networks*, Scientific Proceedings of Riga Technical University, **21**, Boundary Field Problems and Computer Simulation, 46th issue, (2004) 25–35.

82. T. Ratnarajah, R. Vaillancourt & M. Alvo, *Jacobians and hypergeometric functions in complex multivariate analysis*, Can. Appl. Math. Q., **12**(2) (Summer 2004) 213–239.

83. A. El Boukili, A. Madrane & R. Vaillancourt, *Multifrontal solution of sparse unsymmetric matrices arising from semiconductor equations*, Can. Appl. Math. Q., **12**(2) (Summer 2004) 137–152.

84. R. Ashino, M. Nagase & R. Vaillancourt *Pseudodifferential operators in $L^p(\mathbb{R}^n)$ spaces*. Cubo, **6**(3) (2004) 91–129.

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Undergraduate courses and seminar since retirement :

Fall 1999	MAT 2331
Winter 2000	MAT 5326/4996
Spring 2000	MAT 2331, CSI 3550, CSI 3150
August 2000	60 hour seminar on signal processing and wavelets for Profs. Naoto Kumano-go from Tokyo and Xinhou Hua from Nanjing
Fall 2000	MAT 2731
Winter 2001	MAT 2331, CSI 3550
Winter 2001	Seminar on peudodifferential operators, wavelets and signal and image processing
Spring 2001	CSI 3550
Winter 2002	CSI 3550, MAT 2331
Spring 2002	CSI 3150, MAT 3341
Winter 2003	MAT 2731, CSI 3550
Spring 2003	MAT 3341
Winter 2004	MAT 2731
Fall 2004	MAT 2331
Winter 2005	MAT 2731
Automne 2005	MAT 3720
Winter 2006	MAT 3380
Fall 2006	MAT 2784
Winter 2007	MAT 2784
Fall 2007	MAT 2784
Winter 2008	MAT 2784
Spring 2010	MAT 4781

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