

CURRICULUM VITAE

Personal data

Name: Alain PIETRUS

Date of Birth: April 7, 1966

Citizenship: French

Employer: Université des Antilles et de la Guyane (UAG)
Faculté des Sciences Exactes et Naturelles de Pointe-à-Pitre
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DEGREE :

1989: DEA, Toulouse III University

1992: Phd of Mathematics, Poitiers University

2000: Habilitation Thesis of Mathematics, Poitiers University

POSITIONS :

Since September 2013: Exceptional class Professor, UAG, Pointe-à-Pitre

Since September 2009: Full (First class) Professor, UAG, Pointe-à-Pitre

September 2001-August 2009: Professor, UAG, Pointe-à-Pitre

January 2000-August 2001: Associate Professor, IUFM Poitiers

September 1993-December 2000: Assistant Professor, IUFM Poitiers

September 1992-August 1993: Research Assistant of Mathematics, Poitiers University

GRANTS :

Research and Doctoral Grants: PEDR (Prime d'Encadrement Doctoral et de Recherche):
1999-2003 and 2005-2009. PES (Prime d'excellence scientifique): 2009-2013.

SUPERVISED STUDENTS :

Catherine Zebre (2008); Celia Jean-Alexis (2007); J. Barrios (May 2011); S. Burnet (October 2012).

ADMINISTRATIVES POSITIONS :

January 2006-december 2009: Leader of the team AOC (<http://www.univ-ag.fr/aoc>)

January 2009-december 2012: Head of the political office of the President of the University and Vice-President of the UAG University

May 2013-May2015: In charge in relation with enterprises and research organisms.

LIST OF PUBLICATIONS:

Referred Publications:

- [1] J-P. DEDIEU et A. PIETRUS, Résolution des systèmes triangulaires d'équations algébriques par la méthode Sym-New, *C. R. Acad. Sci. Paris*, 316, série I, 1993, 499-502.
- [2] A. PIETRUS, A globally convergent method for solving nonlinear equations without the differentiability condition, *Numerical Algorithms* 13 (1996), 61-76.
- [3] A. PIETRUS, Polynômes hyperboliques et combinaisons linéaires de certains polynômes hyperboliques, *C.R. Acad. Sci. Paris*, 324, série I, 1997, 25-27.
- [4] A. PIETRUS, Quelques conséquences d'un théorème de Biehler, *An. Stiint. Univ. Al. I. Cuza Iasi*, t. XLIV, f.1, 1998, 31-40.
- [5] A. MIRANVILLE, A. PIETRUS et J. M. RAKOTOSON, Dynamical aspects of a Generalized Cahn-Hilliard equation obtained by microforce balance, *Asymptotic Analysis*, 16, 1998, 315-345.
- [6] M. CARRIVE, A. MIRANVILLE, A. PIETRUS et J. M. RAKOTOSON, The Cahn-Hilliard equation for an isotropic continuum, *Applied Math. Letters*, 12(2), 1999, 23-28.
- [7] A. PIETRUS, Hyperbolic Polynomials and single-peaked solutions of semilinear problems, *An. Stiint. Univ. Al. I. Cuza Iasi*, t.XLV, 1999, 65-74.
- [8] A. PIETRUS, Solving triangular algebraic systems by means of simultaneous iterations, *Numerical Algorithms* 20(4), 1999, 353-368.
- [9] A. PIETRUS, Generalized equations under mild differentiability conditions, *Revista de la Real Academia de ciencias de Madrid* 94(1), 2000, 15-18.
- [10] M. CARRIVE, A. MIRANVILLE et A. PIETRUS, The Cahn-Hilliard equation for deformable elastic continua. *Adv. Math. Sci. Appl.*, 10(2), 2000, 539-569.
- [11] A. PIETRUS, Does Newton's method converges uniformly in mild differentiability context?, *Revista Colombiana de Matematicas*, 34(2), 2000, 49-56.

- [12] A. MIRANVILLE, A. PIETRUS et J.M. RAKOTOSON, Equivalence of formulations and uniqueness in a T-set, *Nonlinear-Analysis. T.M.A.*, 46(5), 2001, 609-627.
- [13] V. LODS, A. PIETRUS et J. M. RAKOTOSON, Résolution mathématique d'équations décrivant l'évolution d'une surface d'un matériau contraint, *C. R. Acad. Sc. Paris*, 332, Série I, 2001, 377-380.
- [14] A. PIETRUS, Remarques sur quelques problèmes semi-linéaires et elliptiques ayant des non-linéarités polynomiales. *Ricerche di Matematica*, L(1), 2001, 177-189.
- [15] M. CARRIVE, A. MIRANVILLE, A. PIETRUS et J.M. RAKOTOSON, Weakly coupled dynamical system and applications. *Asymptotic Analysis* 30(2), 2002, 161-185.
- [16] V. LODS, A. PIETRUS et J. M. RAKOTOSON, Mathematical study of the equation describing the evolution of the surface of a film. *Asymptotic Analysis* 33(1), 2003, 67-91.
- [17] M. GEOFFROY, S. HILOUT et A. PIETRUS, Acceleration of convergence in Dontchev's iterative method for solving variational inclusions. *Serdica Math. J.* 29(1), 2003, 45-54.
- [18] M. GEOFFROY et A. PIETRUS, A superquadratic method for solving generalized equations in the Hölder case. *Ricerche di Matematica*, Vol. LII, fasc. 2, 2003, 231-240.
- [19] M. GEOFFROY et A. PIETRUS, Local convergence of some iterative methods for generalized equations. *J. of Math. Anal. and Appl.* 290(2), 2004, 497-505.
- [20] M. GEOFFROY et A. PIETRUS, An iterative method for perturbed generalized equations. *C.R. Acad. Bulg. Sci.* 57(11), 2004, 7-12.
- [21] M. GEOFFROY et A. PIETRUS, A general iterative procedure for solving nonsmooth generalized equation. *Comput. Optim. Appl.*, 2005, 57-67.
- [22] C. JEAN-ALEXIS, A. PIETRUS, On some variant of Newton's method for Generalized equations. *Revista Colombiana de Matematicas*, 39(2), 2005, 97-112.
- [23] A. MIRANVILLE, A. PIETRUS, A new formulation of the Cahn-Hilliard equation *Nonlinear Analysis :Real World Applications*, 2006, 7(2), 2006, 285-307.
- [24] M. GEOFFROY, S. HILOUT et A. PIETRUS, stability of the cubic method for generalized equations *Set-Valued Analysis*, 14, 2006, 41-54.
- [25] S. HILOUT, A. PIETRUS, A semilocal convergence of a secant-type method for solving generalized equations. *Positivity*, 10(4), 2006, 693-700.
- [26] M. GEOFFROY, A. PIETRUS, Regularity properties of a cubically convergent scheme for generalized equations. *Communications in Pure and Applied Analysis*, 6(4), 2007, 983-996.
- [27] C. CABUZEL and A. PIETRUS, Solving variational inclusions by a multipoint iteration method under center-Holder continuity conditions. *Applicaciones Mathematicae*, 34(4), 2007, 493-503.

- [28] C. CABUZEL and A. PIETRUS, Local convergence of Newton's method for subanalytic variational inclusions. *Positivity*, 12, 2008, 523-533.
- [29] C. JEAN-ALEXIS and A. PIETRUS, A superquadratic method for solving variational inclusions under weak conditions. *Applied Mathematics E-Notes*, 8, 2008, 186-193.
- [30] M. GEOFFROY, C. JEAN-Alexis and A. PIETRUS, Iterative solving of variational inclusions under Wijsman perturbations. *Journal of Global Optimization*, 42(1), 2008, 111-120.
- [31] M. GEOFFROY, C. JEAN-ALEXIS and PIETRUS, A Hummel-Seebeck method for variational inclusions. *Optimization*, 58(4), 2009, 389-399.
- [32] C. CABUZEL and A. PIETRUS An iterative method for subanalytic perturbed generalized equations. *C.R. Acad. Bulg. Sc.*, 61(8), 2008, 973-978.
- [33] C. JEAN-ALEXIS and A. PIETRUS, On the convergence of some methods for variational inclusions. *Rev. Acad. Cien. Serie A. Mat.*, Vol. 102(2), 2008, 355-361.
- [34] C. CABUZEL and A. PIETRUS, Solving variational inclusions by a method obtained using a multipoint iteration formula. *Rev. Mat. Compl.*, 22(1), 2009, 63-74.
- [35] A. PIETRUS and V. VELIOV, On the discretization of Switched Systems : Error Analysis. *Systems and Control Letters*, 58(2009), 395-399.
- [36] M. GEOFFROY and A. PIETRUS, A fast iterative scheme for variational inclusions. *Discrete Cont. Dyn. Syst.*, 2009 **Dynamical Systems, Differential Equations and Applications**, 7th AIMS Conference Supplement, 250-258.
- [37] C. JEAN-ALEXIS and A. PIETRUS, On the convergence of the Hummel-Seebeck's method for variational inclusions under mild differentiability conditions. *Revista Colombiana de Matematicas*, Vol. 43(1)(2009), 1-8
- [38] Steeve BURNET and Alain PIETRUS, Local Analysis of a cubically convergent method for variational inclusions. *Applicationes Mathematicae*, 38(2) (2011), 183-191.
- [39] S. BURNET, C. JEAN-ALEXIS and A. PIETRUS, An iterative method for semistable solutions. *RACSAM*, Vol. 105(1)(2011), 133-138.
- [40] S. BURNET, C. JEAN-ALEXIS and A. PIETRUS, A multipoint iterative method for semistable solutions. *Appl. Math. E-notes*, 12(2012), 44-52.
- [41] Jorge BARRIOS, Alain PIETRUS, Aymee MARRERO, Hector de ARAZOZA, and Gonzalo JOYA, A differential inclusion approach for modeling and analysis of Dynamical systems under uncertainty. Application to Dengue disease transmission. *Soft Computing*, 17(2013), 239-253.
- [42] C. JEAN-ALEXIS and A. PIETRUS, A Newton-Secant type method for nondifferentiable functions with values on a cone. *Serdica Math. J.*, 39(2013), 271-286.
- [43] A. PIETRUS, A perturbed Newton's type method for nondifferentiable functions with values on a cone. *Revista Investigacion Operacional*, Vol. 35, 1(2014), 58-67.

- [44] S. BERNARD and A. PIETRUS, Optimal glucose modelling for diabetes. *e-journal of the Caribbean Academy of Sciences*, Vol.8, 1(2015).
- [45] S. BERNARD, G. BOUZA and A. PIETRUS, An Optimal Control Approach for e-rumor. *Revista Investigacion Operacional*, Vol. 36, (2)(2015), 108-114.
- [46] S. BURNET, C. CABUZEL and A. PIETRUS, Local convergence of Exact and Inexact Newton's type method for subanalytic variational inclusions. *Revista de Matematica : Teoria y Aplicaciones*, Vol.22, (1)(2015), 31-47.
- [47] A. PIETRUS, An Extension of Newton-Kantorovich theorem for subanalytic variational inclusions. *To appear*.

Referred Proceedings :

- [48] H. ARAZOZA, J. BARRIOS, A. MARRERO and A. PIETRUS, HIV model described by differential inclusions. In Cabestany, J., Sandoval, F., Prieto, A., Corchado, J.M. Eds, *Bio-Inspired Systems: Computational and Ambient-Intelligence*, Vol. 5517(I), Lecture Notes in Computer Sc., Salamanca, Spain, 10th IWANN 2009, Springer-Verlag Berlin Heidelberg (2009), 909-916.
- [49] Jorge BARRIOS, Alain PIETRUS, Aymee MARRERO, Hector de ARAZOZA, and Gonzalo JOYA, Dengue model described by differential inclusions. *Advances in Computational Intelligence*. In J. Cabestany, I. Rojas and G. Joya, editors, IWANN 2011, Part II, LNCS 6692, springer-Verlag Berlin (2011), 540547. Springer, Heidelberg, 2011.
- [50] J.-L. HAUNSCHMIED, A. PIETRUS and V. VELIOV, The Euler method for Linear Control Systems revisited. *Proceedings of the 9th International Conference on Large-Scale Scientific Computation*. Sozopol, 2013, Springer, LCNS 8353, 2014, 88-95

Book Chapters:

- [51] C. JEAN-ALEXIS, S. HILOUT and A. PIETRUS, On the secant and Steffensen's method for variational inclusions. *Progress in Nonlinear Analysis Research*, 269-283, Nova Sc.Publ., New-York, 2009.
- [52] C. CABUZEL and A. PIETRUS, Some results on subanalytic variational inclusions. *Eds. I. Zelinka, V. Snasel and A. Abraham. Handbook of Optimization, from classical to modern approach*, Springer, 2013, 51-72.

Proceedings Edited :

- [53] A. DECARREAU, R. JANIN, M. R. PHILLIPE, A. PIETRUS, **editeurs** des Actes des sixièmes journées du groupe MODE, 19-21 mars 1998, *Futuroscope, Poitiers, Editions de l'Actualité Scientifique Poitou-Charente*.
- [54] M. CARRIVE, V. LODS, A. MIRANVILLE, A. PIETRUS et J. M. RAKOTOSON, **editeurs** des Actes des journées jeunes numériciens en l'honneur du 60 ème anniversaire

du Professeur Roger TEMAM, 9-10 mars 2000, *Futuroscope, Poitiers, Editions de l'Actualité Scientifique Poitou-Charente.*

- [55] M. GEOFFROY and A. PIETRUS, **editeurs** des Actes de la Conférence Internationale **Control Set-Valued Analysis and Applications**, 5-8 avril 2004, *Campus de Fouillole, Pointe-à-Pitre*, ESAIM: Proc, Vol. 17, 2007.
<http://www.edpsciences.org/articles/proc/abs/2007/02/contents/contents.html>.

Papers in préparation :

- [56] S. BERNARD, C. CABUZEL, P. NUIRO and A. PIETRUS, Extended Semismooth Bw-ton method for functions with values in a Cone.
- [57] C. CABUZEL, A. PIETRUS, Local convergence of a midpoint method for generalized equations.
- [58] C. JEAN-ALEXIS, M. GEOFFROY and A. PIETRUS, The second order generalized derivative and generalized equations.
- [59] S. Burnet, C. JEAN-ALEXIS and A. PIETRUS, Exact and Inexact Hummel-Seebeck type method for variational inclusions.

Others :

- [60] A. PIETRUS, Contributions à la résolution d'équations et de systèmes, à l'étude des polynômes hyperboliques et de quelques problèmes issus de la mécanique et de la physique, *Habilitation-Thesis*, december 2000, Poitiers University.
- [61] A. PIETRUS, Etude numérique des systèmes triangulaires d'équations algébriques : application à la robotique, *Phd-Thesis*, december 1992, Poitiers University.

REVIEWER AND REFEREE :

Reviewer for the Mathematical reviews (More than 76 reviews)

Referee for the journals : SIAM Journal of Optimization, Computational and Applied Mathematics, Far East Journal of Mathematical Sciences, Numerical Algorithms, Journal of Applied Analysis, System and Control Letters, JMAA, American Journal of Operations Research, Proceedings of the Indian Mathematical Sciences, Soft-Computing, Optimization, Investigación Operacional, M2AN, 2013 American conference of Control (Conference).

Phd and HABILITATIONS THESIS EXAMINATION COMMITTEE :

- 1) M. JALAL. Defense: March 11, 1999 at Poitiers. (Member of the Thesis committee).
- 2) H. BONFOH. Defense: September 28, 2001 at Poitiers. (Member of the Thesis committee).
- 3) S. DEVOUE. Defense: April 2005 at Poite-a-Pitre. (Member of the Thesis committee).

- 4) M. BOUTAT. Defense: September 2005 at Poitiers.(Reviewer, Member of the Thesis committee).
- 5) S. HILOUT. Defense: September 3, 2007, at Poitiers. (Member of the Habilitation Thesis committee)
- 6) G. SAUSSAY. Defense: November 20, 2007 at Pointe-a-Pitre.(Member of the Thesis committee)
- 7) M. GEOFFROY. Defense: November 19, 2007 at Pointe-à-Pitre.(Member of the Habilitation Thesis committee)
- 8) C. JEAN-ALEXIS. Defense: November 20, 2007 at Pointe-a-Pitre.(Advisor, Member of the Thesis committee)
- 9) C. ZEBRE (CABUZEL), Decembre 8, 2008 at Pointe-a-Pitre. (Advisor, Member of the Thesis committee)
- 10) L. MARRAMA, June 15, 2010 at Pointe-a-Pitre. (Reviewer, Member of the Habilitation Thesis committee)
- 11) M. GAYDU, September 24, 2010 at Pointe-a-Pitre. (Member of the Thesis committee)
- 12) J. BARRIOS, May 21, 2011 at Pointe-a-Pitre. (Advisor, Member of the Thesis committee)
- 13) P. POULLET, November 24, 2011 at Pointe-a-Pitre. (Member of the Habilitation Thesis)
- 14) G. PASCALINE, December 24, 2011 at Pointe-a-Pitre. (Member of the Thesis committee)
- 15) S. BURNET, October 30, 2012 at Pointe-a-Pitre. (Advisor, Member of the Thesis committee)
- 16) L. NAGESSEUR, October 30, 2012 at Pointe-a-Pitre. (Member of the Thesis committee)
- 17) L. VALMY, November 05, 2012 at Pointe-a-Pitre. (Member of the Thesis committee)
- 18) J.-M. MOUNSAMY, September 23, 2013 at Pointe-a-Pitre. (Member of the Thesis committee)

EDITORIAL ACTIVITIES :

Member of the editorial board of **Journal of Calculus of Variations**.

Member of the editorial board of **International Journal of Instrumentation and Control Systems (IJICS)**.

OTHERS :

Member of the **CAS (Caribbean Academy of Sciences)**.