

CURRICULUM VITAE

ADIMY Mostafa

Senior Researcher (Directeur de Recherche) at INRIA (French National Institute for Computer Sciences and Applied Mathematics)

Head of the “DRACULA” Inria-team: “**Multi-scale modelling of cell dynamics: Application to hematopoiesis**” (23 researchers)

INRIA-Rhône-Alpes, Lyon la Doua, Bâtiment CEI-2, 56, Boulevard Niels Bohr, 69603 Villeurbanne, France

AND

CNRS UMR 5208, Institut Camille Jordan, Université Lyon 1, 43 Boulevard du 11 Novembre 1918, 69622 Villeurbanne Cedex, France

Personal data

Date of Birth: **June 07, 1962**

Tel: **+33 (0) 4 72 43 10 89**

E-mail: **mostafa.adimy@inria.fr**

Academic positions

- **Since 2009:** Senior Research Scientist (Directeur de Recherche) at the INRIA of Lyon head of the "DRACULA" Inria-team
- **2006:** Associate Scientist (Chargé de Recherche en détachement) at INRIA of Bordeaux
- **2005:** Associate Scientist (Chargé de Recherche en délégation) at CNRS (The French National Center for Scientific Research)
- **1999-2008:** Head of the team “Dynamical Systems” at the University of Pau - France
- **1992-2005:** Associate Professor (Maître de Conférences HDR) at the University of Pau – France
- **1990-1992:** Research and Teaching Assistant (ATER) at the University of Pau – France

Education

- **Habilitation:** January 25, 1999: Applied Mathematics, University of Pau
Referees: O. Arino (Pau), J.B. Baillon (Lyon I), A. Cañada (Grenade), R. Deville (Bordeaux I), H. Emamirad (Poitiers), M. Langlais (Bordeaux II, president), R. Nagel (Tübingen), M. Madaune-Tort (Pau), E. Sinestrari (Rome) and J. Wu (Toronto)
- **Ph.D.:** October 15, 1991: Applied Mathematics, University of Pau
Referees: O. Arino (Pau, advisor), W. Arendt (Besançon), Langlais (Bordeaux II), M. Madaune-Tort (Pau) and J-M. Thomas (Pau, president)

Administrative activities

- **September 2018 - February 2019:** Member of the Committee for the Evaluation of the Espace-DEV UMR of the University of French Guyana (<http://www.espace-dev.fr>).
- **Since 2015:** Member of the Scientific Committee (CoS) of INRIA Grenoble-Rhône-Alpes.
- **Since 2016:** Member of the Scientific Committee of the Camille Jordan Institute (Mathematics Laboratory, University of Lyon 1).
- **Since 2016:** Member of the Thesis Committee of the Camille Jordan Institute (Mathematics Laboratory, University of Lyon 1).
- **Since 2013:** President of Selection Committee, Camille Jordan Institute, University of Lyon 1: Associate Professor (Maître de Conférences) position in Mathematical Modeling for Biology.
- **Since 2014:** Member of the Selection Committee, Mathematics and Applications of Mathematics, University of La Réunion: Associate Professor (Maître de Conférences) position in mathematics.
- **2010- 2015:** Scientific expert representing Inria to the National Alliance for Life Sciences and Health (AVIESAN): “Immunology, hematology, pneumology”.
- **2004-2006:** Member of the Scientific Committee of the University of Pau.
- **1996-2000:** Member of the Selection Committee, Mathematics and Applications of Mathematics, University of Pau.
- **1999-2002:** Member of the Selection Committee, Mathematics and Applications of Mathematics, University of Le Havre.
- **1999-2008:** Head of the team “Dynamical Systems” at the University of Pau.
- **1993-1999:** Responsible for the ERASMUS-SOCRATES interuniversity exchange program, University of Pau.

Supervision Activity

- **Ph.D students**
 - **Loïc Barbarroux** « *Contributions to the multiscale modeling of the CD8 immune response: design, analysis, simulation and calibration of mathematical models* », Ecole Centrale de Lyon, July 2017
 - **Abdennasser Chekroun** « *Contribution to the mathematical analysis of age and space structured partial differential equations describing a cell population dynamics model* », Université Lyon, March 2016
 - **Marine Jacquier** « *Mathematical modeling of the hormonal regulation of food intake and body weight: applications to caloric restriction and leptin resistance* » Université de Lyon, February 2016
 - **Romain Yvinec** « *Probabilistic modeling in cellular and molecular biology* », Université Lyon, October 2012
 - **Fabien Crauste** « *Mathematical study of hyperbolic partial differential equations modeling the regulation processes of blood cells - Applications to cyclic hematological diseases* », Université Pau, June 2005

- **Laurent Pujo-Menjouet** « *Contribution à l'étude d'une équation de transport à retards décrivant une dynamique de population cellulaire* », Université Pau, June 2001.
- **Mostafa Laklach** « *Contribution à l'étude des équations aux dérivées partielles à retard et de type neutre* », Université Pau, June 2001.

Recent grants and Fellowships

- IFCAM project - Mathematical modeling of hematopoiesis process in application to chronic and acute myelogenous leukemia - Indo-French Center of Applied Mathematics, Presidency University, Kolkata (India)- 2018-2021
- Inria-India Associate Team - Mathematical modeling of hematopoietic stem cell dynamics in normal and pathological hematopoiesis with optimal control for drug therapy – Inria (France) – 2019-2022
- Inria-Brazil Associate Team - Modelling and Biological Control of Vector-Borne Diseases: the case of Malaria and Dengue – Inria (France)- 2020-2023
- French-Moroccan program CNRS/CNRST « Reduction of complexity in differential equations arising from population dynamics ». Partners: Marrakesh. 2008-2010.
- Inria Program: Euromediterranean « Mathematical Models and Methods in Cell Dynamics ». Marrakech, Tunis, Tlemcen (Algeria), Valladolid (Spain), Turin (Italy). 2012-2015.
- Research program PHC POLONIUM (2014-2015) « Applications of reaction-diffusion equations in biology and medicine ». Partners: Warsaw, Poland. 2012-2015.
- France Canada research fund (FCRF) - New research collaboration « Mathematical modelling of megakaryopoiesis and applications to platelet related diseases ». Partners: York University. 2014-2015.
- Association France Alzheimer Sciences Médicales: PAMELA « Prion et Alzheimer : Modélisation et Expérimentation d'une Liaison Aggressive ». Partners: UR0892 VIM (Virologie et Immunologie Moléculaires), INRA Domaine de Vilvert, Jouy-en-Josas. 2014-2017.
- Associate Teams Inria project, "Modelling Leukemia". Partners: This is joint with Center for Scientific Computing and Applied Mathematical Modeling (Doron Levy) at University of Maryland (USA). 2014-2017.
- French ministry scholarship : 5 times (2002-2005, 2009-2012, 2013-2016, 2014-2017, 2014-2017)

Publications

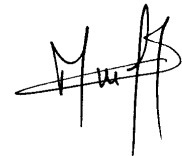
1. M. Adimy , P.F.A. Mancera, D.S. Rodrigues, F.L.P. Santos & C.P. Ferreira. « Maternal Passive Immunity and Dengue Hemorrhagic Fever in Infants » Bull. Math. Biol., 82(2): 24 (2020).
2. M. Adimy, A. Chekroun & C.P. Ferreira. « Global dynamics of a differential-difference system: a case of Kermack-McKendrick SIR model with age-structured protection phase » Mathematical Biosciences and Engineering, 17(2): 1329-1354 (2020).
3. L. Boullu, M. Adimy, F. Crauste & L. Pujo-Menjouet. « Oscillations and asymptotic convergence for a delay differential equation modeling platelet production » Discrete Contin. Dyn. Syst. Ser. B., 24(6): 2417-2442 (2019).
4. L. Barbarroux, Ph. Michel, M. Adimy, & F. Crauste « A multiscale model of the CD8 T cell immune response structured by intracellular content » Discrete Contin. Dyn. Syst. Ser. B., 23(9): 3969-4002 (2018).

5. M. Adimy, A. Chekroun, & B. Kazmierczak « Traveling waves in a coupled reaction-diffusion and difference model of hematopoiesis » *Journal of Differential Equations*, vol. 262, pp. 4085 - 4128 (2017).
6. M. Adimy, A. Chekroun, & T. Kuniya « Delayed nonlocal reaction-diffusion model for hematopoietic stem cell dynamics with Dirichlet boundary conditions » *Mathematical Modelling of Natural Phenomena*", vol. 12, no 6, pp. 1 - 22 (2017).
7. M. Adimy, A. Chekroun, & T. M. Touaoula « Global asymptotic stability for an age-structured model of hematopoietic stem cell dynamics » *Applicable Analysis*, Accepted p. 1-12, (2016).
8. M. Adimy, Y. Bourfia, & M.L. Hbid. Age-structured model of hematopoiesis dynamics with growth factor-dependent coefficients, *Electronic Journal of Differential Equations* 140 , June, 1 – 20 (2016).
9. M. Adimy, A. Chekroun & T. M. Touaoula. *Age structured and delay differential-difference model of hematopoietic stem cell dynamics*. *Discrete and Continuous Dynamical Systems – B*. Vol. 20, No 9, 2765–2791 (2015).
10. M. Adimy, K. Ezzinbi, & C. Marquet. *Ergodic and weighted pseudo-almost periodic solutions for partial functional differential equations in fading memory spaces*. *Journal of Applied Mathematics and Computing*. 44, No. 1-2, 147-165 (2014).
11. M. Adimy, O. Angulo, J. L Opez-Marcos, & M. L Opez-Marcos. *Asymptotic behaviour of a mathematical model of hematopoietic stem cell dynamics*. *International Journal of Computer Mathematics*, Vol. 91, No. 2, 198–208 (2014).
12. M. Adimy, O. Angulo, C. Marquet, & L. Sebaa. *A mathematical model of multistage hematopoietic cell lineages*. *Discrete and Continuous Dynamical Systems - Series B*, Vol. 19, No. 1, 1-26 (2014).
13. M. Adimy, K. Ezzinbi, & M. Alia. *Functional differential equations with unbounded delay in extrapolation spaces*. *Electronic Journal of Differential Equations*, No. 180, 16 p. (2014).
14. M. Adimy, & F. Crauste. *Delay Differential Equations and Autonomous Oscillations in Hematopoietic Stem Cell Dynamics Modeling*. *Mathematical Modelling of Natural Phenomena EDP Sciences*, 7, 1-22 (2012).
15. M. Adimy, K. Ezzinbi, & C. Marquet. *Center manifolds for some partial functional differential equations with infinite delay in fading memory spaces*. *Journal of Concrete & Applicable Mathematics*. 10, 168-185 (2012).
16. M. Adimy, & F. Crauste. *Delay differential equations and autonomous oscillations in hematopoietic stem cell dynamics modeling*. *Math. Model. Nat. Phenom.* 7, 1-22 (2012).
17. M. Adimy, F. Crauste, H. Hbid, & R. Qesmi. *Stability and Hopf bifurcation for a cell population model with state-dependent delay*. *SIAM J. Appl. Math* 70, 1611-1633 (2010).
18. M. Adimy, F. Crauste, & C. Marquet. *Asymptotic behavior and stability switch for a mature-immature model of cell differentiation*. *Nonlinear Anal. Real World Appl.* 11, 2913-2929 (2010).
19. M. Adimy, A. Elazzoui, & K. Ezzinbi. *Reduction principle and dynamic behaviors for a class of partial functional differential equations*. *Nonlinear Analysis, TMA*, 71, 1709-1727 (2009).
20. M. Adimy & F. Crauste. *Mathematical model of hematopoiesis dynamics with growth factor-dependent apoptosis and proliferation regulation*. *Mathematical and Computer Modelling*, 49, 2128-2137 (2009).
21. C. Kou, M. Adimy, & A. Ducrod. *On the dynamics of an impulsive model of hematopoiesis*. *Journal of Mathematical Modelling and Natural Phenomena*, 4(2), 89-112 (2009).
22. M. Adimy, F. Crauste, & A. El Abdllaoui. *Discrete maturity-structured model of cell differentiation with applications to acute myelogenous leukemia*. *Journal of Biological Systems*, Vol. 16 (3), 395-424, (2008).

23. M. Adimy, O. Angulo, F. Crauste, & J.C. Lopez-Marcos. *Numerical integration of a mathematical model of hematopoietic stem cell dynamics*. Computers & Mathematics with Applications, Vol. 56 (3), 594-60, (2008).
24. M. Adimy, K. Ezzinbi, & A. Ouhinou. *Behavior near hyperbolic stationary solutions for partial differential equations with infinite delay*. Nonlinear Analysis, TMA, 68, No. 8 (A), 2280-2302 (2008).
25. M. Adimy & F. Crauste. *Modelling and asymptotic stability of a growth factor-dependent stem cells dynamics model with distributed delay*. Discrete and Continuous Dynamical Systems Series B, 8(1), 19-38 (2007).
26. M. Adimy, A. Elazzoui, & K. Ezzinbi. *Bohr-Neugebauer type theorem for some partial neutral functional differential equations*. Nonlinear Analysis, TMA. 66, 1145-1160 (2007).
27. M. Adimy & K. Ezzinbi. *Existence and stability in the alpha-norm for partial functional differential equations of neutral type*. Annali di matematica pura ed applicata, 185(3), 437-460 (2006).
28. M. Adimy, F. Crauste, & A. El Abdllaoui. *Asymptotic behavior of a discrete maturity structured system of hematopoietic stem cell dynamics with several delays*. Journal of Mathematical Modelling and Natural Phenomena, 1(2), 1-19 (2006).
29. M. Adimy, F. Crauste, & S. Ruan. *Modelling hematopoiesis mediated by growth factors with applications to periodic hematological diseases*. Bulletin of Mathematical Biology, 68 (8), 2321-2351 (2006).
30. M. Adimy, F. Crauste, & S. Ruan. *Periodic Oscillations in Leukopoiesis Models with Two Delays*. Journal of Theoretical Biology, 242, 288-299 (2006).
31. M. Adimy, F. Crauste, A. Halanay, M. Neamtu, & D.Opris. *Stability of limit cycles in a pluripotent stem cell dynamics model*. Chaos, Solitons and Fractals, 27 (4), 1091-1107 (2006).
32. M. Adimy, K. Ezzinbi, & A. Ouhinou. *Variation of constants formula and almost periodic solutions for some partial functional differential equations with infinite delay*. Journal of Mathematical Analysis and Applications, 317, 668-689 (2006).
33. M. Adimy, K. Ezzinbi, & J. Wu. *Center manifold and stability in critical cases for some partial functional differential equations*. International Journal of Evaluation Equations, 2, 69-95 (2006).
34. M. Adimy, F. Crauste, & S. Ruan. *A mathematical study of the hematopoiesis process with applications to chronic myelogenous leukemia*. SIAM J. Appl. Math., 65 (4), 1328-1352 (2005).
35. M. Adimy, F. Crauste, & S. Ruan. *Stability and Hopf bifurcation in a mathematical model of pluripotent stem cell dynamics*. Nonlinear Analysis: Real World Applications, 6 (4), 651-670 (2005).
36. M. Adimy & F. Crauste. *Existence, positivity and stability for a nonlinear model of cellular proliferation*. Nonlinear Analysis: Real World Applications, 6 (2), 337-366 (2005).
37. M. Adimy, F. Crauste, & L. Pujon-Menjouet. *On the stability of a maturity structured model of cellular proliferation*. Dis. Cont. Dyn. Sys. Ser. A, 12 (3), 501-522 (2005).
38. M. Adimy & K. Ezzinbi. *Existence and stability of solutions for a class of partial neutral functional differential equations*. Hiroshima Mathematical Journal, 34, 251-294 (2004).
39. M. Adimy, H. Bouzahir, & K. Ezzinbi. *Local existence or a class of partial neutral functional differential equations with infinite delay*. Differential Equations and Dynamical Systems, Vol 12, N° 3 et 4, 353-370 (2004).
40. M. Adimy, H. Bouzahir, & K. Ezzinbi. *Existence and stability for some partial neutral functional differential equations with infinite delay*. Journal of Mathematical Analysis and Applications, 294, N° 2, 438-461 (2004).

41. M. Adimy, K. Ezzinbi, & K. Laklach. *Nonlinear semigroup of a class of abstract semilinear functional differential equations with non-dense domain*. Acta Mathematica Sinica, 20, N° 5, 933-942 (2004).
42. M. Adimy & F. Crauste. *Global stability of a partial differential equation with distributed delay due to cellular replication*. Nonlinear Analysis, 54 (8), 1469-1491 (2003).
43. M. Adimy & L. Pujo-Menjouet. *Asymptotic behavior of a singular transport equation modelling cell division*. Dis. Cont. Dyn. Sys. Ser. B, 3 (3), 439-456 (2003).
44. M. Adimy et L. Pujo-Menjouet. *A mathematical model describing cellular division with a proliferating phase duration depending on the maturity of cells*. Electron. J. Diff. Equ. 2003, 107, 14p (2003).
45. M. Adimy, H. Bouzahir, & K. Ezzinbi. *Local existence and stability for some partial functional differential equations with infinite delay*. Nonlinear Analysis, TMA, 48A (3), 323-348 (2002).
46. M. Adimy, K. Ezzinbi, & K. Laklach. *Spectral decomposition for partial neutral functional differential equations*. Canad. Appl. Math. Quart., 9 (1), 1-34 (2001).
47. M. Adimy, H. Bouzahir, & K. Ezzinbi. *Existence for a class of partial functional differential equations with infinite delay*. Nonlinear Analysis, TMA, 46A (1), 91-112 (2001).
48. M. Adimy & K. Ezzinbi. *Existence and linearized stability for partial neutral functional differential equations with non-dense domains*. Diff. Equ. and Dyn. Syst., 7, 371-417 (1999).
49. M. Adimy & K. Ezzinbi. *Strict solutions of nonlinear hyperbolic neutral differential equations*. Applied Mathematics Letters, 12, p. 107-112, (1999).
50. M. Adimy & K. Ezzinbi. *Local existence and linearized stability for partial functional differential equations*. Dynamic Systems and Applications, 7, p. 389-404, (1998).
51. M. Adimy & K. Ezzinbi. *A Class of Linear Partial Neutral Functional differential Equations with Non-Dense Domain*. Journal of Differential Equations, 147, p. 285-332, (1998).
52. M. Adimy, A. Chekroun, & T. M. Touaoula. *A delay differential-difference system of hematopoietic stem cell dynamics*. Comptes Rendus Mathématique. 353 (4), 303-307 (2015).
53. M. Adimy & C. Marquet. *On the stability of hematopoietic model with feedback control*. C. R. Math. Acad. Sci. Paris 350, 173-176 (2012).
54. M. Adimy, F. Crauste, & A. El Abdllaoui. *Boundedness and Lyapunov Function for a Nonlinear System of Hematopoietic Stem Cell Dynamics*. Comptes Rendus Mathématiques 348, 373-377 (2010).
55. M. Adimy & K. Ezzinbi. *Existence, regularity, stability and boundedness for some partial functional differential equations*. Société Mathématique de France, 17, 157-188 (2009).
56. M. Adimy, S. Bernard, J. Clairambault, F. Crauste, S. Génieys, & L. Pujo-Menjouet. *Modélisation de la dynamique de l'hématopoïèse normale et pathologique*. Hématologie, 14 (5), 339-350 (2008).
57. K. Ezzinbi et M. Adimy. *The Basic Theory of Abstract Semilinear Functional Differential Equations with Non-Dense Domain*. "Delay Differential Equations with Applications", NATO Science Series II: Mathematics, Physics and Chemistry, Vol. 205, 590 p., Springer, Berlin (2006).
58. M. Adimy & F. Crauste. *Stability and instability induced by time delay in an erythropoiesis model*. Monografias del Seminario Matematico Garcia de Galdeano, 31, 3-12, (2004).
59. M. Adimy & F. Crauste. *Un modèle non-linéaire de prolifération cellulaire : extinction des cellules et invariance*. Comptes Rendus Mathématiques, 336, 559-564 (2003).
60. M. Adimy & L. Pujo-Menjouet. *A singular transport model describing cellular division*. C.R. Acad. Sci. Paris, 332 (12), 1071-1076 (2001).

61. M. Adimy & M. Laklach. *Local Hopf bifurcation for some class of partial differential equations*. Actes des 6èmes journées Zaragoza-Pau de mathématiques appliquées et de statistiques, 21-28, (2001).
62. F. Crauste & M. Adimy. *Bifurcation dans un modèle non-linéaire de production du sang*. Comptes-rendus de la 7ième Rencontre du Non-linéaire, Non-linéaire Publications, Paris, 73-78, (2004).
63. M. Adimy, K. Ezzinbi, & K. Laklach. *Existence of solution for a class of partial neutral differential equations*. C.R. Acad. Sci. Paris, 330, 957-962 (2000).
64. M. Adimy. *On the compactness of the semigroup solution of abstract semilinear functional differential equations with a non-dense domain*. Publ. Semin. Mat. García de Galdeano, Serie II, 20, 45-52, (1999).
65. M. Adimy, & K. Ezzinbi. *Semi-groupes intégrés et équations à retard en dimension infinie*. C. R. Acad. Sci. Paris, t. 323, Série I, 481-486,(1996).
66. M. Adimy, & K. Ezzinbi. *Equations de type neutre et semi-groupes intégrés*. C. R. Acad. Sci. Paris t. 318, Série I, 529-534, (1994).
67. M. Adimy, & O. Arino. *Bifurcation de Hopf globale pour des équations à retard par des semi-groupes intégrés*. C. R. Acad. Sci. Paris, t. 317, Série I, 767-772, (1993).
68. M. Adimy. *Integrated semigroups and delay differential equations*. J. of Math. Anal. and Appl., 177, No.1, 125-134, (1993).
69. M. Adimy, & A. Agouzal. *Une méthode numérique de bifurcation de Hopf locale par des semi-groupes intégrés pour une équation à mémoire*. Actes des 2èmes Journées Saragosse-Pau de Mathématiques Appliquées, p. 37-46, (1992).
70. M. Adimy. *Bifurcation de Hopf locale par des semi-groupes intégrés*. C. R. Acad. Sci. Paris, t. 311, Série I, 423-428, (1990).



Mostafa ADIMY