

# CURRICULUM VITAE

1. **Family name:** HALANAY
2. **First names:** ANDREI
3. **Date of birth:**
4. **Nationality:** Romanian
5. **Education:**

Institution [Dates]	Degree(s) or Diploma(s) obtained
University of Bucharest, September 1971- July 1975	B.A. (Licence) in Mathematics
University of Bucharest, September 1975- July 1976	Master in Mathematical Analysis
University of Bucharest, 1978-1988 (no frequency)	Ph. D (Doctorat) in Mathematics
XXXXX	XXXXX
XXXXX	XXXXX
XXXXX	XXXXX
XXXXX	XXXXX

## 7. Language skills: (1 to 5 (1 = excellent; 5 = poor))

Language	Reading	Speaking	Writing
Romanian	1	1	1
English	2	3	3
French	2	3	3
Russian	3	5	5

8. **Membership of professional bodies:** AMS, SIAM
9. **Present position:** Professor, University Politehnica of Bucharest
10. **Years within the firm:** 31
11. **Key qualifications:**

- Teaching: Mathematical Analysis, Differential Equations, Complex Analysis, Integral Equations.
- Research: Operator Theory; Applications of Differential Equations and of Delay Differential equations in Biology and Engineering ; Shape optimization and fluid structure interaction.

## 13. Professional experience:

Dates	Location	Company	Position
Sept 1976-March 1982:	Bucharest	Industrial high school no.25	Mathematics teacher
<b>Description:</b> Teaching hours for high school pupils with additional educational activities. Permanently appointed,			

Dates	Location	Company	Position
March 1982-	Bucharest	University Politehnica of	Teaching assistant (1982-

		Bucharest	1990), lecturer (1990-1998), assistant professor (maitre de conference) (1998-2005), full professor (2005-), habilitation 2010.
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**Description:**

Teaching: Courses and applications in Mathematical Analysis, Differential Equations, Complex Analysis, Integral Equations.

Research: Fundamental research in Operator Theory. Applied research in Differential equations

Dates	Location	Company	Position
5-24 June 2006	Pau, France	University of Pau	Invited through the France-Romania cooperation program Brancusi

**Description:**

Work with French colleagues on problems of mathematical modeling of hematological diseases.

**1. Other relevant information:**

- Co-organizer, with E. Kaslik, of the Minisymposium **Dynamical Systems in Medicine and Biology**, in the setting of the Conference **Emerging Trends in Applied Mathematics and Mechanics**, Krakow, Poland, 2018
- Co-organizer, with M. Adimy, of the Minisymposium *Delay Differential Equations in Biology and Medicine* in the setting of the Conference **Emerging Trends in Applied Mathematics and Mechanics, Perpignan**, Franta, 2016
- Co-organiser, with N. Apreutesei, of the Special Session *Mathematical Modeling of Some Medical and Biological Processes*, at The Eighth Congress of Romanian Mathematicians, Iasi, 2015.
- Co-organiser, with M. Neamtu, of the Special Session *Delay Differential Equations Models in Life Sciences, Engineering and Economics* at ICNPAA 2014 and 2016
- Invited speaker at the 30–th International School in Automatic Control, Grenoble, 2009.
- Co-organizer, with I. Ursu, of the special session Control of aviation servomechanisms and interaction with structure, ICNPAA 2008, Genova, Italia.
- **Member in the editorial board of the journal Mathematics in Engineering, Science and Aerospace.**
- Co-organizer of the conference “Modelisation mathematique en biologie et en medicine”, Craiova, 2006
- Member CNATDCU 2012-2016.
- Member in the Contestation Comitee for Mathematics, CNATDCU, 2017- 2020.

**List of papers****Papers in International journals**

1. Daniela Enciu, Andrei Halanay, Adrian Toader & Ioan Ursu (2022): Lyapunov-Malkin type approach of equilibrium stability in a critical case applied to a switched model of a servomechanism with state delay, *International Journal of Control*, DOI:10.1080/00207179.2022.2156929
2. F. Avram, R. Adenane , G. Bianchin and A. Halanay (2022), Stability Analysis of an Eight Parameter SIR-Type Model Including Loss of Immunity and Disease and Vaccination Fatalities, *Mathematics* **2022**, 10, 402, <https://doi.org/10.3390/math10030402>
3. F. Avram, R. Adenane and A. Halanay (2022), New Results and Open Questions for SIR-PH Epidemic Models with Linear Birth Rate, Loss of Immunity, Vaccination and Disease and Vaccination Fatalities, *Symmetry* **2022**, 14, 995. <https://doi.org/10.3390/sym14050995>
4. K. Amin, I. Badr alexi, A. Halanay, R. Mghames (2021), A stability theorem for equilibria of delay differential equations in a critical case with application to a model of cell evolution, *Mathematical Modeling of Natural Phenomena*, vol. 16, <https://doi.org/10.1051/mmnp/2021021> (Franta) (revista **ISI**, impact factor 1, 642, SRI 0,775) (ISSN 0973-5348).
5. Daniela Enciu, Andrei Halanay (2021), Stability for a delayed switched nonlinear system of differential equations in a critical case, *International Journal of Control* 95:6,1543-1550, DOI: 10.1080/00207179.2020.1862423 (revista **ISI**, Impact factor 3, 47, SRI 1,236 -2019 (1,299-2017), ISSN 0027179).
6. A. Halanay, C.A. Safta (2020), A critical case for stability of equilibria of delay differential equations and the study of a model for an electrohydraulic servomechanism, *Systems & Control Letters*, 142 ( revista **ISI**, Impact factor 2, 762, SRI 2, 276) (ISSN 0167-6911).
7. R. Radulescu, D. Candea, A. Halanay (2016), Optimal control analysis of a leukemia model under imatinib treatment, *Mathematics and Computers in Simulation*, 121,1-11 (Elsevier) (revista **ISI**, Impact Factor1,218, SRI 0,953) ( ISSN 0378-4754).
8. D. Candea, A. Halanay, R. Radulescu (2016), Stability analysis of some equilibria in a time-delay model for cell dynamics in leukemia including the action of the immune system, *MESA*, vol. 7, no2, 315-339 (SUA).
9. Andrei Halanay, Cornel Marius Murea and Dan Tiba (2016), Existence of a Steady Flow of Stokes Fluid Past a Linear Elastic Structure Using Fictitious Domain, *J. Math. Fluid Mech.*, 18 , 397-413, DOI 10.1007/s00021-015-0247-0 (revista **ISI**, Impact factor 1, 106, SRI 1, 971) (ISSN 1422-6928)
10. A. Halanay, L. Pandolfi (2015), Approximate controllability and lack of controllability to zero of the heat equation with memory, *J. Math. Anal. Appl.* 425 (2015) 194–211.(revista **ISI**, Impact factor 1, 064; 5-Years impact factor 1, 151, SRI 1,104) (ISSN 0022-247X).
11. A. Halanay, D. Candea, R. Radulescu (2015), Stability analysis of equilibria in a delay differential equations model of CML including asymmetric division and treatment, *Mathematics and Computers in Simulation* ,110 (2015), 69-82, DOI:10.1016/j.matcom.2014.04.008 (Elsevier) (revista **ISI**, Impact Factor1,218, SRI 0,953) ( ISSN 0378-4754).
12. I. R. Radulescu, D. Candea, A. Halanay (2014), A study on stability and medical implications for a complex delay model for CML with cell competition and treatment, *Journal of Theoretical Biology*, vol 363, 30-40 (revista **ISI**, Impact factor 2, 303; 5-Years impact factor 2, 394, SRI 1,348) (ISSN 0022-5193).

13. A. Halanay, L. Pandolfi (2014), Lack of controllability of thermal systems with memory, *Evolution Equations and Control Theory*, vol. 3, no. 3, 485-497 ( revista **ISI** , Impact factor 1,049, SRI 0,834) (AIMS Journal, SUA) (ISSN 2163-2480 (e)).
14. A. Halanay, D. Candea, R. Radulescu (2014), Existence and Stability of Limit Cycles in a Two-delays Model of Hematopoiesis Including Asymmetric Division, *Mathematical Modeling of Natural Phenomena*, vol.9, no.1, 58-78. (Franta) (revista **ISI**, impact factor 0,952, SRI 0.854) (ISSN 0973-5348).
15. S. Balea, A. Halanay, D. Jordan, M. Neamtu, C. Safta (2014), Stability analysis of a feedback model for the action of the immune system in leukemia, *Mathematical Modeling of Natural Phenomena*, vol.9, no.1, 108-132. (Franta) (revista **ISI**, impact factor 0,952, SRI 0,854) (ISSN 0973-5348).
16. I. Ursu, A. Toader, A. Halanay, S. Balea (2013), New stabilization and tracking control laws for electrohydraulic servomechanisms, *European J. of Control* 19, 65-80. (revista **ISI**, impact factor 1,944; SRI 1, 308) (ISSN 0947-3580)
17. A.Halanay, C. Murea, C. A. Safta, (2013), Numerical Experiments for Stabilization of the Heat Equation by Dirichlet Boundary Control, *Numerical Functional Analysis and Optimization*, vol. 34, no.12, 1317-1327, ISSN: 0163-0563. (revista **ISI**, impact factor 0,852, SRI 0,691).
18. S. Balea, A. Halanay, I. Ursu (2013), New results on the problem of the stabilization of equilibria for models of electrohydraulic servoactuators, *Discrete and Continuous Dynamical Systems*, series S, vol. 6, no. 6, 1551-1567, ISSN 1531-3492. (revista **ISI**, Impact factor 0,781, SRI 0,626) (SUA).
19. A. Halanay, L. Pandolfi (2012), Lack of controllability of the heat equation with memory, *Systems & Control Letters*, 61, 999-1002, (revista **ISI**, impact factor 2, 550, SRI 2,276)
20. A. Halanay (2012), Periodic solutions in a mathematical model for the treatment of chronic myelogenous leukemia , *Mathematical Modeling of Natural Phenomena*, vol.7, no.1, 235-244. (Franta) (revista **ISI**, impact factor 0,952, SRI 0,854) (ISSN 0973-5348).
21. S.Balea, A. Halanay, I. Ursu (2010), Coordinates transformation and stabilization for switching models of actuators in servoelastic framework, *Applied Mathematical Sciences*, vol. 4, no 73-76, 3625-3643.
22. A. Halanay, A. Ionita, C. A. Safta (2010), Hopf bifurcations through delay in pilot reaction in a longitudinal flight, *Nonlinear Dynamics*, 60(3), pp. 413-423, DOI : 10.1007/s11071-009-9605-x.. (SUA) (revista **ISI**, Impact factor 3, 464, SRI 2,285) .
23. A. Halanay, D. Tiba (2009), Shape optimization for stationary Navier-Stokes equations, *Control and Cybernetics*, vol. 38, no. 4, 1359-1375. (Polonia)(revista **ISI**, Impact factor 0,3)
24. A. Halanay, I. Ursu (2009), Stability of some switched nonlinear systems with applications to control synthesis for electrohydraulic servomechanisms, *IMA Journal of Applied Mathematics*, vol. 74, no 3, 361-373; (Anglia) (revista **ISI**, Impact factor 0,945, SRI 0,871).
25. A. Halanay, C. A. Safta, I. Ursu, F. Ursu (2009), Stability analysis for a nonlinear model of a hydraulic servomechanism in a servoelastic framework, *Nonlinear Analysis: Real World Applications*, 10, 1197-1209 (SUA) (revista **ISI**, Impact factor 2,519, SRI 1,491).
26. M. Adimy, F. Crauste, A. Halanay, M. Neamtu, D. Opris (2006), Stability of Limit Cycles in a Pluripotent Stem Cell Dynamics Model, *Chaos, Solitons and Fractals*, 27(4), 1091-1107. (Elsevier) (revista **ISI**, Impact factor 1, 448, SRI 1,329).
27. A.Halanay, C. A. Safta (2005), Stabilization of some nonlinear controlled electrohydraulic servosystems, *Applied Mathematics Letters*, vol.18, no.8, pp.911-915, (SUA) (revista **ISI**, Impact factor 2,233, SRI 1,305).

28. A.Halanay, C.A.Safta, I.Ursu, F.Ursu (2004), Stability of equilibria in a four-dimensional nonlinear model of a hydraulic servomechanism, *Journal of Engineering Mathematics*, vol. 49,no.4, p.391-406 (Olanda) ( revista **ISI**, Impact factor 1,076, SRI 0,955)
29. A.Halanay (2003), On the stability of some equilibrium points in a plankton population model,*Dynamical Systems.An International Journal*,18,no.3,p.227-231.(Marea Britanie) (revista **ISI**, Impact factor 0,597, SRI 0,657)
30. A.Halanay, C. A. Safta (2000), Existence and stability of normal motions in loaded hydraulic copying systems with periodic and composed inputs, *Z. Angew. Math. Mech.*, 80, no. 2, 93-101. (Germania) (revista **ISI**, Impact factor 1, 332, SRI 0,959)
31. A.Halanay, C. A .Safta (1999), Stability and accuracy of steady-state motions in loaded copying systems:an analytical approach, *Computer Assisted Mech.and Engineering Sci.*, 6, p.107-113. (Polonia)
32. A. Halanay, C. A. Safta (1998), Periodic motions for loaded two control edges hydraulic copying systems, *Computer Methods in Applied Mechanics and Engineering*, 158, p. 367-374. (SUA) (revista **ISI**, Impact factor 3,949, SRI 4,570)
33. A. Halanay (1991), A model for a general linear bounded operator between two Hilbert spaces, *Acta.Sci Math. (Szeged)*, 55, no.1-2, p.119-128.(Ungaria).
34. A. Halanay (1990), On the existence of invariant subspaces for some contractions with spectrum dominating an arc on the unit circle, *J. Operator Theory*, 23, p. 51-66. (Romania) (revista **ISI**, Impact factor 0, 524, SRI 1,046)

### **Papers in National journals**

1. Ana-Maria Bordei, Andrei Halanay (2023), Stability for small delays, Metzler matrices and an application to a flight controller design, *U.P.B. Sci. Bull., Series A*, Vol. 85, Iss. 2, p. 59-68.
2. Karim Amin, Andrei Halanay, Ragheb Mghames, Rawan Abdullah (2023), A delay differential equation model for cell evolution in Chikungunya,*U.P.B. Sci. Bull., Series A*, Vol. 85, Iss. 1, p. 95-106.
3. Karim Amin, Andrei Halanay, Ileana Rodica Rădulescu , Mihaela Andreea Ungureanu (2021), A model for cell evolution in malaria under treatment considering the action of the immune system, *U.P.B. Sci. Bull., Series A*, Vol. 83, Iss. 3, p.171-188.
4. Irina Badralexii, Silvia Balea, Andrei Halanay, Dumitru Jardan, Rodica Radulescu, (2020), A complex model of cell evolution in leukemia including competition and the action of the immune system, *Ann. Acad. Rom. Sci. Ser. Math. Appl.*, Vol. 12, No. 1-2/2020. (BDI, ISSN 2066-5997).
5. Irina Badralexii, Andrei Halanay, Ragheb Mghames (2020), A delay differential equations model for maintenance therapy in Acute Lymphoblastic Leukemia., *Sci. Bull.UPB, Series A*, Vol. 82, no. 3 (revista **ISI**, IF 0,629)
6. I. Badralexii, A.M. Bordei, A. Halanay (2018), Rank-one perturbations and stability of some equilibrium points in a complex model of cells evolution in leukemia, *Sci. Bull. UPB, series A*, vol.80, iss.3, pp.3-14 (revista **ISI**, IF 0,629)
7. D. Enciu, A. Halanay, I. Ursu (2018), Delay differential equations models for mechano and electrohydraulic servomechanisms, *Sci. Bull. UPB, series A*, vol.80, iss.3, p 27-36. (revista **ISI**, IF 2019 0,629).
8. I. Badralexii, D. Candea, A. Halanay, I.R. Radulescu (2018), A model for cell evolution in CML under treatment including pharmacodynamics, *Bull. Math. Soc. Sci. Math. Roumanie*, Tome 61 (109), No. 4, 383-398, FI 0,412, WOS 000454162900003

9. A. Halanay, C.M. Murea, D. Tiba (2018), Extension theorems related to a fluid-structure interaction problem, Bull. Math. Soc. Sci. Math. Roumanie, Tome 61 (109), No. 4, 2018, 417–437, FI 0,412, WOS: 000454162900006
10. A. M. Bordei, A. Halanay (2017) Stability analysis for an UAV model in a longitudinal flight, INCAS Bull, vol.9, no.4, pp.21-29.
11. I.R. Rădulescu , D. Căndeia, A. Halanay (2016) , *Stability analysis of some equilibria in a time-delay model for competition of leukemia and healthy cells in CML*, Bull. Math. Soc. Sci. Math. Roumanie, Vol. 4, ISSN: 1220-3874. ( revista **ISI**, IF 0,521)
12. I. Badralexu, A. Halanay, I. R. Radulescu (2015), A Lyapunov-Krasovskii Functional for a Complex System of Delay-Differential Equations, U.P.B. Sci. Bull., Series A, Vol. 77, Iss. 2, ISSN: 1223-7027. ( revista **ISI**).
13. D. Candea, A. Halanay, R. Radulescu (2013), Stability analysis in a model for stem-like hematopoietic cells dynamics in leukemia under treatment, Mathematics and its Applications, vol.5, no. 1-2, pp. 148-176.
14. A. Halanay, C. Murea si D. Tiba (2013), Existence and approximation for a steady fluid-structure interaction using fictitious domain approach with penalization, Mathematics and its Applications, vol.5, no. 1-2, pp. 120-147.
15. S. Balea, A. Halanay, I. Ursu (2010), Coordinate transformations and stabilization of some switched control systems with application to hydrostatic electrohydraulic servoactuator, Control Engin. Appl. Informatics, vol 12, no. 3, pp 67-72. ( revista **ISI**, IF 0, 537).
16. A. Halanay, A. Ionita (2010), Existence and stability of periodic motions in some roll-coupling dynamics of an aircraft, Proc. Romanian Academy, Ser. A, vol 11. no.2, pp. 103-107 ( Lucrare **ISI**, IF 1, 658).
17. A. Halanay (2010), Stability analysis for a mathematical model of chemotherapy action in hematological diseases, Bull. Math. Soc. Sci. Math. Roumanie, 53 (101), no. 1, pp. 3-10 (Lucrare **ISI**, IF 0,521).
18. A. Halanay (2010), Treatment induced periodic solutions in some mathematical models of tumoral cell dynamics, Mathematical Reports, 12(62), no. 4, pp.329-339 (Lucrare **ISI**, IF 0,12)
19. S. Balea, A. Halanay, I. Ursu (2009), Stabilization through coordinates transformation for switched systems associated to electrohydraulic servomechanisms, Mathematical Reports, 11(61), no. 4, p. 279-292 (Lucrare **ISI**, 0,12).
20. I.Ursu, F. Ursu, A.Halanay, C.A.Safta (2008), Equilibrium Stability of a Servo Actuating Flight Controls in a Servoelastic Framework, Acta. Univ. Apulensis, 15, pp. 179-189.
21. A. Halanay, I. Ursu (2007), Stability of equilibria in a model for electrohydraulic servomechanisms, Mathematical Reports, vol 9(59), nr.1, pp. 47-54.
22. A. Halanay (2007), Some remarks on the stability of the “dead-ocean”steady- state in a plankton population model, Bull. Math. Soc. Sci. Math.Roumanie, Tome 50(98), no.2 (Lucrare **ISI**, IF 0, 521).
23. A. Halanay (2004), Controlled factorization for some commuting pairs of contractions with thin spectrum, Revue Roum. de Math. Pures et Appl. 49, no. 4, 323-354.
24. A. Halanay (2001), Weak\*-embedding  $l^1$  into  $H^\infty(D)$ :an example, Bull.Math.Soc.Sci.Math.Roumanie 44(92), no.2, p.199-207.
25. A. Halanay (1999), Factorisation for contractions with essential resolvent rapidly growing near an arc on the unit circle,Math.Reports 1,no.1,p.49-81.
26. A. Halanay, C.A.Safta(1999),Behaviour of unloaded copying systems near the stability boundary, Sci. Bull.UPB Ser.A, 61, no.1-2, p.65-81.
27. A. Halanay (1998), On perturbation of boundedly complete basic sequences in Banach spaces, Sci. Bull. UPB Ser.A, 60, no. 3-4, p.129-135.

28. A. Halanay, C. A. Safta, N.Vasilii (1998), Periodic motions in hydraulic copying systems, Bull. Șt. Univ. Pitești, Ser. Mat-Fiz.2, p. 115-122.
29. A. Halanay (1997), Sequences of non-weakly compact sets in  $\mathbf{A}(\mathbf{D})^*$  and Schauder decompositions of  $l^1$ , Stud. Cerc. Mat .49,no.5-6,p.331-338.
30. A. Halanay (1996), Subspaces of  $H^\infty$  and the study of contractions with spectral radius one, Revue Roumaine de Math. Pures et Appl. 41, no.1-2, p.51-82.
31. A.Halanay (1989), A  $J$ -isometric dilation of a continuous semigroup with positive generator, Revue Roumaine de Math.Pures et Appl.34,no.1,p.23-27.

### **Chapters in books**

1. C. Murea, A.Halanay (2017),Uniform Estimation of a Constant Issued from a Fluid-Structure Interaction Problem, System Modeling and Optimization, Lorena Bociu • Jean-Antoine Désidéri, Abderrahmane Habbal (Eds.), IFIP Advances in Information and Communication Technology, Vol. 494, p. 292-302 , ISBN 978-3-319-55794-6, Springer, Berlin.
2. I.R. Rădulescu, D. Căndea, A. Halanay (2017), A Complex Mathematical Model with Competition in Leukemia with Immune Response - An Optimal Control Approach, System Modeling and Optimization, Lorena Bociu • Jean-Antoine Désidéri, Abderrahmane Habbal (Eds.), IFIP Advances in Information and Communication Technology, Vol. 494, p. 430-442 , ISBN 978-3-319-55794-6, Springer, Berlin.
3. C. Murea, A.Halanay (2013), Embedded domain technique for a fluid-structure interaction problem, System Modeling and Optimization, D. Homberg, F. Troltsch eds., IFIP Advances in Information and Communication Technology, vol 391, p. 358-367, ISBN 978-3-642-36061-9, Springer, Berlin.
4. A.Halanay, C. Murea (2013), Fixed domain algorithms in shape optimization for stationary Navier-Stokes equations, System Modeling and Optimization, D. Homberg, F. Troltsch eds.IFIP Advances in Information and Communication Technology, vol 391, p. 378-386, ISBN 978-3-642-36061-9, Springer, Berlin.
5. A. Halanay, I. Ursu (2010), Stability analysis of equilibria in a switching nonlinear model of a hydrostatic electrohydraulic actuator, in *Mathematical Analysis and Applications in Engineering Aerospace and Sciences*, S. Sivasundaram (ed). Cambridge Scientific Publishers, ISBN 978-1-904868-798
6. S. Balea, A. Halanay, F. Ursu, I. Ursu (2009), Geometric Methods in Control Synthesis for Electrohydraulic Servoactuators in Servoelastic Framework, *Seventh International Conference on Mathematical Problems in Engineering and Aerospace Sciences*, S.Sivasundaram (ed), pp. 51-57, Cambridge Scientific Publishers.
7. A.Halanay, I. Ursu (2009), Stabilization in Switching Models for Electrohydraulic Servoactuators in a Servoelastic Framework, *Seventh International Conference on Mathematical Problems in Engineering and Aerospace Sciences*, S.Sivasundaram (ed), pp. 73-80, Cambridge Scientific Publishers.
8. A.Halanay, I. Ursu, C. A. Safta, F. Ursu (2009), Control Synthesis for Electrohydraulic Servoactuators in a Servoelastic Framework, *Seventh International Conference on Mathematical Problems in Engineering and Aerospace Sciences*, S.Sivasundaram (ed), pp. 716-723, Cambridge Scientific Publishers.
9. A. Halanay, C. A. Safta, F. Ursu, I. Ursu (2007), Stability analysis and tracking control synthesis of a hydraulic servo in a servoelastic framework: backstepping design, *Proceedings of Sixth International Conference on Mathematical Problems in*

*Engineering and Aerospace Sciences*, S.Sivasundaram (ed), pp. 839-846, Cambridge Scientific Publishers.

10. A. Halanay, F. Popescu, C. A. Safta, F. Ursu, I. Ursu (2005), Stability analysis and nonlinear control synthesis for hydraulic servos actuating primary flight controls, in *ICNPAA 2004*, S. Sivasundaram editor, pp.243-251, Cambridge Scientific Publishers.
11. A.Halanay (1987), Extension of the (BCP)-technique, in *Operators in Indefinite Metric Spaces, Scattering Theory and Other Topics* (H. Helson, B. Sz.-Nagy, F. H. Vasilescu, D. Voiculescu, editori), Birkhäuser, pp.195-201, ISBN 3-7643-1843-0.

### **Proceedings of international conferences**

1. A.-M. Bordei, A. Halanay (2018), *Stability of limit cycles in a longitudinal flight of an UAV*, AIP Conference Proceedings **2046**, 020011 (2018); **(ISI Proceedings)**
2. I. Badralexi, A. Halanay (2017), Stability and oscillations in a CML model, Mathematical Problems in Engineering, Aerospace and Science, ICNPAA 2016, AIP Conference Proceedings, **1798**, 020011 (2017); doi: 10.1063/1.4972603 **(ISI Proceedings)**
3. A. Halanay, C. A. Safta , C. Dragoi , V. Piraianu (2017), Stability analysis for a delay differential equations model of a hydraulic turbine speed governor model, Mathematical Problems in Engineering, Aerospace and Science, ICNPAA 2016, AIP Conference Proceedings, 1798, 020134 (2017), doi: 10.1063/1.4972726 **(ISI Proceedings)**
4. D. Candea, A. Halanay, R. Radulescu, R. Talmaci (2017), Parameter estimation and sensitivity analysis for a mathematical model with time delays of leukemia, Mathematical Problems in Engineering, Aerospace and Science, ICNPAA 2016 AIP Conference Proceedings, **1798**, 020034 (2017); doi: 10.1063/1.4972626, **(ISI Proceedings)**
5. A. Halanay, D. Candea, R. Radulescu (2014), A model with competition between the cell lines in leukemia under treatment, ICNPAA -2014, ed. S. Sivasundaram, American Institute of Physics Proceedings 1637, 1325-1334, doi: 10.1063/1.4907296, ISBN 978-0-7534-1276-7, **(ISI Proceedings)**.
6. C. A. Safta, S. Balea, A. Halanay, M. Neamtu (2014), Parameter analysis for a mathematical model of the immune system in leukemia, ICNPAA -2014, ed. S. Sivasundaram, American Institute of Physics Proceedings 1637, 1307-1315, doi: 10.1063/1.4907296, ISBN 978-0-7534-1276-7 **(ISI Proceedings)**.
7. S. Balea, A. Halanay, M. Neamtu (2014), A feedback model for leukemia including cell competition and the action of the immune system, ICNPAA -2014, ed. S. Sivasundaram, American Institute of Physics Proceedings 1637, 1316-1324, doi: 10.1063/1.4907296, ISBN 978-0-7534-1276-7 **(ISI Proceedings)**.
8. R. Radulescu, D. Candea, A. Halanay (2012), Stability and bifurcation in a model for the dynamics of stem-like cells in leukemia under treatment, ICNPAA - 2012, ed. S. Sivasundaram, American Institute of Physics Proceedings, 1493, p. 758-763, ISBN 978-0-7354-1105-0 **(ISI Proceedings)**.
9. S. Balea, A. Halanay, D. Jordan (2012), A delay differential equations mathematical model for the immune response in leukemia, ICNPAA-2012, ed. S. Sivasundaram, American Institute of Physics Proceedings 1493, p. 67-71, ISBN 978-0-7354-1105-0 **(ISI Proceedings)**.



10. A. Halanay (2012), Periodicity in cell dynamics in some mathematical models for the treatment of leukemia, ICNPAA - 2012, ed. S. Sivasundaram, American Institute of Physics Proceedings 1493, p. 446-450, ISBN 978-0-7354-1105-0 (**ISI- Proceedings**).
11. C. A. Safta, A. Halanay, A. Ionita (2012) Analysis of the dynamics of a delay system modeling a longitudinal flight, ICNPAA - 2012, ed. S. Sivasundaram, American Institute of Physics Proceedings 1493, p. 854-858, ISBN 978-0-7354-1105-0 (**ISI- Proceedings**).
12. M. Stoia-Djeska, C. A. Safta, A. Halanay, C. Petrescu (2012), Sensitivity Analysis of Eigenvalues for an Electro-Hydraulic Servomechanism, ICNPAA - 2012, ed. S. Sivasundaram, American Institute of Physics Proceedings 1493, p. 977-982, ISBN 978-0-7354-1105-0 (**ISI- Proceedings**).
13. A. Halanay (2009), Periodic Solutions in Mathematical Models for Hematological Diseases Under Treatment, Proceedings of the 8<sup>th</sup> IFAC Workshop on Time-Delay Systems, Sept. 1-3, 2009, Sinaia, Romania
14. A. Halanay, F. Ursu, I. Ursu, S. Balea (2007), Geometric control in a regulator problem for electrohydraulic servos, IEEE Proceedings of the 15-th Mediteranean Conference on Control and Automation, Atena, 27-29 iunie (**Lucrare ISI**).
15. A. Halanay, C. A. Safta (2000), Analysis of electrohydraulic follow-up systems: an analytical approach, Fifth International Conference on Hydraulic Machinery and Hydrodynamics, Timisoara, p. 97-102.

#### **INVITED LECTURES, PAPERS PRESENTED, COLLOQUIUM TALKS**

1. I. Badralexii, A. M. Bordei, A. Halanay (2018), Stability analysis of some equilibrium points in a complex model of cells evolution in leukemia, ETAMM 2018, 18-21 iunie, Kracow, Poland.
2. A. Halanay, D. Candea (2016), A complex model for cell evolution in hematological diseases incorporating treatment, competition and the action of the immune system , XIIIeme Colloque Franco-Roumain de Mathématiques Appliquées, August 25 - August 29, 2016, Iasi, Romania.
3. I. Badralexii, A. Halanay (2016), Periodic solutions in a DDE model, XIIIeme Colloque Franco-Roumain de Mathématiques Appliquées, August 26 - August 29, 2016, Iasi, Romania.
4. I. Badralexii, A. Halanay (2016), Periodic Solutions in a Model for CML, EMERGING TRENDS ÎN APPLIED MATHEMATICS AND MECHANICS 2016, May 30 - June 3, 2016, Perpignan, France.
5. A. Halanay, I. Badralexii, S. Balea, D. Căndea, D. Jordan, R. Radulescu (2016), A Complex Model for Cell Evolution in CML Incorporating Treatment and the Action of the Immune System, EMERGING TRENDS ÎN APPLIED MATHEMATICS AND MECHANICS 2016, May 30 - June 3, 2016, Perpignan, France.
6. D. Candea, A. Halanay, R. Radulescu, R. Talmaci (2016), Estimation of Parameters in a Mathematical Model of Cell Competition in CML, EMERGING TRENDS ÎN APPLIED MATHEMATICS AND MECHANICS 2016, May 30 - June 3, 2016, Perpignan, France.

7. A. Halanay , C. Murea (2015), Compactness properties and existence of weak solutions for a fluid-structure interaction problem, IFIP TC7 Conference on System Modelling and Optimization, Sophia-Antipolis, France, 2015
8. A. Halanay, S. Balea, D. Candea, R. Radulescu (2014), L'analyse de la stabilite des equilibres des models d'evolution des cellules sanguines dans la leucemie, en considerant la competition, le traitement et l'action du systeme immunitaire, 12<sup>e</sup> Coloque Franco-Roumaine de Mathematiques Appliques, Lyon, France..
9. A. Halanay (2013), Hopf bifurcations in models for blood cells'evolution in leukemia, considering the immune response and treatment, Aniversary Conference Faculty of Sciences-150 years, 29 august-1 septembrie, Bucuresti
10. A. Halanay (2013), Periodic solutions of delay differential equations modeling leukemia under treatment, Joint International Meeting of the American Mathematical Society and the Romanian Mathematical Society, Alba-Iulia, 27-30 iunie, 2013.
11. S. Balea, A. Halanay, D. Jordan, M. Neamtu, C. Safta (2013), Modelling the immune response in leukemia, Conference in honour of Michael Mackey's 70<sup>th</sup> birthday, 3-6 iunie 2013, Lyon, Franta.
12. R. Radulescu, D. Candea, A. Halanay (2013), A delayed mathematical model for leukemia with competition and treatment, Conference in honour of Michael Mackey's 70<sup>th</sup> birthday, 3-6 iunie 2013, Lyon, Franta.
13. A. Halanay, D. Candea, R. Radulescu (2013), Hopf bifurcation in a model of leukopoiesis including asymmetric division, Conference in honour of Michael Mackey's 70<sup>th</sup> birthday, 3-6 iunie 2013, Lyon, Franta.
14. A. Halanay, D. Candea, R. Radulescu (2012), Stability analysis of equilibria in a delay differential equations of hematopoiesis including asymmetric division, 3rd International Conference of the Moroccan Society of Applied Mathematics, Marrakesh, Maroc, september, 2012.
15. S. Balea, A. Halanay, D. Jordan (2012), The immune response in leukemia; an approach with asymmetric division, 3rd International Conference of the Moroccan Society of Applied Mathematics, Marrakesh, Maroc, september, 2012.
16. R. Radulescu, A. Halanay (2012), Optimal control of drug adimistrationin a specific leukemia model, 3rd International Conference of the Moroccan Society of Applied Mathematics, Marrakesh, Maroc, september, 2012.
17. C. A. Safta, A. Halanay, A. Ionita (2012), Analysis of the dynamics of a delay system modeling a longitudinal flight, 9-th International Conference on Mathematical Problems in Engineering and Aerospace Sciences, Viena, 10-14 iulie 2012.
18. D. Candea, S. Ghica, A. Halanay, R. Radulescu, (2012), Stability analysis of equilibria in a delay differential equations model of CML including asymmetric division and treatment, 7th Workshop Structural Dynamical Systems : Computational Aspects, Bari, June 2012.
19. A. Halanay, C. Murea (2011), Shape optimization for the stationary Navier-Stokes equation, 25<sup>th</sup> IFIP TC 7 Conference on System Modelling and Optimization, Berlin, septembrie 2011.
20. A. Halanay (2010), Cell dynamics in some blood diseases under treatment, Al X-lea Colocviu Franco-Roman de Matematici Aplicate, Poitiers, Franta, 26-31 august 2010.
21. S. Balea, A. Halanay (2010), I. Ursu, Coordinate transformations and stabilization of some switched control sytems with application to hydrostatic electrohydraulic servoactuators, Al X-lea Colocviu Franco-Roman de Matematici Aplicate, Poitiers, Franta, 26-31 august 2010.
22. M. Adimy, A. Halanay (2008), Periodic solutions in mathematical models for chemoterapy action on population of tumoral cells, International Exploratory

- Workshop **Differential Equations and Applications in Life Sciences**, Iasi, 4-6 septembrie 2008.
23. A. Halanay, C. A. Safta, I. Ursu, F. Ursu (2008), Control synthesis for electrohydraulic servoactuators in a servoeelastic framework, 7-th International Conference on Mathematical Problems in Engineering and Aerospace Sciences, Genova, Italia, 23-25 iunie 2008.
  24. A. Halanay, I. Ursu (2008), Stabilization of equilibria in switching models for electrohydraulic servoactuators in a servoeelastic framework, 7-th International Conference on Mathematical Problems in Engineering and Aerospace Sciences, Genova, Italia, 23-25 iunie 2008.
  25. S. Balea, A. Halanay, F. Ursu, I. Ursu (2008), Geometric methods in control synthesis for electrohydraulic servoactuators in a servoeelastic framework, 7-th International Conference on Mathematical Problems in Engineering and Aerospace Sciences, Genova, Italia, 23-25 iunie 2008.
  26. I. Ursu, F. Ursu, A. Halanay, C. A. Safta, (2007), Equilibrium stability of a servo actuating flight controls in a servoeelastic framework, International Conference on Theory and Applications of Mathematics and Informatics, ICTAMI 2007, Alba Iulia, Romania, 2007.
  27. I. Ursu, F. Ursu, A. Halanay, S. Balea, (2007), Geometric control in a regulator problem for electrohydraulic servos, 15th Mediterranean Conference on Control and Automation, Atena, Grecia, 27-29 iunie 2007.
  28. A. Halanay, A. Ionita, (2007), Hopf bifurcations through delay in pilot reaction in a longitudinal flight, GARTEUR workshop AG 15 Pilot induced oscillations, Linkoping, Suedia, 10 mai 2007.
  29. A. Halanay, C.A. Safta, I. Ursu, F. Ursu, (2006), Stability analysis of equilibria in nonlinear models for mechano-hydraulic servomechanisms, Marrakesh World Conference on Differential Equations and Applications, Marrakesh, Maroc, 15-20 iunie 2006.
  30. A. Halanay, C.A. Safta, F. Ursu, I. Ursu, (2006), Stability analysis and tracking control synthesis of a hydraulic servo in a servoeelastic framework, 6-th International Conference on Mathematical Problems in Engineering and Aerospace Sciences, Budapesta, Ungaria, 21-23 iunie 2006.
  31. S. Balea, A. Halanay, C.A. Safta, F. Ursu, I. Ursu, (2006), Geometric Methods in Nonlinear Control Synthesis for Electro-hydraulic Servoactuators, 6-eme Conférence Internationale AIMS "Systèmes Dynamiques, Equations Différentielles et Applications" Poitiers, Franța, 25-28 iunie 2006.
  32. M. Adimy, F. Crauste, A. Halanay, (2006), Stabilité asymptotique et bifurcation de Hopf pour un modele de proliferation cellulaire. Application à des maladies hématalogiques sous traitement, Conference Francophone sur la **Modelisation Mathématiques en Biologie et en Médecine**, Craiova, 12-14 iulie, 2006.
  33. M. Adimy, F. Crauste, A. Halanay, (2006), Analyse des bifurcations pour un modèle d'évolution des cellules souches dans une maladie sanguine soumise au traitement – Al 8-lea Colocviu Franco-Român de Matematici Aplicata (**8-eme Colloque Franco-Roumain de Mathématiques Appliquées**), Chambéry, Franța, 28.08.2006-01.09.2006.
  34. S. Balea, A. Halanay, C.A. Safta, (2006), Methodes Geometriques dans la Synthese d'un Contrôle Stabilisant pour un Servomechanisme Electrohydraulique, **8-eme Colloque Franco-Roumain de Mathématiques Appliquées**, Chambéry, Franța, 28.08.2006-01.09.2006.
  35. A. Halanay, C.A. Safta, F. Ursu, I. Ursu, (2006), La synthese de la servocommande hydraulique: un nouveau point de vue, **8-eme Colloque Franco-Roumain de Mathématiques Appliquées**, Chambéry, Franța, 28.08.2006-01.09.2006.

36. A.Halanay, F.Popescu, C. A. Safta, F.Ursu, I. Ursu (2004), Stability analysis and nonlinear control synthesis for hydraulic servos actuating primary flight controls, 5-th International Conference on Mathematical Problems in Engineering and Aerospace Sciences, Univ. Timisoara, p.14.
37. A.Halanay, C. A. Safta, I. Ursu (2002), Modeles nonlineaires des servomechanismes mecano-hydrauliques et etude de la stabilite de certaines solutions, **Sixieme Colloque Franco-Roumaine de Mathematiques Appliquees**, Univ.Perpignan, p. 121.
38. A.Halanay (2002), Controlled factorisation for commuting pairs of contractions with thin spectrum, a **XIX-a Conferinta Internationala de Teoria Operatorilor**, Univ.Timisoara.
39. A.Halanay (1998), Controlled (Am) property and invariant subspaces , a **XVII-a Conferinta Internationala de Teoria Operatorilor**, Univ.Timisoara.
40. A.Halanay (1996), Factorization and invariant subspaces for contractions, a **XVI-a Conferinta Internationala de Teoria Operatorilor**, Univ.Timisoara.
41. A.Halanay (1989), An approach to the invariant subspace problem for contractions in Hilbert spaces, a **XII-a Conferinta Internationala de Teoria Operatorilor**, Univ. Timisoara.

### RESEARCH GRANTS-Director

1. Qualitative study of differential equations with time lag with applications to modeling and simulation of leukemia treatment, CNCS, PN II-ID-PCE-3-0198, 2011-2016.
2. Stability and control for ordinary differential equations and for delay differential equations with applications in biology and engineering, CNCSIS 84, 2007, 2008.
3. Stability, bifurcations and control: qualitative aspects in the study of some nonlinear models from engineering, biology and economy, CNCSIS 280, 2005, 2006.
4. Stability, bifurcations and control for delay differential equations in models of population dynamics, Romanian-French grant in the “Brancusi” programme., 2005, 2006.
5. Structure theorems and ergodic theorems for Banach space contractions, CNCSIS 2002.

### EUROPEAN FINANCED GRANTS -Romanian team member

1. Investigation and Mathematical Analysis of Avant-garde Disease Control via Mosquito Nano-Tech-Repellents (IMMAC) CA 16227, COST 038/18, (2017-2021).