Europass Curriculum Vitae

Personal information

First name(s) / Surname(s)

Achim IONIŢĂ

Address(es)

Telephone(s) +40 21 434 0169

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Nationality Romanian

Date of birth

Gender Male

Work experience

Dates	January 2015 - present
Occupation or position held	Senior Researcher
Main activities and responsibilities	Research Management , Research
Name and address of employer	INCAS -National Institute for Aerospace Research "Elie Carafoli"

Dates	October 2007 – December 2014
Occupation or position held	Scientific Director
Main activities and responsibilities	Research Management , Research
Name and address of employer	S.C. STRAERO S.A. (Institute for Theoretical and Experimental Analysis of Aeronautical Structures)

Dates	July 1998 - October 2007
Occupation or position held	General Manager
Main activities and responsibilities	Management , Research
Name and address of employer	S.C. STRAERO S.A. (Institute for Theoretical and Experimental Analysis of Aeronautical Structures)

Dates	September 1995 - July 1998
Occupation or position held	Scientific Director
Main activities and responsibilities	Research Management , Research
Name and address of employer	INCAS (National Institute for Aerospace Research), Bucharest

Dates	June 1991 - September 1995
Occupation or position held	Technical Director
Main activities and responsibilities	Research Management, Research
Name and address of employer	IMFDZ (Institute for Fluid Mechanics and Flight Dynamics), Bucharest

Dates	April 1990 - June 1991
Occupation or position held	Head of A 0 Depart. (Aerodynamics, Flight Dynamics and Control System)
Main activities and responsibilities	Research Management, Research
Name and address of employer	INCREST (National Institute for Scientific and Technical Scientific and Technical Creation), Bucharest
Dates	April 1973 - April 1990
Occupation or position held	Senior researcher, Researcher
Main activities and responsibilities	Researcher and design activities in Flight Dynamics, Flying Qualities and Flight Control Systems
Name and address of employer	INCREST and IMFCA (Institue for Fluid Mechanics and Aerospace Researches), Bucharest
Dates	August 1970 - April 1973
Occupation or position held	Engineer
Main activities and responsibilities	Design and testing of hydraulic and pneumatic equipments
Name and address of employer	IRAv Bacau (Aircraft Repairing Factory), Hydro-pneumatic Div.

Education and training

Dates	1991 -1996
Title of qualification awarded	PhD in Aerospace Science
Principal subjects/occupational skills covered	Thesis Title: "Flying Qualities of Aircraft with Delay in Control"
Name and type of organisation providing education and training	Polytechnic University of Bucharest
Level in national or international classification	PhD
Dates	1976 -1980
Title of qualification awarded	Licence in Economy
Name and type of organisation providing education and training	Academy of Economic Studies – Faculty of International Economical Relations
Level in national or international classification	BA
Dates	1964 -1970
Title of qualification awarded	Engineer
Name and type of organisation providing education and training	Polytechnic Institute of Bucharest, Faculty of Mechanics
Level in national or international classification	BA

Personal skills and competences

Mother tongue(s) **Romanian**

Other language(s)

Self-assessment

European level (*)

	Understanding		Speaking		Writing
	Listening	Reading	Spoken interaction	Spoken production	
English	C2	C2	B2	C2	C2
Russian	A2	A2	A2	A2	C2
German	A2	A2	A2	A2	C2
Spanish	A2	A2	A2	A2	A2

Technical skills and competences	- Mathematical Modeling and Computations in Aerospace Vehicles (fixed wing, rotary wing, hot air balloon, spacecraft, UAV, Air Cushion Robots) Flight Dynamics, Road and Water Vehicle Motion - Rendezvous and Docking processes - Requirements and Military/Civil Standards in Flying Qualities, Pilot Training Courses - HMI, man – machine couplings, A/RPC couplings - Fluid – structure interaction - R&D performance criteria and requirements used in design, testing and manufacturing of high-technologies equipments - R&D, Testing of Flight Control Systems, Mechatronic Equipments, HVAC Systems, ABS system for Road Vehicle - Economic Prognosis and Analysis, Technical Expertise, Development Strategies, Companies Evaluation, HR Evaluation 1st Grade Scientific Researcher, attested by Ministry of Education and Research Expert CNCSIS Evaluator in the fields of Flight Dynamics, Flight Control and Flying Qualities
Computer skills and competences	MS Office, FORTRAN, MATLAB / SIMULINK, FLIGHTLAB
Driving licence	Yes, B

Additional information

Annexes:

Professional Leadership
Member of international scientific organization

AIAA Senior Member, IEEE Senior Member

Patents

Hydraulic Breaker - C. I. No. 000948, 1994
       Authors: A. Ionita, G. Anton, I. Constantinescu, G. Budurea, E. Ciobanu

Publications

Books and Professional Journal Publications

1. **A. Ionita** – Flight Dynamics with Delay in Control (in Romanian - *Dinamica avionului cu intarzieri)*, Editura Academiei Tehnice Militare, ISBN - 978 - 640 - 177 - 0, 196 pag., Bucuresti 2009
2. T. Hacker, **A. Ionita**, M.Perhinschi, S. Radnef, M. Neamtu, C. Dorobat – IAR 99 Flight Dynamics (in Romanian - *Dinamica zborului Avion IAR 99)*, Editura Academiei Tehnice Militare, ISBN - 973 - 640 - 174 - 9, 160 pag., Bucuresti 2009

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1. **A. Ionita** - Influenta intârzierii raspunsului asupra stabilitatii avionului relaxat static longitudinal (Studii si Cercetari de Mecanica Aplicata - Ed. Acad. RSR1 tomul 43 ian.- feb. 1984);
2. **A. Ionita** - Series : "Termeni si simboluri din mecanica zborului" , titled : Marimi utilizate in masuratori (STAS 10276/4 76)
3. **A. Ionita** - Series : "Termeni si simboluri din mecanica zborului" , titled : Parametrii folositi in studiul stabilitaatii si manevrabilitatii avioanelor (STAS 10276/3 75) ;
4. **A. Ionita** - Series : "Termeni si simboluri din mecanica zborului" , titled : Derivatele fortelor, momentelor si coeficientilor (STAS 10276/2- 75);
5. St. Balint, Agneta M.Balint and **A. Ionita**, Oscillation Susceptibility Analysis of the ADMIRE Aircraft along the Path of Longitudinal Flight Equilibrium in two different Mathematical Models, Hindawi Publishing Corporation, Differential Equations and Nonlinear Mechanics, Volume 2009, article ID 842656, 26 pages
6. St. Balint, Agneta M. Balint and **A. Ionita** – Oscillation susceptibility analysis along the path of longitudinal flight equilibrium in ADMIRE model, Journal of Aerospace Engineering ASCE, October 2009
7. St. Balint, E. Kaslik, Agneta M. Balint, **A. Ionita** – Oscillation susceptibility analysis along the path of longitudinal flight equilibrium, Nonlinear Analysis 21(2009) e35-e54
8. A. Halanay, **A. Ionita**,C. A. Safta – Hopf bifurcation throgh delay in pilot reaction in a longitudinal flight, Nonlinear dynamics (2010) 60:413-423
9. A. Halanay, A. **Ionita** – Existence and stability of periodic motion in some roll - coupling dynamics of an aircraft, Proceedings of the Romanian academy, Series A, Vol.11, Number 2/2010, pp.103-107

10. **A. Ionita** – Trigger event – a key factor in adverse Aircraft/Rotorcraft Pilot Couplngs, INCAS Bulletin, Vol. 4, Issue3/2012, pp. 3-18, ISSN 2066-8201

11. M. D. Pavel, M. Jump, B. Dang-Vu, P. Masarati, M. Gennaretti, **A. Ionita**, L. Zaichik, H. Smaili, G. Quaranta, D. Yilmaz, M. Jones, J. Serafini, J. Malecki, "Rotorcraft Pilot Couplings - Past, Present and Future Challenges", Progress in Aerospace Sciences, October 2013, 62:1-51, doi:10.1016/j.paerosci.2013.04.003.

12. Marilena D.Pavel , PierangeloMasarati , Massimo Gennaretti , Michael Jump , Larisa Zaichik , Binh Dang-Vu , Linghai Lu , DenizYilmaz , Giuseppe Quaranta , Achim Ionita , Jacopo Serafini – "Practices to identify and preclude adverse Aircraft-and-Rotorcraft-Pilot Couplings – A design perspective", Progress in Aerospace Sciences, htpp://dx.doi.org/10.1016/j,paerosci.2015.05.002

13. Marilena D.Pavel , Michael Jump, Pierangelo Masarati, Larisa Zaichik, Binh Dang-Vu, Hafid Smaili, Giuseppe Quaranta, Olaf Stroosma, Deniz Yilmaz, Michael Johnes, Massimo Gennaretti, Achim Ionita – "Practices to identify and prevent adverse Aircraft-and-Rotorcraft-Pilot Couplings – A ground simulator perspective", Progress in Aerospace Sciences, htpp://dx.doi.org/10.1016/j,paerosci.2015.06.007

14. Achim IONITA, Ionel POPESCU, Attitude Dynamics and Tracking Control of Spacecraft in the Presence of Gravity Oblateness Perturbations, pp. 85-97 DOI: 10.13111/2066-8201.2016.8.1.9 ; http://dx.doi.org/10.13111/2066-8201.2016.8.1.9

15. Achim IONITA, Andrei LUNGOCI, Ion TOMESCU, Quad Performances and Manoeuvrability of TWQH platform, pp. 63-78, https://doi.org/10.13111/2066-8201.2022.14.4.6

16. Achim IONIȚĂ, Sandra NICHIFOR "AUTONOMOUS AEROSPACE TECHNOLOGIES IN SPACESYSLAB – A ROBOTIC-BASED RENDEZVOUS AND DOCKING SYSTEM", REVISTA ACADEMIEI FORTELOR TERESTRE, Cod CNCS 328, ISSN 2247-840X, ISSN-L 1582-6384, DOI: 10.2478/raft-2022-0043, NR. 4 (108)/2022

Papers and professional Conference and Reports

1. A. Halanay, **A. Ionita**, V. Rasvan - Stability and Maneuverability Analysis of the Vehicle with four wheel steering system, IEEE, CSS Conference, Glasgow, 1994, WA-4-3 IEEE CN 94CH3420-7

2. **A. Ionita** - Delayed Control in Short Period Aircraft Motion, Conference of Functional Differential Equation,Moscow,1994

3. **A. Ionita** - SAS-Design in Presence of Input Delay, ICIAM-95, Hamburg , 1995

4. **A.Ionita**, I.Ursu - " Asupra sensibilitatii suspensiilor active". Conferinta internationala de sisteme hidropenumatice de actionare, 19-20 oct.1995, Timisoara.

5. **A. Ionita** - Input Delay Investigation in the Short Period Flying Qualities Criteria AIAA Atmospheric Flight Mechanics Conference, 1996 San Diego, USA 96-3424, ISBN – 1-56347-216-3

6. **A. Ionita** - A Liapunov Functional for Fast Modes of Aircraft Motion, IEEE-SMC, CESA'96 IMACS Multiconference, Lille, France, ISBN – 2-9510266-0-9

7. **A. Ionita** - Active Control - a Transfer Way of Technology between Aerospace and Automotive Industries, SINTES 8, Craiova, june 1996, Automatica & Robot Control

8. **A. Ionita**, A. Halanay - Delayed Induced Oscillations, AIAA Atmospheric Flight Mechanics Conference, 1997, New Orleans, LA , ISBN – 1-56347-235-X

9. **A. Ionita** - Some Qualities Aspects about Pilot Induced Oscillations Phenomena, "Nonlinear Systems Modeling Physical Phenomena "- International Conference, 1997 Timisoara

10. **A. Ionita**, V. Dragan – Stabilization of Singularly Perturbed Linearly Systems with Delay and Saturating Control – MED'99, Haifa, Israel

11. **A. Ionita**, V. Rasvan –Delay and Saturation in Controlled Aircraft Dynamics (Stability and Oscillation) - ECC '99, Karlsruhe, Germany

12. **A. Ionita**, V. Dragan – Stabilization of singularly perturbed linear systems by state feedback with delay – MTNS 2000, Perpignan, France

13. **A. Ionita**, V. Dragan – La stabilisation d'un systeme lineaire a perturbation singuliere par feedback avec saturation et retard - CIFA2000, Lille, France

14. Stoica, V. Dragan, **A. Ionita** –Robust Approach for Pilot-Induced Oscillation Detection – Fifth International Conference on Mathematical Problems in Engineering and Aerospace Sciences, 2005, Timisoara, ISBN – 1-904868-7

15. **A.Ionita** -   Aircraft Manoeuvers including Nonlinear Aerodynamics and Inertial Coupling, Workshop GARTEUR Flight Mechanics, Systems and Integration Action Group FM (AG-15): Pilot-in-the-Loop Oscillations Analysis and Test Techniques for their Prevention PHASE – II, 17 January, 2006, FOI, Stockholm, Sweden

16. **A.Ionita**, N. Anton - Stability of the Controlled Steady Rolling, Meeting GARTEUR Flight Mechanics, Systems and Integration Action Group FM (AG-15): Pilot-in-the-Loop Oscillations Analysis

and Test Techniques for their Prevention PHASE – II , 28 March 2006, Braunschweig, DLR ,Germany

17. **A. Ionita**, N. Anton - Solutions with Periodic Components , Meeting GARTEUR Flight Mechanics, Systems and Integration Action Group FM (AG-15): Pilot-in-the-Loop Oscillations Analysis and Test Techniques for their Prevention PHASE – II, 13-14 September, 2006,NLR Amsterdam

18. **A. Ioniţă**, St. Balint, A.M. Balint - A PIO susceptibility analysis following the path of the longitudinal flight equilibriums for ADMIRE dynamics, Workshop GARTEUR Flight Mechanics, Systems and Integration Action Group FM (AG-15): Pilot-in-the-Loop, Oscillations Analysis and Test Techniques for their Prevention PHASE – II , 10 May 2007, SAAB, Linköping

19. **A. Ionita**, A. Halanay - Hopf bifurcation through delay in pilot reaction in flight dynamics, Workshop GARTEUR Flight Mechanics, Systems and Integration Action Group FM (AG-15): Pilot-in-the-Loop, Oscillations Analysis and Test Techniques for their Prevention PHASE – II ,10 May 2007, SAAB, Linköping

20. **A. Ionita**, A. Halanay - Existence and stability of periodic motion for some aircraft dynamics, Workshop GARTEUR Flight Mechanics, Systems and Integration Action Group FM (AG-15): Pilot-in-the-Loop, Oscillations Analysis and Test Techniques for their Prevention PHASE – II , 10 May 2007, SAAB, Linköping

21. **A. Ionita**, S. Radnef, I. Popescu – Integrated Modelling Concepts of Helicopter Dynamics considering Body Rotor Couplings for Multidisciplinary Design Optimization and Flying Qualities, International Aerospace Conference, 2010, Bucharest

22. M.D. Pavel, P. Booij, S. Radnef, **A. Ionita**, J.-F. Boer, "First Steps towards Certification of the IAR-330 Puma Naval for Helicopter-Ship Operations – Sketches from the Work of The Romanian- Dutch Centre of Knowledge in Aeronautics" 33rd European Rotorcraft Annual Forum, 11-13 September, 2007, Kazan, Russia

23. MD. Pavel, J. Malecki, Binh Dang Vu, P. Masarati, M. Gennaretti, M. Jump, M. Jones, **A. Ionita,** H. Smaili, L. Zaicek, "Present and Future Trends in Aircraft and Rotorcraft Pilot Couplings – a Retrospective Survey of Recent Research Activities within the European project ARISTOTEL", European Rotorcraft Forum 2011, 13-15 September 2011, Gallarate, Italy

24. MD. Pavel, J. Malecki, Binh D. Vu, P. Masarati, M. Gennaretti, M. Jump, **A. Ionita,** H. Smaili, L. Zaicek, "Aircraft and Rotorcraft Pilot Coupling: a survey of recent activities within the European project ARISTOTEL", CEAS 2011, 3rd CEAS Air&Space Conference, 21st AIDAA Congress

25. Pavel, M.D., J. Malecki, Binh Dang Vu, P. Masarati, M. Gennaretti, M. Jump, H Smaili, **A. Ionita**, L. Zaicek , "A Retrospective Survey of Adverse Rotorcraft Pilot Couplings in European Perspective", American Helicopter Society 68th Annual Forum, Fort Worth, Texas, May 1-3, 2012,

26. A. Floarea, **A. Ionita**, - "PIO(Pilot Induced Oscillations) Criteria for Rotorcraft Pilot Coupling (RPC) in roll axis", Aerospatial 2012, International Conference of Aerospace Science, Bucharest, 11-12 October, National Institute for Aerospace Research „Elie Carafoli"

27. M. Gennaretti, M. Molica Colella, J. Serafini, B. DangVu, P. Masarati, G. Quaranta, V. Muscarello, M. Jump, M. Jones, **A. Ionita**, I. Fuiorea, M. Mihaila-Andres, S. Radu, "Anatomy, Modelling and Prediction of Aeroservoelastic Rotorcraft-Pilot-Coupling", *39th ERF*, Moscow, Russia, September 3-6, 2013.

28 A. Afloare, A. Ionita, Analysis of IAR 330 PUMA aero-servo-elastic (ASE) model, Proceedings of the International Conference of Aerospace Sciences "AEROSPATIAL 2014", pp.139-151, 18-19 September 2014, Bucharest, Romania, ISSN 2067-8614

29   A. Afloare, A. Ionita, Prediction of the handling qualities and pilot-induced oscillation rating levels, INCAS Bulletin, Vol. 6, Special Issue1, pp.3-13, 2014, DOI:10.13111/2066-8201.2014.6.S1.1, http://dx.doi.org/10.13111/2066-8201.2014.6.S1.1

30 A. Ionita, I. Popescu, Attitude Dynamics and Tracking Control of Spacecraft in the Presence of Gravity Oblateness Perturbations, Bulletin INCAS, pp. 85-97, 2016, DOI:10.13111/2066-8201.2016.8.1.9; http://dx.doi.org/10.13111/2066-8201.2016.8.1.9

31 M. D. Pavel, A. Ioniţă - HelicopterRoll-Axis Instabilities induced by Pilot Cyclic Control: A Phisical Explanation, INCAS Buletin vol.10 July-Sept. 2018, p.139-156

32 I.-B. Ștefănescu, A.-I. Afloare, A. Ioniță – "Validation of a helicopter turbulence model on PUMA 330 dynamics", International Conference of Aerospace Sciences „AEROSPATIAL 2018", published in INCAS BULLETIN, vol. 11, Issue 1, pp. 179–187, 2019.

33 Thien Van Nguyen, Ana-Maria Bordei, Trang Minh Nguyen, Achim Ionita, Using PID Controller and SDRE methods for tracking control of Spacecrafts in Closed-Rendezvous Process, INCAS BULLETIN, Volume 11, Issue 1/ 2019, pp. 139–150, ISSN 2066-8201, DOI: 10.13111/2066 8201.2019.11.1.11

34 Achim Ioniță, Dragoș Daniel Guță, Marina Andrei, Thien Van Nguyen, Nicolae Apostolescu, Andrei Lungoci, Ștefan STOIAN, Sandra Elena Nichifor, Air Cushion Robots Ground Testing Bed Experiments and Control Algorithm for Autonomous Rendezvous and Docking, IJMO, vol. 9, nr. 5, oct.2019, pp.277-284, ISSN 2010-3697.

35 Nicolae APOSTOLESCU, Tom SAVU, Dragos GUTA, Achim IONITA Industrial Robotics for Spacecraft Rendezvous and Docking Simulation, INCAS BULLETIN, Volume 11, Issue 4 /2019 was published on 8 December, 2019 . pp. 27-36, DOI: 10.13111/2066-8201.2019.11.4.3;

Research project and degree of involvement	https://doi.org/10.13111/2066-8201.2019.11.4.3 36 Florin Costache, Sandra-Elena NICHIFOR, Mihaela-Luminița COSTEA, Achim IONIȚĂ Automatic approach procedure of a flying vehicle on a mobile platform using backstepping controller, The 39th "Caius Iacob" Conference on Fluid Mechanics and its Technical Applications, 28 - 29 October, 2021 37 Florin COSTACHE, Sandra-Elena NICHIFOR, Nicolae APOSTOLESCU, Mihaela-Luminita COSTEA, Achim IONITA, Real-Time interaction between an ABB 7600 Robot and a Stewart Platform, 19th International Conference of Numerical Analysis and Applied Mathematics, Rhodos, Greece, 20-26 september 2021

- Supersonic Aircraft Program - IAR 95 / INCREST, responsible for Aerodynamics, FlightDynamics and Flight Control System august 1980 – April 1983
- Short – Medium Currier Aircraft Program IAR 705/ INCREST, responsible for Aerodynamics, Flight Dynamics and Flight Control System, Mai 1984– May 1986
- Hot Air Balloon class AMX6 Program / IMFDZ, INCAS, Coordinator   1992-1998
- ABS Anti Braking System Experimental Model for ARO -240, Dacia Nova / IMFDZ Program Coordinator 1991-1996
- GARTEUR (Group for Aeronautical Research and Technology in EURope) FM – AG 15 (Flight Mechanics – Action Group); Pilot in the Loop Oscillations – Analysis and Test Techniques for their Prevention, Phase 2, 2004 – 2006   Responsible for IQC and Bifurcation methods on nonlinear aerodynamics and inertial couplings problem
- AEROSPATIAL – 41015 Methods of analyses and techniques of evaluation for pilot – aircraft prevention, PREVPIO, 2004 – 2006, project coordinator
- CEEX – 4744, 64/2006 Pilot – Helicopter Coupling Prevention (Man – Machine) in critical maneouvers on board of marine platform and ships, project coordinator, ELICOMNAV, 2006 – 2008
- FP7 ARISTOTEL Collaborative Project, ARISTOTEL,"Aircraft and Rotorcraft Pilot Couplings (A/RPC) – Tools and Techniques for Alleviation and Detection", ACPO-GA-2010-266073, 2010 -2013
- STAR – 95/29.11.2013   Instructor Operation Station for space application",2014-2015, partner of UTCN Cluj
- Space System Laboratory for Orbital Mission –"SpaceSysLab", POC A-1.1.1, Ctr. Nr. 141/2016, 2016-2018
- STAR – Guidance, Navigation and CONtrol TECHnologies for SATellite Systems, Ctr. Nr. 117/2016, 2016-2019, Project manager
- ALAMOPLAT – Automatic LAnding on Mobile PLATform Contract nr.117/14.11.2016 (PN 8N/2019 - 2022)