

Andrés Marcos Esteban

Nationality: Spain
Professional Web page: <http://www.tasc-group.com/>

University Walk, Queen's Building
Bristol, BS8 1TR, UK
Phone: +44 (0) 117 95 45607
Email: andres.marcos@bristol.ac.uk

In blue done at University of Bristol (from Oct 2013 onwards)

EDUCATION

B.Sc. Aerospace Engineering (4 years degree) *Cum Laude* Dec 1997
St. Louis University, St. Louis, USA.

M.Sc. Aerospace Engineering (2 years degree) Jan 2001
Thesis: "A Linear Parameter Varying Model of the Boeing 747-100/200 Longitudinal Motion".
University of Minnesota, Minneapolis, USA. Supervisor: Dr. Gary Balas

Ph.D. Aerospace Engineering (3 years degree) *GPA: 3.447 / 4.000* Feb 2004
Thesis: "Aircraft Applications of Fault Detection and Isolation Techniques".
University of Minnesota, Minneapolis, USA. Supervisor: Dr. Gary Balas.

WORK & RESEARCH EXPERIENCE

Under-Graduate Research Assistant Jun 1996 –
St. Louis University, St. Louis, Mo, USA May 1997
Aerospace and Mechanical Engineering Department
Design, construction and water/wind-tunnels testing of a scaled flexible empennage for a High-Speed Civil Transport aircraft for buffet identification studies.

Graduate Research Assistant Jun 1999 –
University of Minnesota, Minneapolis, MN, USA Dec 2003
Aerospace Engineering and Mechanics Department
Work funded by NASA's Aviation Safety Program (AvSP). Responsibilities: research on linear parameter varying (LPV) modeling techniques; R&D on fault detection & isolation (FDI) and fault tolerant control (FTC) algorithms based on H_∞ /LPV/coprime factorization; Development of a software package for nonlinear simulation, analysis and visualization of a Boeing 747 aircraft.

Engineering Research Fellow Jun 2003 –
Honeywell Labs, Minneapolis, MN, USA Dec 2003
Engine Systems & Services – Vehicle Health and Logistics Management Lab
Participate in Honeywell's Predictive Trend Monitoring (PTM) project. Responsibilities: study and application of robust model identification and residual generation algorithms to a turbofan engine manufactured by Honeywell Inc. using real continuous-time aero-data provided by airline partners.

Post-Doctoral Research Fellow Feb 2004 –
University of Leicester UK Dec 2005
Control & Instrumentation Group
Participant in the Group for Aeronautical Research and Technology in Europe (GARTEUR) Action Group 17: "Nonlinear Analysis and Synthesis Techniques in Aircraft Control." Responsibilities: development of a new symbolic algorithm for reduced-order linear fractional transformation modeling of nonlinear systems and a novel systematic method for uncertainty modeling based in μ sensitivities and skewed μ ; Application to an AIRBUS on-ground aircraft benchmark.

Senior Engineer / Jan 2006 →
Project Manager / Oct 2007 →
Leader Control Systems Center of Competence Jan 2012 →
Deimos-Space S.L.U., Spain Aug 2013
Aerospace Engineering Business Unit – Flight Mechanics AA
Control leader of advanced control, fault detection and autonomous systems for R&D projects with the European Space Agency (ESA) and the European Commission (FP7 & H2020 programs).

Senior Lecturer Oct 2013 →
University of Bristol *present*
Aerospace Engineering Department
Main interests are the research and application of robust control techniques (H_∞ , μ , linear parameter varying (LPV)) for aerospace vehicles: flight control, FDI/FTC and V&V.

FUNDING [Total: 41M€; As Coordinator + PI: 10.8M€ + 15.3M€; to my organizations: 7.4M€**At UoB → Participant in projects totalling 10.8M€; As PI: 1.3M€; to the university: 1.3M€]**

Principal Investigator (PI) versus Project Coordinator (PC), the latter when PI of full project in a multi-team project

- | | | |
|----|--|---------------------------|
| 1 | “HEALTH MANAGEMENT SYSTEM FOR REUSABLE SPACE TRANSPORTATION (HMS)”
ESA/ESTEC contract managed by Astrium-Space Transportation: 700,000 Euros
Proposal responsibilities: Designated key technical leader in Deimos team. | Jan 2006 |
| 2 | “LINEAR PARAMETER VARYING MODELING, ANALYSIS AND DESIGN (LPVMAD)”
ESA/ESTEC contract managed by Deimos Space: 300,000 Euros ¹
Proposal responsibilities: Proposal technical lead & project coordinator (PC).
Consortium partners: prof. Carsten Scherer, Delft Technical University (The Netherlands); Dr. Declan Bates, University of Leicester (UK); prof. József Bokor, SZTAKI (Hungary). | May 2007
PC |
| 3 | “MODERN CONTROL TECHNIQUES APPLIED TO SATELLITE FDIR (SATFDI)”
ESA/ESTEC contract managed by Astrium-France: 350,000 Euros (100,000 Euros)
Proposal responsibilities: Deimos’ PI and team manager (including partnership with Dr. Christopher Edwards from University of Leicester, U.K.). | May 2008
PI |
| 4 | “ADVANCED FAULT DIAGNOSIS FOR SUSTAINABLE FLIGHT GUIDANCE AND CONTROL (ADDSAFE)” (Proposal evaluation grade and rank: 13/15 and 18 th /223)
European FP7 CP-FP contract managed by Deimos Space: 4,280,357 Euros
Proposal responsibilities: Consortium, proposal and project coordinator.
Consortium partners: Airbus (France); DLR (Germany); University of Hull (U.K.); University of Leicester (U.K.); CNRS-IMS (France); Delft Technical University (The Netherlands); SZTAKI (Hungary). | Oct 2008
PC |
| 5 | “ADVANCED RE-ENTRY FLYING QUALITIES ANALYSIS FRAMEWORK (FQFW)”
ESA/ESTEC contract managed by Deimos Space: 300,000 Euros (150,000 Euros) .
Proposal responsibilities: Proposal technical lead for the analysis framework component
Consortium partners: EADS-Astrium (France) and University of Leicester (U.K.) | Feb 2009 |
| 6 | “MAIN STAGE PROPULSION TECHNOLOGY HEALTH MONITORING SYSTEM ACTIVITIES (FLPP-HMS)”
Sub-contract by Snecma, France, within the FLPP ESA activities: 90,000 Euros
Proposal responsibilities: Deimos, proposal & project, technical lead. | Jul 2009 |
| 7 | “MAIN STAGE PROPULSION TECHNOLOGY PERIOD 2 HMS ACTIVITIES (SCORE-FDI)”
Sub-contract by Snecma, France, within the FLPP ESA activities: 100,000 Euros
Proposal responsibilities: Deimos, proposal & project, technical lead. | Jul 2010 |
| 8 | “ROBUST FLIGHT CONTROL SYSTEM DESIGN VERIFICATION&VALIDATION FRAMEWORK (RFCS)”
ESA/ESTEC contract managed by Deimos Space: 450,000 Euros
Proposal responsibilities: Consortium proposal technical manager & Consortium project manager.
Consortium partners: ELV (Italy), DLR (Germany) and A3R (Italy) | Jun 2010
PC |
| 9 | “UAV BASED SPACE TECHNOLOGY INVESTIGATION (PERIGEO)”
Spanish INNPRONTA CDTI contract managed by Deimos Space: 18,000,000 Euros
Proposal responsibilities: WP2 “Advanced Control” coordinator (4,000,000 Euros).
Consortium partners [<i>* WP2 participants</i>]: GMV*, Embention*, Aerlyper*, AD Telecom*, INTA*, CATEC*, University of Seville*, Geomatic Institute*, Ixion, Aernnova, SCR, TCP, Carlos III University, Madrid Polytechnic University, IMDEA, CTA, ITER and Parafly | Dec 2011
WP2-PC |
| 10 | “Workshop on Industrial and Academic Experience in Aerospace Fault Detection and Diagnosis”
IEEE Control System Society Outreach Fund award: 28,000 US Dollars
For organization of an International Workshop at Airbus, Toulouse | Jan 2012
PI |
| 11 | “RECONFIGURATION OF CONTROL IN FLIGHT FOR INTEGRAL GLOBAL UPSET RECOVERY (RECONFIGURE)” (Proposal evaluation grade and rank: 14/15 and 9 th /129)
European FP7 CP-FP contract managed by Deimos Space: 5,579,613 Euros
Proposal responsibilities: Consortium, proposal and project coordinator.
Consortium partners: Airbus (France); DLR (Germany); ONERA (France); SZTAKI (Hungary); Delft Technical University (The Netherlands); University of Exeter (U.K.); University of Cambridge (U.K.). | Mar 2012
PC |
| 12 | “ANALYTIC STOCHASTIC & TIME VARYING MU ANALYSIS FOR THE VEGA GNC (VVProb)”
ESA/ESTEC EXPRO TRP: 60,000 Euros (*University Consultancy*)
Responsibilities: study advanced probabilistic and time varying analysis based on structured singular value (mu) and their application to the European VEGA launcher (using a high-fidelity nonlinear simulator). | Jun 2014
PI |

¹ **Shaded amounts** indicate funding directly obtained by me as principal investigator (PI) or if in a multi-partner project, then as proposal lead and project coordinator (PC) or the amount allotted to my organization as result of being my organization PI.

- | | | |
|----|--|-----------------------|
| 13 | <p>“ROBUST & ADAPTABLE LAUNCHER TVC CONTROL SYSTEMS FOR THE VEGA EVOLUTION (VEGAdapt)” ESA-ESTEC Network Partnering Initiative: 90,000 Euros
 Funding of a PhD student for 3.5 years, including 6 months visit to ESA-ESTE and collaboration with ELV (an Italian space company in charge of VEGA)</p> | Jun 2015
PI |
| 14 | <p>“FLUTTER FREE FLIGHT ENVELOPE EXPANSION FOR ECONOMICAL PERFORMANCE IMPROVEMENT (FLEXOP)”
 European H2020 Aeronautics contract coordinated by SZTAKI: 6,692,164 Euros (649,968 Euros)
 Proposal responsibilities: Proposal leader for WP2 (control) and UoB Principal investigator.
 Consortium: SZTAKI (Hungary); Airbus Group Innovations (Germany and UK); DLR (Germany); FACC GmbH (Austria); INASCO (Greece); Technical University of Munich (Germany); Delft Technical University (The Netherlands); University of Bristol (UK) and RWTH Aachen University (Germany).</p> | Jun 2015
PI |
| 15 | <p>“ANALYTIC STOCHASTIC & TIME VARYING MU ANALYSIS FOR THE VEGA GNC (VVPProb2)”
 ESA/ESTEC EXPRO TRP: 30,000 Euros (*University Consultancy*)
 Responsibilities: control design and advance analysis of VEGA launcher VV05 flight.</p> | Aug 2015
PI |
| 16 | <p>“VALIDATION INTEGRATED SAFETY-ENHANCED INTELLIGENT FLIGHT CONTROL (VISION)”
 EU H2020 Mobility-for-Growth contract coordinated by ONERA: 3,621,630 Euros (350,126 Euros)
 Proposal responsibilities: Core team and UoB Principal investigator.
 European Consortium: ONERA (France), University of Bristol (UK), University of Exeter (UK), SZTAKI (Hungary), Unmanned Solutions (Spain), DASSAULT AVIATION (France); Japanese Consortium: University of Tokyo, Japan Aerospace Exploration Agency (JAXA), RICOH Company Ltd., MITSUBISHI Space Software Company Ltd., Electronic Navigation Research Institute (ENRI)</p> | Jan 2016
PI |
| 17 | <p>“ROBUST NONLINEAR GUIDANCE AND CONTROL FOR LANDING ON SMALL BODIES”
 National Space Technology Programme 2 (NSTP-2) UK Space Agency project led by Airbus D&S (Stevenage): 110,000 GBP (55,000 GBP). Proposal resp.: Core team and UoB Principal investigator.</p> | Apr 2016
PI |
| 18 | <p>“ADVANCED FLIGHT CONTROL SYSTEM DESIGN WITH ACTIVE LOAD & RELIEF CAPABILITIES” German Aerospace Center (DLR) project led by DLR (Bremen) part of an ESA-ESTEC Network Partnering Initiative: 90,000 Euros. Proposal resp.: Core team and UoB Principal investigator.</p> | Feb 2017
PI |

INTERNAL AWARDS [not counted in the above funding summary]

- | | | |
|---|---|-----------------------|
| 1 | <p>“ROBUST & ADAPTABLE LAUNCHER TVC CONTROL SYSTEMS FOR THE VEGA EVOLUTION (VEGAdapt)” Fees only UoB EPSRC DTP for Mr. Diego Navarro-Tapia (Spain): 14,182 GBP</p> | Mar 2015
PI |
| 2 | <p>“ADVANCED FLIGHT CONTROL DESIGN WITH ACTIVE LOAD AND RELIEF CAPABILITIES”
 Fees only UoB EPSRC DTP for Mr. Pedro Simplício (Portugal): 14,182 GBP</p> | Mar 2016
PI |
| 3 | <p>“RESILIENT DESCENT & LANDING DESIGN AND ANALYSIS FOR SPACECRAFT EXPLORATION” Full UoB EPSRC DTP for Mr. Henri French (UK): 63,000 GBP</p> | Mar 2017
PI |

UNSUCCESSFUL BUT RELEVANT PROPOSALS [not counted in the above funding summary]

- | | | |
|---|---|-----------------------------------|
| 1 | <p>“DEMONSTRATION OF GNC TECHNOLOGIES FOR REUSABLE LAUNCH VEHICLES (PATHFINDER)”
 European H2020-COMPET-02-2015 coordinated by UoB: 2,712,380 Euros (to UoB 675,839 Euros)
 Proposal responsibilities: Proposal leader and coordinator. Evaluation Mark: 80% (rejected)
 Consortium: Airbus (Bremen, Germany); DLR (Bremen, Germany); SZTAKI (Hungary); University of Exeter (UK); ODYS SRL(SME, Italy).
 Aim: studying, consolidating and demonstrating (through flight experiments) the advantages and potential of advanced GNC technologies for reusable launch vehicles</p> | Apr 2015
PC |
| 2 | <p>“THE EUROPEAN RESEARCH AND TRAINING NETWORK IN AUTONOMOUS TECHNOLOGY FOR SPACE OBSERVATION AND EXPLORATION (SATNET)”
 European H2020-MSCA-ITN-2017 coordinated by UoB: 3,900,925 Euros (to UoB 1,300,151 Euros)
 Proposal responsibilities: Proposal leader and coordinator.
 Evaluation marks 1st submission Nov’15: 70.60% (rejected) & 2nd sub. Jan’17: 94%² (reserve list)
 Consortium: Airbus (Friedrichshafen, Germany); Airbus (Toulouse, France); Airbus (Stevenage, UK); University of Stuttgart (Germany); Politecnico di Milano (Italy); Delft Technical University (The Netherlands); Institute of Space Studies (Spain).
 Aim: to train 15 European researchers to innovate and develop the next generation of GNC technologies for the future autonomous observation and exploration spacecraft.</p> | Nov 2015
Jan 2017
PC |

² For the H2020-MSCA-ITN-2017 call the cut-off mark was 94.4% and the obtained 94% meant the proposal was within the top 8.3%. But there were 1437 proposals and only 88 projects awarded, representing a success ratio of 6.12%. This was considered one of the most competitive H2020 and FP7 calls in recent times.

ACADEMIC ADMINISTRATIVE EXPERIENCE

Aerospace Graduate Studies Director

Aerospace Engineering Department

University of Bristol, UK Jan 2017 →

In charge of ensuring the correct implementation and follow-up of the Bristol Graduate School processes, and of liaising and supporting the School and Engineering Graduate Studies Directors.

ACADEMIC LECTURING EXPERIENCE³

Teaching Assistant

Aerospace Engineering and Mechanics Department

University of Minnesota, Minneapolis, USA Sep 1998 –

Jun 1999

In charge of recitation classes and tutoring groups of up to 30 students in Statics and Dynamics

Workshop Lecturer

Department of Electrical & Computer Engineering

Louisiana State University, Baton Rouge, USA Mar 2003

Two-hour course on Aircraft Dynamics, Simulation, Visualization and Analysis.

Advance Control Lab Lecturer

Engineering Department

University of Leicester, UK Jan–Apr

2005

In charge of the post-graduate advanced control lab for 20 Master level students.

Summer School Lecturer

“Fault Detection and Diagnosis of Complex Systems”,

Peñaranda del Duero, Spain Jun 2006

Two-hour course on H_∞ Fault Detection, Isolation and Tolerant Control.

Workshop Lecturer

Universidad Nacional de Colombia, Bogotá, Colombia

Apr 2009

“Modern Control Analysis and Modeling Techniques Applied to Aerospace Vehicles”,
Two-day course (16 hours) for graduate students and industrial representatives on modern control analysis techniques for aerospace applications. Jointly taught with professor Gary Balas (UMN).

Workshop Lecturer

“Aerospace Model-Based Fault Diagnosis and Reconfiguration”

Airbus DS Friedrichshafen, Germany May 2014

Half-day course (4hours) on robust control FDIR design and analysis to 20 satellite engineers.

Workshop Lecturer

Full-day pre-congress workshop on “Fault Diagnosis, Fault-tolerant Control, and Cooperative Control of Manned and Unmanned Aircraft Systems”. About 25 attendees, jointly with 6 lecturers.

IFAC World Congress, Cape Town, South Africa Aug 2014

AENG-30003: Individual Exploratory Project

AENG-M0005: Final Year Project

AENG-M0013: Aerospace Vehicle Design and Systems Integration 4

Respectively the 3rd year individual, 4th year final and 4th year group design projects at the aerospace department. In AENG-M0013, I supervised the rotary (2015) and space (2014, 2016, 2017) groups, and are the coordinator of the space component from 2016.

University of Bristol, UK 2013→2017

AENG-22300: Space Systems 2

10 credits, 2nd year aero course, in charge of the AOCS lecture.

University of Bristol, UK Term TB1

2015→2017

AENG-31300: Signals, Sensors and Control

20 credits, 3rd year aero course, in charge of 22 lectures and Quanser lab for 80/100 students. Topics covered: 1st/2nd order systems time and frequency domain analyses and metrics, stability analysis with Routh-Hurwitz/s-plane/Bode/Nyquist/Nichols and classical control (root-locus, PID, lead/lag).

University of Bristol, UK Term TB2

2015→2017

AENG-M1300: Flight Dynamics and Control 4

10 credits, 4th year (Master Eng. Level) aero course, in charge of 6 (out of 22) lectures for 30 students. Topics covered: state-space control and pole placement as applied to aircraft flight control.

University of Bristol, UK Term TB2

2016→2017

Workshop Lecturer

“Robust Control Theory and Applications”

European Space Agency Technical Center (ESA-ESTEC) Dec 2017

Three-day (20hrs) workshop on robust modeling, analysis and control to around 20 ESA engineers. Jointly with profs. P. Seiler (UMN, USA), A. Packard (UC Berkeley, USA), and Dr. B. Vanek (SZTAKI, HU)

³ The workshops mentioned in this section are specifically created short-courses taught by me or in collaboration with other researchers (as opposed to the standard presentations at workshops, which are listed subsequently in the “INVITED SEMINARS, WORKSHOPS & PLENARY TALKS” section).

BOOK CHAPTERS [6]

- 1 Marcos, A., Bates, D., Postlethwaite, I., “**Nonlinear symbolic LFT tools for modeling, analysis and design.**” chapter 5 in Nonlinear Analysis and Synthesis Techniques in Aircraft Control, *Lecture Notes in Control and Information Science*, Springer-Verlag, 2007.
- 2 Biannic, J.M., Marcos, A., Bates, D., Postlethwaite, I., “**Nonlinear LFT modeling for on-ground transport aircraft.**” chapter 6 in Nonlinear Analysis and Synthesis Techniques in Aircraft Control, *Lecture Notes in Control and Information Science*, Springer-Verlag, 2007.
- 3 Menon, P.P., Bates, D.G., Postlethwaite, I., Marcos, A., Fernandez, V., Bennani, S., “**Worst-Case Analysis of Control Laws for Re-Entry Vehicles using Hybrid Differential Evolution**”, Chakraborty U.K. (eds), chapter 14 in Advances in Differential Evolution, pp. 319-333, *Studies in Computational Intelligence, Vol. 143*, Springer, Berlin, Heidelberg, 2008.
- 4 Goupil, P., Marcos, A., “**Industrial perspectives for aerospace applications.**” chapter 19 in GARTEUR FM-AG16, *Lecture Notes in Control and Information Science*, Springer-Verlag, 2010.
- 5 Marcos, A., Bennani, S., “**A Linear Parameter Varying Controller for a Re-entry Vehicle Benchmark.**” chapter 2 in *Advances in Aerospace Guidance, Navigation and Control*, Editors Florian Holzapfel and Stephan Theil, Springer-Verlag, 2011
- 6 Iannelli, A., Marcos, A., Lowenberg, M., “**Limit Cycle Oscillation Amplitude Tailoring Based on Describing Functions and μ Analysis.**” Chapter 6, pp 101-109, in *Advances in Aerospace Guidance, Navigation and Control*, Editors Dolega, B., Glebocki, R., Kordos, D., Zugaj, M., Springer-Verlag 2017

JOURNALS [17] (Dec'17 Scopus: IF:=Journal Impact Factor / SC:=Publication Field-Weighted Citation Impact)

- 1 Marcos, A., Balas, G.J., “**Development of Linear Parameter Varying Models for Aircraft.**” *AIAA Journal of Guidance, Control, and Dynamics*, March 2004, vol. 27, no. 2, pp. 218-228. (IF=2.77 / SC=2.76)
- 2 Marcos, A., Ganguli, S., Balas, G.J., “**An Application of H_∞ Fault Detection and Isolation to a Transport Aircraft.**” *Control Engineering Practice*, January 2005, vol. 13, no. 1, pp. 105-119. (IF=3.42 / SC=8.37)
- 3 Szász, I., Marcos, A., Balas, G.J., Bokor, J., “**LPV Detection Filter Design for a Boeing 747-100/200 Aircraft.**” *AIAA Journal Guidance, Control and Dynamics*, June 2005, vol. 28, no. 3, pp. 461-470. (IF=2.77 / SC=4.03)
- 4 Marcos, A., Balas, G.J., “**A robust integrated controller/diagnosis aircraft application.**” *International Journal of Robust and Nonlinear Control*, August 2005, vol. 15, no. 12, pp. 531-551. (IF= 3.57 / SC=2.72)
- 5 Marcos, A., Bates, D., Postlethwaite, I., “**A Symbolic Matrix Decomposition Algorithm for Reduced Order Linear Fractional Transformation Modeling.**” *IFAC Automatica*, July 2007, vol. 43, no. 7, pp. 1125-1306. (IF=6.96 / SC=0.87)
- 6 Marcos, A., Turner, M.C., Postlethwaite, I., “**An Architecture for Design and Analysis of High-Performance Robust Anti-Windup Compensators.**” *IEEE Transactions on Automatic Control*, September 2007, vol. 52, no. 9, pp. 1672-1679. (IF=5.54 / SC=1.36)
- 7 Menon, P.P., Postlethwaite, I., Marcos, A., S. Bennani, S., Bates, D. G., “**Robustness Analysis of a Reusable Launch Vehicle Flight Control Law.**” *Control Engineering Practice*, vol. 17, no. 7, pp. 751-765, 2009 (IF=3.42 / SC=1.84)
- 8 Szabó, Z., Marcos, A., Mostaza, D., Kerr, M., Rödönyi, G., Bokor, J., Bennani, S., “**Development of an Integrated LPV/LFT Framework: Modeling and Data-based Validation Tool.**” *IEEE Control System Technologies*, vol. 19, no. 1, January 2011. (IF=5.17 / SC=0.33)
- 9 Alwi, H., Edwards, C., Marcos, A., “**Fault Reconstruction Using a LPV Sliding Mode Observer for a Class of LPV Systems.**” *Journal of Franklin Institute*, July 2011 (IF= 3.43 / SC=5.69)
- 10 Goupil, P., Marcos, A., “**The European ADDSAFE project: Industrial and academic efforts towards advanced fault diagnosis.**” *Control Engineering Practice*, vol31,n.10,pp.109-125, 2014 (IF=3.42 / SC=2.95)
- 11 Edwards, C., Marcos, A., Balas, G., “**Special issue on linear parameter varying systems.**” (editorial) *Int. Journal Robust and Nonlinear Control*, September 2014, vol. 14, no. 25, pp. 1925-1926. (IF=3.57 / SC=0.19)
- 12 Varga, A., Goupil, P., Marcos, A., “**CEP special section issue on advanced fault diagnosis for sustainable flight control-The European ADDSAFE project.**” (editorial) *Control Engineering Practice*, October 2014, vol. 31, pp. 107-108. (IF=3.42 / SC=3.85)

- 13 Marcos, A., Rosa, P., Roux, C., Bartolini, M., Bennani, S., “**An overview of the RFCS project V&V framework: optimization-based and linear tools for worst-case search,**” *CEAS Space Journal*, June 2015, Volume 7, Issue 2, pp 303-318 (*IF=1.00 / SC=0.68*)
- 14 Simplício, P., Bennani, S., Lefort, X., Marcos, A., Roux, C., “**Structured Singular Value Analysis of the VEGA Launcher in Atmospheric Flight,**” *AIAA Journal of Guidance, Control, and Dynamics*, vol. 39, no. 6, pp. 1342-1355, June 2016. (*IF=2.77 / SC=**)
- 15 Iannelli, A., Marcos, A., Lowenberg, M., “**Aeroelastic modeling and stability analysis: a robust approach to the flutter problem,**” *International Journal of Robust and Nonlinear Control*, June 2017 *accepted*
- 16 Iannelli, A., Marcos, A., Lowenberg, M., “**Nonlinear robust analysis: stability and post-critical behaviour of an aeroelastic plant,**” *IEEE Transactions on Control Systems Technology*, April 2017 *Nov 2017 accepted*
- 17 Iannelli, A., Marcos, A., Lowenberg, M., “**Study of Flexible Aircraft Body Freedom Flutter with Robust Tools,**” *AIAA Journal of Guidance, Dynamics and Control*, June 2017 *Dec 2017 accepted*

CONFERENCES [87] (*all conferences are peer-reviewed and required a full article*)

- 1 Marcos, A., Rodríguez, J., “**Preliminary Identification of Buffet Problems in High Speed Civil Transport,**” *AIAA Region V Student Conference*, St. Louis, Missouri, USA, April 1997.
- 2 Marcos, A., Balas, G.J., “**Linear Parameter Varying Modeling of the Boeing 747-100/200 Longitudinal Motion,**” *AIAA GNC Conference*, AIAA-2001-4347. Montreal, Canada, August 2001.
- 3 Ganguli, S., Marcos, A., Balas, G.J., “**Reconfigurable LPV Control Design for B-747-100/200 Longitudinal Axis,**” *American Control Conference*, Anchorage, Alaska, USA, May 2002. (*SC=43*)
- 4 Szászi, I., Ganguli, S., Marcos, A., Balas, G.J., Bokor, J., “**Application of FDI to a Nonlinear Boeing-747 Aircraft,**” *Mediterranean Conference on Control and Automation*, Lisbon, Portugal, July 2002.
- 5 Szászi, I., Marcos, A., Balas, G.J., Bokor, J., “**LPV Detection Filter Design for Boeing 747-100/200,**” *AIAA GNC Conference*, AIAA-2002-4957. Monterey, USA, August 2002.
- 6 Marcos, A., Ganguli, S., Balas, G.J., “**Application of H-infinity Fault Detection and Isolation to a Boeing 747-100/200,**” *AIAA GNC Conference*, AIAA-2002-4944. Monterey, California, USA, August 2002.
- 7 Marcos, A., Ganguli, S., Balas, G.J., “**New Strategies for Fault Tolerant Control and Fault Diagnostic,**” *IFAC SAFEPROCESS'03*, Washington, D.C., USA, June 2003.
- 8 Ghaffari, A., Ghasemi, F., Marcos, A., “**Identification of a Boeing 747-100/200 Longitudinal Motion Using Neural Networks,**” *The Second International & The Fifth National Conference of Iranian Aerospace Society*, Isfahan, Iran, February 2004.
- 9 Marcos, A., Balas, G.J., Mylaraswamy D., “**Robust Identification and Residual Generation Application to a Turbofan Engine,**” *IEEE Aerospace Conference*, Big Sky, Montana, March 2004.
- 10 Marcos, A., Balas, G.J., “**Linear Fractional Transformation Formulation of the Integrated Controller Approach,**” *Control 2004 Conference UKACC*, Bath, UK, September 2004.
- 11 Marcos, A., Bates, D., Postlethwaite, I., “**Flight Dynamics Application of a New Symbolic Matrix Order-Reduction Algorithm,**” *International Conference on Polynomial System Solving*, Paris, FR, Nov. 2004.
- 12 Marcos, A., Bates, D., Postlethwaite, I. “**Exact Nonlinear Modeling Using Symbolic Linear Fractional Transformations,**” *IFAC World Congress*, Prague, Czech Republic, July 2005.
- 13 Marcos, A., Bates, D., Postlethwaite, I. “**A Multivariate Polynomial Matrix Order-Reduction Algorithm for Linear Fractional Transformation Modeling,**” *IFAC World Congress*, Prague, Czech Rep., July 2005.
- 14 Marcos, A., Mylaraswamy, D., Balas, G.J., “**Robust Model Identification Application to a Turbofan Engine,**” *IFAC World Congress*, Prague, Czech Republic, July 2005.
- 15 Marcos, A., Balas, G.J., Bokor, J., “**Integrated FDI and Control for Transport Aircraft,**” *AIAA GNC Conference*, AIAA-2005-5937. San Francisco, California, USA, August 2005.
- 16 Marcos, A., Balas, G.J. “**Nested Integrated Control and Diagnostic Filter Design,**” *44th IEEE CDC-ECC 2005*, Seville, Spain, December 2005.
- 17 Marcos, A., Bates, D., Postlethwaite, I. “**Control oriented uncertainty modeling using μ sensitivities and skewed μ analysis tool,**” *44th IEEE CDC-ECC 2005*, Seville, Spain, December 2005.

- 18 Marcos, A., Jeanneau, M., Bates, D., Postlethwaite, I. "**Aircraft modeling for nonlinear and robust control design and analysis**," *5th IFAC Symposium on Robust Control Design 2006*, Toulouse, France, July 2006.
- 19 Marcos, A., Turner, M., Bates, D., Postlethwaite, I. "**Robustification of static and low order anti-windup designs**," *5th IFAC Symposium on Robust Control Design 2006*, Toulouse, France, July 2006.
- 20 Marcos, A., Turner, M., Postlethwaite, I. "**High-performance Architecture for Design and Analysis of Robust Anti-Windup Compensator**," *American Control Conference 2006*, Minneapolis, USA.
- 21 Castro, H., Bennani, S., Marcos, A., "**Robust Filter Design for a Re-Entry Vehicle**," *7th International Conference on Dynamics and Control of Systems and Structure in Space 2006*, Greenwich, England.
- 22 Biannic, J.M., Marcos, A., Jeanneau, M. "**Nonlinear simplified LFT modeling of an aircraft on ground**," *IEEE International Conference on Control Application 2006*, Munich, Germany.
- 23 Castro, H., Bennani, S., Marcos, A., "**Integrated vs. Decoupled Fault Detection Filter & Flight Control Law Designs for a Re-Entry Vehicle**," *IEEE International Conference on Control Application 2006*, Munich, Germany.
- 24 Marcos, A., Peñín, L.F., Caramagno, A., Sommer, J., Belau, W., "**Atmospheric Re-Entry NDI Control Design for the Hopper RLV Concept**," *17th IFAC Symposium on Automatic Control in Aerospace*, Toulouse, FR, June 2007.
- 25 Menon, P.P., Bates, D.G., Postlethwaite, I., Marcos, A., Vicente, F., Bennani, S., "**Worst-Case Analysis of Flight Control Laws for Re-Entry Vehicles**," *17th IFAC Symposium on Automatic Control in Aerospace*, Toulouse, FR, June 2007.
- 26 Marcos, A., Peñín, L.F., DiSotto, E., Draï, R., "**Formation Flying Control in Highly Elliptical Orbits**," *AIAA GNC Conference*, Hilton Head, South Carolina, USA. August 2007.
- 27 Di Sotto, E., Peñín, L.F., Bastante, J.C., Marcos, A., Branco, J., "**FF Analysis and GNC Concept for a FF Mission in Highly Eccentric Orbit**," *3rd International Symposium on Formation Flying, Missions and Technologies*, Noordwijk, ESA-ESTEC, April 2008.
- 28 Marcos, A., De Zaiacomo, G., Peñín, L.F., Borschlegl, E., "**Fault Analysis for Robust FDI Design During RLV Ascent and Re-entry Phases**," *7th International ESA Conference on Guidance, Navigation & Control Systems*, Ireland, June 2008.
- 29 Menon, P.P., Marcos, A., Bennani, S., Postlethwaite, I., Bates, D.G., "**Multiobjective Worst-Case Analysis of a Re-Entry Vehicle Control Law**," *IFAC World Congress Automatic Control*, Korea, 2008.
- 30 Marcos, A., De Zaiacomo, G., Peñín, L.F., "**Simulation-Based Fault Analysis Methodology for Aerospace Vehicles**," *AIAA GNC Conference*, Honolulu, USA, August 2008.
- 31 Marcos, A., Peñín, L.F., Caramagno, A., Sommer, J., Belau, W. Borschlegl, E., "**Guidance and Control Design for the Ascent Phase of the Hopper RLV**," *AIAA GNC Conference*, Honolulu, USA, August 2008.
- 32 Kerr, M.L., Marcos, A., Peñín, L.F., "**Gain Scheduled FDI for a Re-entry Vehicle**," *AIAA GNC Conference*, Honolulu, USA, August 2008.
- 33 Marcos, A., Peñín, L.F., Di Sotto, E., "**LFT Modeling for the analysis of relative motion controllers in eccentric orbits**," *2nd IEEE Multi-Conference on Systems and Control (MSC)*, San Antonio, USA, September 2008. Invited Paper.
- 34 Marcos, A., Mostaza, D., Peñín, L.F., "**Achievable Moments NDI-based Fault Tolerant Thrust Vector Control of an Atmospheric Vehicle During Ascent**," *IFAC SAFEPROCESS'09*, Barcelona, Spain, June 2009.
- 35 Kerr, M.L., Marcos, A., Peñín, L.F., "**Development of an FDI Filter for the Hopper RLV during Re-entry**," *IFAC SAFEPROCESS'09*, Barcelona, Spain, June 2009.
- 36 Marcos, A., Bennani, S., "**LPV Modeling, Analysis and Design in Space Systems: Rationale, Objectives and Limitations**," *AIAA GNC Conference*, Chicago, USA, August 2009.
- 37 Marcos, A., Kerr, M.L., De Zaiacomo, G., Peñín, L.F., Szabó, Z., Rödönyi, G., Bokor, J., "**Application of LPV/LFT Modeling and Data-based Validation to a re-entry vehicle**," *AIAA GNC Conference*, Chicago, USA, August 2009.
- 38 Kerr, M.L., Marcos, Peñín, L.F., Brieger, O., Postlethwaite, I., Turner, M., "**Piloted Assessment of a Fault Diagnosis Algorithm on the ATTAS Aircraft**," *AIAA GNC Conference*, Chicago, USA, August 2009.

- 39 Marcos, A., Veenman, J., Scherer, C., De Zaiacomo, G., Mostaza, D., Kerr, M.L., Koroglu, H., Bennani, S., “**Application of LPV Modeling, Design and Analysis Methods to a Re-entry Vehicle,**” *AIAA GNC Conference*, Toronto, Canada, August 2010.
- 40 Kerr, M.L., Marcos, A., Peñín, L.F., “**Development and Testing of a GNC-FDI Filter for a Reusable Launch Vehicle during Ascent,**” *AIAA GNC Conference*, Toronto, Canada, August 2010.
- 41 Alwi, H., Edwards, C., Marcos, A., “**Actuator and Sensor Faults Reconstruction Using an LPV Sliding Mode Observer,**” *AIAA GNC Conference*, Toronto, Canada, August 2010.
- 42 Marcos, A., “**A gain scheduled H-infinity controller for a re-entry benchmark,**” *AIAA GNC Conference*, Toronto, Canada, August 2010.
- 43 Marcos, A., Kerr, M.L., Peñín, L.F., “**Application of a Fault Accommodation Approach to a Re-entry Vehicle,**” in invited session on “Active Fault Tolerant Control Systems (AFTCS) in Aerospace,” *18th IFAC Symposium on Automatic Control in Aerospace ACA'2010*, September, Nara, Japan.
- 44 Alwi, H., Edwards, C., Marcos, A., “**FDI for a Mars-Orbiting Satellite based on a Sliding Mode Observer Scheme,**” *IEEE Conference on Control and Fault-Tolerant Systems SYTOL'10*, Nice, France.
- 45 Marcos, A., “**Advanced Fault Diagnosis for Sustainable Flight Guidance and Control,**” *6th European Aeronautics Days*, Madrid, Spain, March 2011.
- 46 Marcos, A., Bennani, S., “**A Linear Parameter Varying Controller for a Re-entry Vehicle Benchmark,**” *1st Council of European Aerospace Societies (CEAS) GNC Conference*, Munich, Germany, April 2011.
- 47 Peñín, L.F., Marcos, A., Kerr, M., “**GNC FDI/FTC Technology For Re-entry Vehicles,**” *3rd International Atmospheric Reentry Association (ARA) Conference*, Arcachon, France, May 2011.
- 48 Marcos, A., Peñín, L.F., Caramagno, A., Roux, C., Rotunno, M., Joos, D.H., Bennani, S., “**The V&V Problematic for Launchers: Current Practice and Potential Advantages on the Application of Modern Analysis Techniques,**” *8th ESA GNC Conference*, Carlsbad, Czech Republic, June 2011.
- 49 Marcos, A., “**Application of H-infinity fault diagnosis to ADDSAFE benchmark: the control surface jamming case,**” *AIAA GNC Conference*, Portland, USA, August 2011.
- 50 Goupil, P., Marcos, A., “**Advanced Diagnosis for Sustainable Flight Guidance and Control: The European ADDSAFE Project,**” *SAE Aerospace Technology Conference and Exposition*, 2011
- 51 Marcos, A., Alwi, H., Edwards, C., Falcoz, A., Bornschlegel, E., “**Verification & Validation of a Satellite Fault Detection and Isolation Scheme Based on Sliding-Mode Observers,**” paper on invited session *Fault Detection, Isolation and Reconfiguration in Space* at SAFEPROCESS 2012, Mexico
- 52 Marcos, A., “**Assessment on the ADDSAFE Benchmark Simulator of an H-infinity Fault Detection Design for Aircraft,**” paper on invited session *European efforts towards Advanced Fault Diagnosis: the FP7 ADDSAFE project – Part II* at SAFEPROCESS 2012, Mexico
- 53 Goupil, P., Marcos, A., “**Industrial benchmarking and evaluation of ADDSAFE FDD designs,**” paper on invited session *European efforts towards Advanced Fault Diagnosis: the FP7 ADDSAFE project – Part II* at SAFEPROCESS 2012, Mexico
- 54 García de Marina, H., Marcos, A., Haya, R., “**Angle of Attack and True Airspeed failure sensor detection and recovery based on Unscented Kalman Filters for the ALPHA vehicle,**” SAFEPROCESS'12, Mexico
- 55 Pulecchi, T., Marcos, A., Roux, C., Mantini, V., Bennani, S., “**Frozen-time and time-varying robust stability certificates for the coupled pitch/yaw motion of an axial-symmetric launch vehicle,**” paper on invited session *SPACE V&V* at ROCOND 2012, Aalborg, Denmark
- 56 Marcos, A., Peñín, L.F., Le Gonidec, S., Lemaitre, A., “**HMS-Control-Interaction Architecture for Rocket Engines,**” *AIAA GNC 2012*, Minneapolis, USA
- 57 Roux, C., Mantini, V., Marcos, A., Peñín, L.F., Bennani, S., “**Robust Flight Control System Design Verification & Validation for Launchers,**” paper on invited session *Robust Launcher Flight Control System Design Verification and Validation special session* at *AIAA GNC 2012*, Minneapolis, USA
- 58 Pulecchi, T., Marcos, A., Roux, C., Mantini, V., Bennani, S., “**Thrust Vector Control Robustness of axial-symmetric Launch Vehicles with Fuel Slosh,**” paper on invited session *Robust Launcher Flight Control System Design Verification and Validation special session* at *AIAA GNC 2012*, Minneapolis, USA
- 59 Marcos, A., García de Marina, H., Mantini, V., Roux, C., Bennani, S., “**Optimization-based worst-case analysis of a launcher during the atmospheric ascent phase,**” *AIAA GNC 2013*, Boston, USA

- 60 Marcos, A., Mantini, V., Roux, C., Bennani, S., “**Bridging the Gap between Linear and Nonlinear Worst-Case Analysis: An Application Case to the Atmospheric Phase of the VEGA Launcher,**” 19th IFAC Symposium on Automatic Control in Aerospace (ACA), Wuerzburg, Germany, 2013
- 61 Marcos, A., Peñín, L.F., Malikov, D., Reichstadt, S., Le Gonidec, S., “**Fault Detection and Isolation for a Rocket Engine Valve,**” 19th IFAC Symposium on Automatic Control in Aerospace (ACA), Germany, 2013
- 62 Marcos, A., Rosa, P., Roux, C., Bartolini, M., Bennani, S., “**An overview of the RFCS project V&V framework: optimization-based and linear tools for worst-case search,**” 9th International ESA Conference on GNC Systems, Oporto, Portugal, June 2014
- 63 Marcos, A., Peñín, L.F., Caramagno, A., “**Model-Based FDIR: from paper to planes,**” paper on invited session *Bridging the Gap between Academia and Industry: Successful Aerospace Collaborations*, IFAC World Congress, Cape Town, South Africa, August 2014
- 64 Goupil, P., Boada-Bauxel, J., Marcos, A., Cortet, E., Kerr, M., Costa, H., “**AIRBUS efforts towards advanced real-time Fault Diagnosis and Fault Tolerant Control,**” paper on invited session *European Efforts towards Advanced Fault Diagnosis and Fault Tolerant Control for Civil Aircraft: The FP7 RECONFIGURE Project*, IFAC World Congress, Cape Town, South Africa, August 2014
- 65 Valli, M., Spallotta, D., Roux, C., Marcos, A., Mujumdar, A., Menon, P.P., Bennani, S., “**Thrust Vector Control Validation Results for Performance and Stability Robustness Assessments,**” paper on invited session *Worst-case V&V Applications for Aerospace GNC systems - Part I* at 3rd CEAS EUROGNC CONFERENCE, Toulouse, France, April 2015
- 66 Marcos, A., Roux, C., Bennani, S., “**Stochastic mu-Analysis for launcher thrust vector control systems,**” paper on invited session *Worst-case V&V Applications for Aerospace GNC systems - Part 2* at 3rd CEAS EUROGNC CONFERENCE, Toulouse, France, April 2015
- 67 Marcos, A., Bennani, S., Roux, C., Valli, M., “**Uncertainty Modeling and Robust Analysis of Atmospheric Launchers: Incremental Steps for Industrial Transfer,**” 8th IFAC Symposium on Robust Control Design (ROCOND), Bratislava, Slovakia, July 2015
- 68 Goupil, P., Boada-Bauxel, J., Marcos, A., Rosa, P., Kerr, M., Dalbies, L., “**An overview of the FP7 RECONFIGURE project: industrial, scientific and technological objectives**” paper on invited session on *FP7 RECONFIGURE Project: Theoretical and Practical Contributions towards Advanced Real-Time FDD and FTC for Civil Aircraft* at SAFEPROCESS 2015, Paris, France, September 2015
- 69 Marcos, A., Bennani, S., Roux, C., “**LPV modeling and LFT Uncertainty Identification for Robust Analysis: application to the VEGA Launcher during Atmospheric Phase,**” 1st IFAC Workshop on Linear Parameter Varying Systems, Grenoble, France, October 2015
- 70 Iannelli, A., Marcos, A., Lowenberg, M., “**Comparison of Aeroelastic Modeling and Robust Flutter Analysis of a Typical Section,**” 20th IFAC Symposium on Automatic Control in Aerospace (ACA), Sherbrook, Canada, August 2016
- 71 Currie, C., Marcos, A., Turnbull, O., “**Wind Optimal Flight Trajectories to Minimise Fuel Consumption within a 3 Dimensional Flight Network,**” Control 2016 Conference UKACC, Belfast, UK, September 2016
- 72 Iannelli, A., Marcos, A., Lowenberg, M., “**Modeling and Robust Body Freedom Flutter Analysis of Flexible Aircraft Configurations,**” IEEE Multi-Conference on Systems and Control (MSC 2016), Buenos Aires, Argentina, September 2016
- 73 Navarro-Tapia, D., Marcos, A., Bennani, S., Roux, C., “**Structured H-infinity Control Based on Classical Control Parameters for the VEGA Launch Vehicle,**” IEEE Multi-Conference on Systems and Control (MSC 2016), Buenos Aires, Argentina, September 2016
- 74 Joffre, E., Zamaro, M., Silva, N., Marcos, A., Simplicio, P., Richardson, B., “**Landing on Small Bodies Trajectory Design, Robust Nonlinear Guidance and Control,**” 27th AAS/AIAA Space Flight Mechanics Meeting, San Antonio (Texas), USA, February 2017
- 75 Marcos, A., Masayuki, S., “**Robust Model-Matching Controller Design Using Matlab “hinfstruct” Command,**” 4th Multi-Symposium on Control Systems (SICE-MSCS17), Okayama, Japan, March 2017
- 76 Iannelli, A., Marcos, A., Lowenberg, M., “**LCO amplitude tailoring based on Describing Functions and Singular Structured Value Analysis,**” 4th CEAS Specialist Conference on Guidance, Navigation and Control (EuroGNC 2017), Warsaw, Poland, April 2017
- 77 Simplicio, P., Marcos, A., Joffre, E., Zamaro, M., Silva, N., “**Parameterised Laws for Robust Guidance and Control of Planetary Landers,**” 4th CEAS Specialist Conference on Guidance, Navigation and Control (EuroGNC 2017), Warsaw, Poland, April 2017

- 78 Navarro-Tapia, D., Marcos, A., Bennani, S., Roux, C., “**Structured H-infinity Control Design for the VEGA Launch Vehicle: Recovery of the Legacy Control Behaviour,**” ESA Guidance, Navigation and Control Conference (ESAGNC 2017), Salzburg, Austria, May 2017
- 79 Joffre, E., Zamaro, M., Silva, N., Marcos, A., Simplício, P., Richardson, B., “**Results of new guidance and control strategies for landing on small bodies,**” ESA Guidance, Navigation and Control Conference (ESAGNC 2017), Salzburg, Austria, May 2017
- 80 Iannelli, A., Marcos, A., Lowenberg, M., “**Robust nonlinear flutter analysis based on Describing Function and Structured Singular Value with an IQC validation,**” 7th European Conference for Aeronautics and Space Sciences (EUCASS 2017), Milan, Italy, July 2017
- 81 Navarro-Tapia, D., Marcos, A., Bennani, S., Roux, C., “**Structured H_∞ and Linear Parameter Varying control design for the VEGA Launch Vehicle,**” 7th European Conference for Aeronautics and Space Sciences (EUCASS 2017), Milan, Italy, July 2017
- 82 Simplício, P., Marcos, A., Joffre, E., Zamaro, M., Silva, N., “**A Systematic Performance-Oriented Tuning for Space Exploration Descent & Landing Guidance,**” 7th European Conference for Aeronautics and Space Sciences (EUCASS 2017), Milan, Italy, July 2017
- 83 Iannelli, A., Simplício, P., Navarro-Tapia, D., Marcos, A., “**LFT Modeling and μ Analysis of the Aircraft Landing Benchmark,**” 20th IFAC World Congress, Toulouse, France, July 2017
- 84 Navarro-Tapia, D., Simplício, P., Iannelli, A., Marcos, A., “**Robust Flare Control Design Using Structured H_∞ Synthesis: a Civilian Aircraft Landing Challenge,**” 20th IFAC WC, Toulouse, France, July 2017
- 85 Marcos, A., Masayuki, S., “**Flight Testing of an Structured H_∞ Controller: A EU-Japan Collaborative Experience,**” 1st IEEE Conference on Control Technology and Applications, Hawaii, August 2017
- 86 Marcos, A., “**Revisiting the aircraft C* control law: a comparison between classical and structured H_∞ designs,**” 1st IEEE Conference on Control Technology and Applications, Hawaii, August 2017
- 87 Iannelli, A., Marcos, A., Lowenberg, M., “**Nonlinear stability and post-critical analysis of an uncertain plant with Describing Functions and Integral Quadratic Constraints,**” CDC 2017, Melbourne, Dec 2017

GRADUATE STUDENTS [PhDs=4]

- 1 **PhD.** June15-Expected Dec18. Mr. Diego Navarro-Tapia “Robust & Adaptable Launcher TVC Control Systems for the VEGA Evolution Launch Vehicle”. Funded by ESA-ESTEC Network Partnering Initiative + EPSRC DTP, co-advisor S. Bennani (ESA-ESTEC).
- 2 **PhD.** Sept15-Expected Mar19. Mr. Andrea Iannelli “Advanced Linear and Nonlinear Analysis of Aircraft Flutter”. Funded by EU H2020 FLEXOP project, co-advisor professor Mark Lowenberg (UoBristol).
- 3 **PhD.** Apr16-Expected Oct19. Mr. Pedro Simplício “Advanced Control Analysis and Design Techniques for Aerospace Systems”. Funded by UK Space Agency + DLR/ESA-ESTEC Network Partnering Initiative + EPSRC DTP, co-advisors: S. Bennani (ESA-ESTEC).
- 4 **PhD.** Sept17-Expected Jan21. Mr. Henri French “Resilient Descent and Landing Design and Analysis for Spacecraft Exploration”. Funded by EPSRC DTP (UK student), co-advisors: J. Joffre (Airbus, Stevenage).

POST-DOCTORAL ASSOCIATES [PostDocs=3]

- 1 **Post-Doc. November 2015-November 2017.** Dr. Nandor Terkovics. Modeling and On-Board Flutter Prediction. EU H2020 FLEXOP project.
- 2 **Post-Doc. January 2016-October 2016.** Dr. Saleh S. Delshad. On-Board Flutter Control. EU H2020 FLEXOP project.
- 3 **Post-Doc. October 2017-October 2018.** Dr. Sérgio Waitman. On-Board Flutter Control. EU H2020 FLEXOP project.

ACADEMIC & RESEARCH VISITORS [Visitors=4]

- 1 **Industry visitor. 2 weeks October 2014.** Mr. Daniel Santamaria (CATEC, Spain). Work on H-infinity FTC for Rotary UAVs.
- 2 **ESA visitor. 2 weeks March 2015.** Mr. Pedro Simplício (ESA-ESTEC). Work on mu-analysis and LFT modelling for VEGA launcher vehicle.
- 3 **PhD visitor. October 2015-September 2016.** Mr. Li Tong “Rocket Demonstration of H-infinity FDI Techniques”. National University of Defense Technology (NUDT), China.
- 4 **Academic visitor. 2 weeks September 2017.** Prof. Peter Seiler (UMN, USA). Work on application of Region of Attraction and Time-Varying analysis to FLEXOP project.

INVITED SEMINARS, WORKSHOPS & PLENARY TALKS [35]

- 1 **Workshop Invited Speaker**, “Fault Detection & Fault Tolerant Approaches with Aircraft Applications,” *Louisiana/NASA Workshop on System Safety (LAWSS 2003)*, Baton Rouge, USA, February 2003.
- 2 **Invited Seminar**, “H-infinity Fault Detection and Isolation Application to a Turbofan Engine,” *Honeywell Research Laboratories*, Minneapolis, USA, October 2003.
- 3 **Invited Seminar**, “Aircraft Time-Domain System Identification,” *Vehicle Health and Logistics Management Group, Honeywell Research Laboratories*, Minneapolis, USA, October 2003.
- 4 **Invited Seminar**, “Application of H_∞ Fault Detection and Isolation to a Transport Aircraft,” *Systems Control and Flight Dynamics (DCSD) ONERA*, Toulouse, France, November 2005.
- 5 **Invited Seminar**, “Linear Fractional Transformation Modeling and its applications,” *Stability & Control Department, AIRBUS*, Toulouse, France, November 2005. Jointly with Dr. Jean-Marc Biannic (ONERA).
- 6 **Workshop Invited Speaker**, “Exact and Approximated Nonlinear LFT Modeling & its Application to the Airbus On-Ground Model” *GARTEUR AG17 Intermediate Workshop, FOI*, Stockholm, February 2006.
- 7 **PLENARY Speaker**, “Robust FDI Estimation in Aerospace Applications,” *17th International Workshop on Principles of Diagnosis DX’06*. Peñaranda del Duero, Burgos, Spain, June 2006.
- 8 **Workshop Invited Speaker**, “Fully Automated Re-entry NDI Control Design for the Hopper RLV Concept,” *17th CNES/CCT-PAF Workshop on Control of Re-entry Space Vehicles*, Paris, September 2006.
- 9 **ESA Workshop Invited Speaker**, “Deimos Experience, Insight and Perspective on Space Control R&D,” *ESA Workshop on Avionics Data, Control and Software Systems (ADCSS)*, Section Automatic Control Needs for Space Applications, *ESA-ESTEC*, October 2007.
- 10 **ESA Workshop Invited Speaker**, “Atmospheric Re-entry: a multifaceted problem demanding multidisciplinary solutions,” *ESA Workshop on Avionics Data, Control and Software Systems (ADCSS)*, Section Atmospheric Re-entry Guidance & Control Needs and Challenges, *ESA-ESTEC*, October 2007.
- 11 **ROUND-TABLE Speaker**, *ESA-CNES-DLR-CIRA European Working Group on Atmospheric Re-entry guidance & control, ESA-ESTEC*, October 2007.
- 12 **Workshop Invited Speaker** (Biannic, J.M., Marcos, A., Bates, D.G. Postlethwaite, I.), “Nonlinear LFT modeling of on-ground aircraft,” *GARTEUR AG17 Final Workshop, ONERA*, Toulouse, France, Oct 2007.
- 13 **Invited Seminar**, “Unifying Concepts in Anti-Windup and Fault Detection & Isolation: High-Performance Robust AW Architectures,” *Hungarian Academy of Sciences Computer and Automation Research Institute (MTA SZTAKI)*, Budapest, Hungary, May 2008.
- 14 **Invited Seminar**, “NDI Guidance and Control for Reusable Launch Vehicles,” *Aerospace Department Texas A&M University*, Texas, USA, September 2008.
- 15 **EU Workshop Invited Speaker**, “Future technological needs for FDI/FTC/HMS for aerospace systems,” *Workshop on Advanced FDI/FTC in future EC-FP*, University of Duisburg-Essen, Germany, March 2009.
- 16 **Invitation-Only Workshop Speaker**, *IEEE-CSS International Workshop On The Future of Control in Transportation Systems*, University of Sannio, Benevento, Italy, May 2010.
- 17 **Workshop Invited Speaker**, “Comparativa de Técnicas de Control Robusto para Vehículos de Re-entrada Atmosférica,” *IX Simposio CEA de Ingeniería de Control*, Facultad de Ciencias Físicas, Universidad Complutense de Madrid, Spain, April 2011.
- 18 **ESA Workshop Invited Speaker** (Marcos, A., Kerr, M., Peñín, L.F.), “Deimos Experience, Insight & Perspective on Space FDIR,” *ESA Workshop on Avionics Data, Control and Software Systems (ADCSS)*, *ESA-ESTEC*, The Netherlands, October 2011.
- 19 **ESA-FLPP Workshop Invited Speaker**, “Diagnosis Tools,” *FLPP-Technologies HMS Workshop*, *SNECMA*, France, November 2011.
- 20 **ESA-FLPP Workshop Invited Speaker** (Marcos, A., Peñín, L.F.), “HMS/Control Law Interaction and Principle Simulation Model,” *FLPP-Technologies HMS Workshop*, *SNECMA*, France, November 2011.
- 21 **Invited Seminar**, “A Comparison of Robust Control Design Techniques For an Atmospheric Re-entry Vehicle Application,” *Hungarian Academy of Sciences Computer and Automation Research Institute (MTA SZTAKI)*, Budapest, Hungary, May 2012.

- 22 **ESA Workshop Invited Speaker**, “Robust Flight Control System Design Verification and Validation Framework,” *ESA-CNES-DLR Workshop on Worst Case Analysis Tools For Guidance Navigation & Control Systems*, ESA-ESTEC, Noordwijk, The Netherlands, 13th-14th November 2012.
- 23 **PLENARY Speaker**, “EU ADDSAFE project: advanced diagnosis for sustainable flight guidance and control,” *V international Summer School on Fault Diagnosis of Complex Systems*, Madrid, July 2013.
- 24 **ESA Workshop Invited Speaker**, (Marcos, A., Peñín, L.F., Bennani, S.), “LPV Control and Analysis for Re-entry Vehicles,” *ESA-CNES-DLR Workshop on Linear Parameter Varying Control: A framework for adaptable space systems*, ESA-ESTEC, Noordwijk, The Netherlands, February 2014.
- 25 **UoB Seminar**, “*Modern robust control applications in the aerospace field*,” University of Bristol, UK, Dynamics and Control group Seminar, May 2014.
- 26 **UoB Seminar**, “*Advanced Uncertainty Analysis of the European VEGA Launcher*,” University of Bristol, UK, Dynamics and Control group Seminar, April 2015.
- 27 **UoB Seminar**, “*Robust modeling and analysis of the European VEGA launcher*,” University of Bristol, UK, Applied Nonlinear Mathematics Seminar, May 2015.
- 28 **UoB Workshop Invited Speaker**, “Research Opportunities at ESA and H2020,” *3rd IAS Workshop on Space Research*, University of Bristol, UK, July 2015.
- 29 **IEEE CSS UK&I Seminar Invited Speaker**, “Aerospace Control,” Cranfield, UK, December 2015.
- 30 **Royal Aeronautical Society Workshop Invited Speaker**, “Recent Developments and Advances in Aeroelasticity,” London, UK, March 2016.
- 31 **Universidad Carlos III de Madrid (UC3M) Seminar**, “Linear Fractional Transformations and the Structured Singular Value: Robust Modelling and Analysis of aerospace systems” Bioengineering and Aerospace Engineering Department, Madrid, Spain, September 2016.
- 32 **L’Institut Supérieur de l’Aeronautique et de l’Espace (ISAE) Seminar**, “Linear Fractional Transformations and the Structured Singular Value: Robust Modelling and Analysis of aerospace systems” Aerospace Engineering Department, Toulouse, France, 4th December 2016.
- 33 **University of Tokyo Seminar**, “Linear Fractional Transformations and the Structured Singular Value: Robust Modelling and Analysis of aerospace systems” Aerospace Engineering Department, Tokyo, Japan, 22nd December 2016.
- 34 **UoB Seminar**, “*Flight Testing Advanced Controllers: an EU-Japan collaborative experience*,” University of Bristol, UK, Dynamics and Control group Seminar, February 2017.
- 35 **ROUND-TABLE Speaker**, “*Managing Innovation in Control Technology and Applications: Insights from Industry and Academia*,” 1st IEEE Conf. on Control Technology and Applications, Hawaii, August 2017

SOFTWARE DEVELOPMENT

- 1 **FTLAB747 MATLAB v6.1/v6.5 (1998-2003)**. A UNIX/WINDOWS platform to simulate, visualize and analyze a Boeing 747-100/200 aircraft for control / fault diagnosis / fault tolerant design. Includes: i) high and low fidelity models of the nonlinear aircraft; ii) trimming routine based in NASA six aircraft equilibrium conditions; iii) linearization routine for pilot inputs and control surface inputs; and iv) realistic turbulence and sensor models. Joint development with the Aerospace Dept. at Delft Technical University.
- 2 **Turbofan time-domain model identification, validation and simulation with H-infinity fault detection design toolbox (2003)**. Proprietary Honeywell Inc. Developed to obtain, validate and simulate parametric models from continuous-time aero-data of turbofan engines. It also allows the user to design MIMO H-infinity fault detection filters.
- 3 **Linear Fractional Transformation (LFT) symbolic modeling toolbox v3.2 (2004-2008)**. Toolbox for reduced-order LFT modeling of nonlinear/linear systems using the Logic Horner Tree algorithm.
- 4 **Health Management System Functional Engineering Simulator, HMS-FES (2007)**. Proprietary Deimos Space. A high-fidelity FES for the Hopper reusable launch vehicle (RLV) for ascent/re-entry GNC and HMS studies. The FES includes: Astrium-ST aerodynamic database, SNECMA’s main engine systems and Alcatel-Alenia-Italia-Space’s TPS. HMS-FES is the cornerstone of ESA’s HMS project.
- 5 **Fault Analysis Toolbox, FAT (2007)**. Proprietary Deimos Space. A toolbox automating GNC fault analysis for reusable launch vehicles. It is built around a specifically developed simulation-based fault analysis approach relying on fault-effects quantification metrics (both temporal and modulo based) and a fault classification hierarchy based on critical threshold evaluation.

- 6 **LPVMAD Modeling Toolbox (2008)**. Proprietary Deimos Space. Toolbox to perform LFT/LPV modeling. Includes: nonlinear standard Simulink/Matlab-based numerical simulation, trimming and linearization capabilities; numerical LFT linearization; symbolic LFT modeling (nested, addition, subtraction, multiplication... operations); and (numerical/symbolic) LTI/LFT to LPV/LFT schemes.
- 7 **V&V Launcher Toolbox (2017)**. Toolbox to robust modeling, analysis and design for launcher vehicles. Developed within the framework of an ESA-ESTEC TRP-EXPRO project.

PROJECTS DESCRIPTION

<p>“HEALTH MANAGEMENT SYSTEM FOR REUSABLE SPACE TRANSPORTATION (HMS)” – ESA/ESTEC TRP contract managed by Astrium Space-Transportation (Bremen). Responsibilities: Deimos Space technical lead in charge of design of atmospheric ascent/re-entry NDI G&C including thrust-vector-control; Development of fault analysis and accommodation methodologies and tools; Design and application of H_∞ FDI filters. All work performed on EADS-ASTRIUM’s Hopper reusable launch vehicle.</p>	<p>Jan 2006 – Sep 2009</p>
<p>“MOOM AND MARS HUMAN MISSION RE-ENTRY TECHNOLOGIES (M&M)” ESA/ESTEC TRP contract managed by Alcatel Alenia Space (Italia). Responsible for a G&C technological assessment of human high-speed re-entry missions.</p>	<p>Oct 2006 – Nov 2006</p>
<p>“DEVELOPMENT OF GNC ALGORITHMS FOR RENDEZVOUS AND FORMATION FLYING IN NON-CIRCULAR ORBITS (GNCO)” ESA/ESTEC TRP contract managed by Deimos Engenharia (Portugal). Responsibility: relative formation NDI control design for a three-satellite mission flying in a highly elliptical orbit around Earth.</p>	<p>Mar 2006 – Dec 2007</p>
<p>“LINEAR PARAMETER VARYING MODELING, ANALYSIS AND DESIGN (LPVMAD)” ESA/ESTEC TRP contract managed by Deimos Space. Responsibilities: Consortium project manager and Deimos technical lead, development of integrated LPV modeling, design and analysis tool for space missions and application (LFT/LPV modeling & LPV control design) to a re-entry benchmark.</p>	<p>May 2007 – May 2010</p>
<p>“CREW SPACE TRANSPORTATION SYSTEM PREPARATORY PROGRAM (Breadboarding Activity (CSTSBB))” ESA-ESTEC TRP contract managed by Thales Alenia Space (Italy). A bilateral project between ESA and Russia’s Energia in preparation for future crew space transportations. Responsibility: assessment of control algorithm challenges & development.</p>	<p>Aug 2007 – Aug 2008</p>
<p>“MODERN CONTROL TECHNIQUES APPLIED TO SATELLITE FDIR (SATFDI)”, ESA/ESTEC TRP contract managed by Astrium-France. Responsibilities: Deimos Space project manager and technical lead in charge of application of sliding-mode observers (SMO) FDI filters to Astrium Mars Express satellite system –residual generator design performed by collaborator from University of Leicester.</p>	<p>May 2008 – June 2011</p>
<p>“DEVELOPMENT OF GNC ALGORITHMS FOR RENDEZVOUS AND FORMATION FLYING IN NON-CIRCULAR ORBITS MATURATION (GNCOMAT)” ESA/ESTEC TRP contract managed by Deimos Engenharia (Portugal). Responsibility: μ analysis assessment of applicability of a circular orbit rendezvous (RVD) controller in the elliptical orbit RVD of ESA’s Mars Sample Return mission.</p>	<p>May 2009 – Jul 2009</p>
<p>“MAIN STAGE PROPULSION TECHNOLOGY HEALTH MONITORING SYSTEM ACTIVITIES (FLPPEHMS)” SNECMA FLPP’s sub-contract to Deimos Space. Responsibility: Deimos technical lead in charge of preliminary assessment of the HMS/control law interaction in the High Thrust Engine Demonstrator (HTE-D) and the definition of the HMS/control law interaction architecture.</p>	<p>Jul 2009 – Oct 2010</p>
<p>“ADVANCED FAULT DIAGNOSIS FOR SUSTAINABLE FLIGHT GUIDANCE AND CONTROL (ADDSAFE)” European FP7 CP-FP project coordinated by Deimos Space. Responsibility: Project coordinator and Deimos technical lead. The project aims to provide model-based fault diagnosis solutions to Airbus aircraft while advancing the current methods for future needs.</p>	<p>Jul 2009 – Oct 2012</p>
<p>“FUTURE HIGH-ALTITUDE HIGH-SPEED TRANSPORT (FAST20XX)”, European FP7 CP-FP project managed by ESA. Responsibility: WP manager for GNC design (WP4.6.2) and GNC Health Management System (WP4.6.3). The project assess the feasibility of a future high-altitude and high-speed transport.</p>	<p>Feb 2010 – Nov 2012</p>
<p>“ROBUST FLIGHT CONTROL SYSTEM DESIGN VERIFICATION&VALIDATION FRAMEWORK (RFCS)”. ESA/ESTEC TRP contract managed by Deimos Space. Responsibilities: Project manager and Deimos Space lead. Objectives are to analyze the gaps in the current Launcher V&V process and subsequently develop & demonstrate an enhanced V&V framework on a VEGA launcher benchmark.</p>	<p>Dec 2010 – Dec 2012</p>
<p>“MAIN STAGE PROPULSION TECHNOLOGY PERIOD 2 HMS ACTIVITIES (SCORE-FDI)” SNECMA FLPP’s sub-contract to Deimos Space. Responsibility: Deimos project manager and technical lead in charge of demonstrating H-infinity based fault detection and isolation algorithms in a simulation model of the FLPP Stage Combustion Rocket Engine Demonstrator (SCORE-D).</p>	<p>Jan 2011 – Dec 2012</p>
<p>“UNMANNED AERIAL VEHICLE PLATFORM (UAVPLAT)” Deimos Space internal project. Responsibility: Project co-manager and technical lead in charge of GNC activities and of the development of the simulator and platform development.</p>	<p>Jun 2011 – Sept 2011</p>

<p>“UAV BASED SPACE TECHNOLOGY INVESTIGATION (PERIGEO)” Spanish INNPRONTA CDTI contract coordinated by Deimos Space. Responsibility: WP2 “Advanced Control” coordinator. The project aims to advance the technological readiness of advanced space technologies through their application to dual synthetic simulation environments and to a fleet of indoor and outdoor unmanned aerial vehicles,</p>	<p>Jan 2012 – until my end at Deimos</p>
<p>“RECONFIGURATION OF CONTROL IN FLIGHT FOR INTEGRAL GLOBAL UPSET RECOVERY (RECONFIGURE)”, European FP7 CP-FP project coordinated by Deimos Space. Responsibility: Project coordinator and Deimos technical lead. The project aims to provide model-based fault tolerant control solutions to Airbus aircraft while advancing the current methods for future needs.</p>	<p>Jan 2013 – until my end at Deimos</p>
<p>“ANALYTIC STOCHASTIC & TIME VARYING MU ANALYSIS FOR THE VEGA GNC (VVPProb)” ESA/ESTEC EXPRO project (first part) study advanced probabilistic and time varying analysis based on structured singular value (mu) and their application to the European VEGA launcher using a high-fidelity nonlinear simulator, and in a 2nd phase: design advanced controllers for VEGA mission vv05.</p>	<p>Jun 2014 – Dec 2015</p>
<p>“ROBUST & ADAPTABLE LAUNCHER TVC CONTROL SYSTEMS FOR THE VEGA EVOLUTION” ESA/ESTEC Network Partnering Initiative (with EPSRC fees contribution) awarded to fund a PhD student to investigate linear parameter varying and adaptive control techniques for VEGA Evolution.</p>	<p>Jun 2015 – Dec 2018</p>
<p>“VALIDATION INTEGRATED SAFETY-ENHANCED INTELLIGENT FLIGHT CONTROL (VISION)” EU H2020 aeronautics international collaboration project with Japan (NEDO), coordinated by ONERA and University of Tokyo. Aim: Validate through flight tests smarter technologies for aircraft GN&C for Vision-based systems and advanced detection and resilient methods. Responsibilities: core proposal team, leader of WP5 “dissemination” and UoB PI.</p>	<p>Jan 2016 – Dec 2019</p>
<p>“ROBUST NONLINEAR GUIDANCE AND CONTROL FOR LANDING ON SMALL BODIES” UK Space Agency project led by Airbus D&S (Stevenage). Aim: Develop a design/analysis framework for Guidance and Control, including methodological G&C tuning laws, for Space exploration of Phobos.</p>	<p>Apr 2016 – Apr 2017</p>
<p>“ADVANCED FLIGHT CONTROL SYSTEM DESIGN WITH ACTIVE LOAD & RELIEF CAPABILITIES” German Aerospace Center (Bremen) contract, from an ESA/ESTEC Network Partnering Initiative, to fund a PhD student to investigate launcher control with active (wind and gust) load and relief capabilities.</p>	<p>Jan 2017 – Dec 2019</p>

PROFESSIONAL SERVICE

Organization Workshops & Conferences

- **EU/IEEE-CSS Workshop on Industrial and Academic Experience in Aerospace Fault Detection and Diagnosis**, Toulouse, FR, Oct-2012 (28 speakers / 55 attendees) Co-organized with Dr. P. Goupil (Airbus)
- **International Workshop on Robust Modeling, Design and Analysis: Methods, Tools and Applications**, Bristol, UK, September 2017 (17 speakers / 56 attendees) Co-organized with J.M. Biannic (ONERA)

Organization Conference Invited Sessions (within parentheses number of papers)

- **2009 IFAC SAFEPROCESS** “*European research in aerospace FDI, FTC & HMS*,” with AV ⁴ (6)
- **2009 AIAA GNC** “*LPV Modeling, Analysis and Design Techniques for Re-entry Vehicles*,” with SB (6)
- **2010 AIAA GNC** “*Advances in Automatic Control for EU Space Transportation Systems*,” with SB & MG (6)
- **2011 AIAA GNC** “*Advanced Fault Diagnosis for Sustainable Flight Guidance and Control*,” with PG (7)
- **2012 AIAA GNC** “*Robust Launcher Flight Control System Design Verification and Validation*,” with SB (4)
- **2012 IFAC SAFEPROCESS** “*EU efforts towards Advanced Fault Diagnosis: ADDSAFE-Part1*” with AV (6)
- **2012 IFAC SAFEPROCESS** “*EU efforts towards Advanced Fault Diagnosis: ADDSAFE-Part2*” with PG (7)
- **2014 IFAC World** “*Bridging Gap Academia and Industry: Successful Aerospace Collaborations*” with PG (6)
- **2015 CEAS EUROGNC** “*Worst-case V&V Applications for Aerospace GNC systems: Part-1*”, with SB (4)
- **2015 CEAS EUROGNC** “*Worst-case V&V Applications for Aerospace GNC systems: Part-2*” with SB (4)

Editor of Journal Invited Issues

- **Control Engineering Practice** “*Advanced Fault Diagnosis for Sustainable Flight Control - The European ADDSAFE Project*” with PG and AV (7 peer-reviewed articles). CEP Vol.31, Oct 2014
- **International Journal of Robust and Nonlinear Control** “*Linear parameter varying systems*” with CE and GB (6 peer-reviewed articles). IJRNC, Vol.24, Iss.14, September 2014

Professional Committees Participation

- **IFAC Pilot Industrial Committee**. August 2015 → June 2017
- **IFAC Industrial Committee**. June 2017 →

⁴ **Co-organizers:** SB (Samir Bennani, ESA-ESTEC), PG (Philippe Goupil, Airbus), AV (Andras Varga, DLR), GB (Gary Balas, UMN), MG (Martine Ganet, Astrium) and CE (Chris Edwards, Exeter University).

Conferences International Program Committee Member

- 2nd IEEE Multi-Conference on Systems and Control (MSC'08), San Antonio, September 2008
- 10th EUCA European Control Conference (ECC'09), Budapest, August 2009
- 1st IEEE Conference on Control and Fault-Tolerant Systems (SYTOL'10), Nice, October 2010
- 9th European Workshop on Advanced Control and Diagnosis (ACD'11), Hungary, November 2011
- 2nd IEEE Conference on Control and Fault-Tolerant Systems (SYTOL'13), Nice, , October 2013
- 10th International Conference on Intelligent Unmanned Systems (ICIUS'14), Montreal, Sept 2014
- 11th International Conference on Advanced Control and Diagnosis (ACD'14), Berlin, November 2014
- 1st IFAC Workshop on Linear Parameter Varying Systems (LPVS'15), Grenoble, October 2015
- 12th European Workshop on Advanced Control and Diagnosis (ACD'15), Pilsen, November 2015
- 3rd IEEE Conference on Control and Fault-Tolerant Systems (SYTOL'16), Barcelona, September 2016
- 2nd IFAC Workshop on Linear Parameter Varying Systems (LPVS'15), Florianopolis, September 2017

Journal Review

- IEEE Control System Technology & IEEE Transactions on Automatic Control
- AIAA Journal of Guidance, Dynamics and Control
- IFAC Control Engineering Practice & IFAC Automatica
- Asian Journal of Control
- European Journal of Control
- Aerospace Science & Technology
- International Journal of System Science
- Multidimensional Systems & Signal Process
- Automatic Control in Aerospace ...

Conferences Review

- American Control Conference
- AIAA Guidance, Navigation and Control Conference
- IEEE Conference on Decision and Control
- IEEE Conference on Control Applications
- IEEE Conference on Control and Fault-Tolerant Systems
- IFAC SAFEPROCESS
- IFAC Symposium on Automatic Control in Aerospace
- EUCA European Control Conference
- International Conference on Advanced Control and Diagnosis ...

OTHER

- Languages:** Spanish (Native)
English (fluent oral and writing)
French (Institut Français, Intermediate Level B1.1).
- Computer:** Matlab, Mathematica, Maple, XML, Windows Word/Excel/PowerPoint/Projects.
- Management:** 40hrs "Project Jump Start" project management course by International Institute for Learning.

SCOPUS INDEXES December 2017

Documents: 84

Citations: 913 total citations by 699 documents

h-index: 14

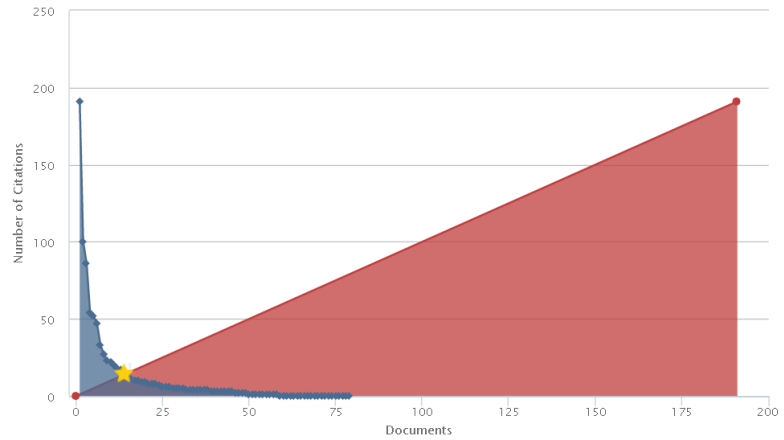
Co-authors: 67

Analyze documents published between: 2001 to 2017 Exclude self citations Exclude citations from books [Update Graph](#)

Documents	Citations	Title
1	191	Development of Linear-Parameter-V...
2	100	An application of H^∞ fault detection...
3	86	Reconfigurable LPV control design f...
4	54	A robust integrated controller/diagno...
5	52	Linear parameter-varying detection f...
6	47	Fault reconstruction using a LPV sli...
7	33	Linear parameter varying modeling ...
8	27	Robustness analysis of a reusable l...
9	23	Advanced diagnosis for sustainable ...
10	22	AIRBUS efforts towards advanced r...
11	20	Application of H^∞ fault detection and...
12	18	An architecture for design and analy...
13	17	A symbolic matrix decomposition al...
14	15	The European ADDSAFE project. In...
15	12	Application of LPV modeling, design ...
16	11	Application of LPV/LFT modeling an...

This author's h-index is 14

The h-index is based upon the number of documents and number of citations.



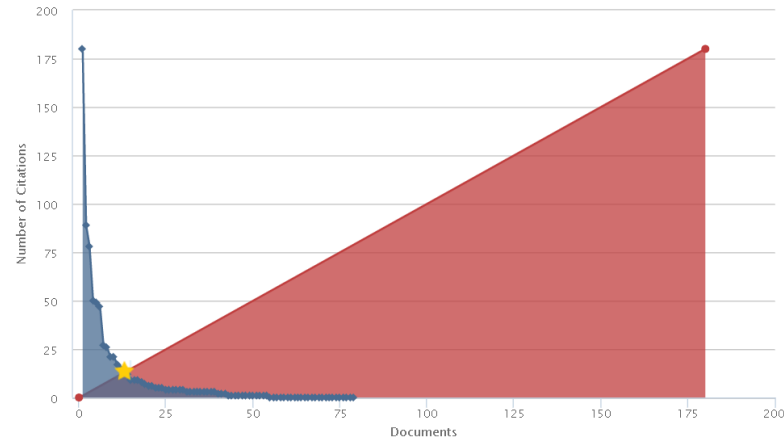
Note: Scopus is in progress of updating pre-1996 cited references going back to 1970. The h-index might increase over time.

Analyze documents published between: 2001 to 2017 Exclude self citations Exclude citations from books [Update Graph](#)

Documents	Citations	Title
1	180	Development of Linear-Parameter-V...
2	89	An application of H^∞ fault detection...
3	78	Reconfigurable LPV control design f...
4	50	Linear parameter-varying detection f...
5	49	A robust integrated controller/diagno...
6	47	Fault reconstruction using a LPV sli...
7	27	Linear parameter varying modeling ...
8	26	Robustness analysis of a reusable l...
9	21	Advanced diagnosis for sustainable ...
10	21	AIRBUS efforts towards advanced r...
11	17	Application of H^∞ fault detection and...
12	15	An architecture for design and analy...
13	14	The European ADDSAFE project. In...
14	12	Application of LPV modeling, design ...
15	9	A symbolic matrix decomposition al...
16	9	Industrial benchmarking and evaluati...

This author's h-index is 13

The h-index is based upon the number of documents and number of citations.

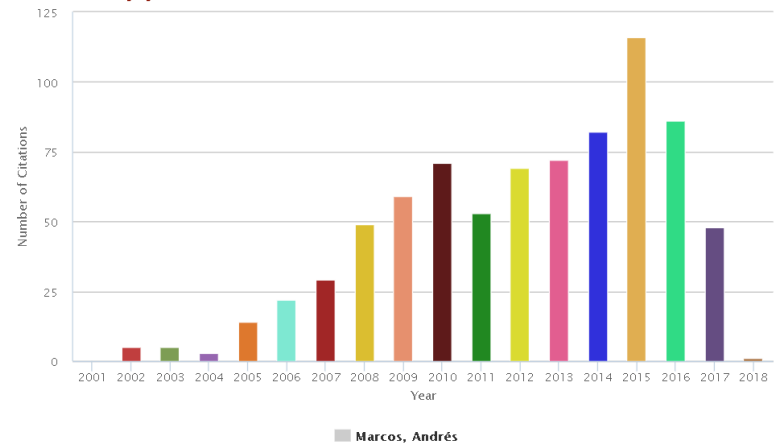


Note: Scopus is in progress of updating pre-1996 cited references going back to 1970. The h-index might increase over time.

Analyze documents published between: 2001 to 2017 [Update Graph](#)

Year	Citations
2018	1
2017	48
2016	86
2015	116
2014	82
2013	72
2012	69
2011	53
2010	71
2009	58
2008	49
2007	28
2006	22
2005	14
2004	3
2003	5

Citations by year



Note: Scopus is in progress of updating pre-1996 cited references going back to 1970. Pre-1996 citation counts might increase over time.

RESEARCH GATE INDEXES December 2017

RG Score: 21.84

Research Items: 93

Reads: 2,579

Citations: 925