

Curriculum Vitæ

Fernando José Parracho Lau

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1. PERSONAL DATA

Birthdate:	July 4, 1969	
Birthplace:	Barreiro, Portugal	
Citizenship:	Portuguese	
Status:	Single	
Home Address		
Rua Abade Faria, 35 1º Dto., 1900 — 003 Lisboa Tel: (351) 210 113 606		
Work Address		
Instituto Superior Técnico, Dep. de Eng. Mecânica Sec. Mec. Aeroesp. (Gab. 9), Pav. de Mecânica I Av. Rovisco Pais, 1049-001 Lisboa, PORTUGAL		
Phone: (351) 218417198 Fax: (351) 218419471		
E-mail: lau@ist.utl.pt		

2. ACADEMIC BACKGROUND

- ◆ **Ph.D.** Aerospace Engineering, Instituto superior Tecnico, Universidade 2000
Técnica de Lisboa., Portugal.

- ◆ **M. Sc.** Mechanical Engineering, Instituto superior Tecnico, Universidade 1995
Técnica de Lisboa., Portugal.

- ◆ **M. Sc.** Physics Engineering, Instituto superior Tecnico, Universidade 1992
Técnica de Lisboa., Portugal

3. ACADEMIC CARRER

- **Assistant Professor with Tenure**
Instituto Superior Técnico, Departamento de Engenharia Mecânica, Secção de Mecânica Aeroespacial, 2000 – Present.

- **Teaching Assistant**
Instituto Superior Técnico, Departamento de Engenharia Mecânica, Secção de Mecânica Aeroespacial, 1995 – 2000.

- **Trainee Lecturer**
Instituto Superior Técnico, Departamento de Engenharia Mecânica, Secção de Mecânica Aeroespacial, 1992 – 1995.

- **JNICT Scholar** (Bolsa de Jovens Investigadores),
INESC, 1991 – 1992.

- **Teaching Assistant**
Instituto Superior Técnico, Departamento de Física,
2nd semester, 1990/1991.

4. PEDAGOGICAL/TEACHING ACTIVITY

4.1 TEACHING ACTIVITY

▪ Undergraduate Courses in IST, UTL, Portugal

- Lecturer for the Group of Disciplines in Mechanical Engineering, 1992-2014:
 - Applied Mechanics - Statics (2nd year).
 - Applied Mechanics – Dynamics (2nd year).
- Lecturer for the Group of Disciplines in Aerospace Engineering, 2000-2014:
 - Aerospace Seminar (2nd year);
 - Aircraft Structures (4th year);
 - Flight Stability (3rd year).
 - Aeroacoustics (5th year).

▪ Graduate Course in IST, UTL, Portugal

- Aeroacoustics, Aerospace Engineering Post-Graduate Program.

4.2 LECTURE NOTES

Gil, P. J. S & Lau, F. J. P., *Elementos de Multiplicidades* (Applied Mechanics -Statics), IST, 2001.

Lau, F. J. P. & Gil, P. J. S., *Elementos of Análise Tensorial* (Applied Mechanics - Dynamics), IST, 2001.

Lau, F. J. P., *Elementos de Aeroacústica*, IST, 2005.

4.3 STUDENTS SUPERVISION

- Rudolfo Condessa, 2001, Microgravity experiment hardware for perfusion systems.
- Ricardo Reis, 2002, T6 Project: Structural viability study of engine replacement.
- Filipa Andreia de Matos Moleiro, 2003, Estruturas aeroelásticas adaptativas com aplicação a UAVs.
- Filipe Elvis Breda dos Santos, 2004, Airline Structural Repair Engineering.

- Pedro Miguel Ámen de Aguiar, 2004, EMBRAER 170: Análise estrutural estática das portas do trem de aterragem.
- David Ferreira, 2005, Projecto de uma aeronave com um desempenho otimizado para cada fase de voo utilizando tecnologia Morphing.
- João Alexandre da Conceição Ferreira, 2005, Caracterização dos níveis de ruído emitidos pelas diferentes Companhias Aéreas e tipos de Aeronaves que operam no Aeroporto de Lisboa, ANA – Aeroportos de Portugal.
- Pedro Manuel Magalhães da Costa Aleixo, 2007, Morphing aircraft structures: fluid-structure interaction modeling and WT testing.
- Luís Filipe da Conceição Vargas, 2007, Ruído de Turbinas Eólicas.
- David Fernandes Coimbra, 2009, Teste analítico e experimental da extensão diferencial de uma asa telescópica de modo a controlar o rolamento.
- Duarte Filipe Nunes Sousa, 2009, Topology Optimization of the Flow Induced Vibration of a Fuselage Panel.
- David Fernandes Coimbra, 2010, Teste analítico e experimental da extensão diferencial de uma asa telescópica de modo a controlar o rolamento.
- Bernardo Medina dos Santos Cunha, 2011, Development of Control Strategies for the Joined-Wing Aircraft.
- Guilherme Botelho de Oliveira e Silva 2011, Desenvolvimento de uma Turbina Eólica de Eixo Vertical.
- Pedro Vaz Dias Lopes Paulo, 2011, A TIME-domain methodology for rotor dynamics: analysis and force identification.
- Rafael José Castro de Carvalho, 2012, A FREQUENCY-domain methodology for rotordynamics: analysis and force identification.
- Mário André Ribeiro Brás, 2012, Flight Dynamics and Control of a Vertical Tailless Aircraft .
- Gonçalo Valente da Silva Leal, 2013, Validation of a Tool for Subsonic Flutter Analysis of Straight Cantilever Wings.
- Ana Elisa Alves Vieira, 62709, 2013, Helicopter Rotor Noise: Development of an Acoustic Software.
- João Filipe Caetano de Santana, 2013, New Methodologies of Integrated Development in Aeronautical Structures - Implementation of Knowledge Management Strategy in CEIIA.
- Jorge André Fernandes Baginha, 2013, Construção de uma Ferramenta Computacional para a Simulação Aerodinâmica de um conjunto Asa e Flap.
- Filipe Miguel Carrapato Sousa, 2013, Topology Optimization of a Wing Structure: Studies on Morphing Compliant Edges.
- João Luís Aguiar Oliveira Rosa, 2014, Modal Decomposition on Sound Propagation in Ducts with and without Flow.

- Miguel Afonso Rita, 2014, A350 Take-off Configuration Optimization using a Surrogate-based Steepest Descent Method.
- David Ramos Benfica de Melo, 2014, Composite structures impact simulation behavior.
- Sebastião Pedro Arrais Ivens Collares Pereira, 2015, Implementing a Design to Cost Strategy in a Complex Aerospace Design Project.
- Alexandre Santos Cunha Medeiros Pacheco, 2015, Acoustical Characterization and Optimization of a Kitchen Hood.
- José Ricardo Teixeira Fernandes 2015, Development of a Propulsion Model for a MDO Framework: Mission-based Optimization.
- José Miguel Vasconcelos Oliveira, 2015, Development of Operating Cost Models for the Preliminary Design Optimization of an Aircraft.

4.4 MANAGEMENT

- Adjunct Coordinator, Master in Aerospace Engineering, 2003 – Present.
- Coordination of the Accreditation Process of the Master in Aerospace Engineering, at the Professional Engineering Association, 2005.

5. RESEARCH ACTIVITY

5.1 RESEARCH INSTITUTES/LABORATORY

- ♦ Researcher, CCTAE – Centro de Ciências e Tecnologias Aeronáuticas e Espaciais. **2006 – Present**
- ♦ Researcher, ISR – Instituto de Sistemas e Robótica – Lisboa **2000 – 2006**

5.2 RESEARCH FIELDS AND INTERESTS

- Aeroacoustics
- Aeroelasticity
- Computational Mechanics

5.3 COLABORATION IN RESEARCH PROJECTS

- [SNAAP: Study of Noise and Aerodynamics of Advanced Propellers](#) (1992-1994). European Project in the 3rd Frame Program (Intermediate Aeronautics Programme). **Prime Contractor:** Alenia.
- [APIAN: Advanced Propulsion Integration of Aerodynamics and Noise](#) (1996-2000). European Project in the 4th Frame Program (Industrial and Materials Technology/Aeronautics sub-Programme). **Prime Contractor:** Aerospatiale.
- [Problemas de Interação Fluido-Estrutura e Projecto em Veículos Submarinos Adaptativos](#) — POCTI/EME/33558/99 (2000 – 2003). **Principal Investigator:** Prof. Afzal Suleman, IST.
- [3AS: Active Aeroelastic Aircraft Structures](#) — Project No. GRD-1-2001-40122 (2002 – 2005). **Prime Contractor:** EADS-DASA.
- [FRIENDCOPTER: Integration of Technologies in Support of a Passenger and Environmentally Friendly Helicopter](#). European Integrated Project (2004 – 2008). **Prime Contractor:** VERTAIR EEIG.
- [Artima: Aircraft Reliability Through Intelligent Materials Application](#) — Project No. AST3-CT-2004-50272 (2002 – 2006). Project funded by the European Community under the 6th Framework Programme. **Prime Contractor:** AERnova
- [NOVEMOR: Novel Air Vehicles Configurations: From Fluttering Wings to Morphing Flight](#) — Project No. ACP1-GA-2011-285395 (2011 – 2014). Project funded by the European Community under the 7th Framework Programme. **Prime Contractor:** Instituto Superior Técnico

- **ADIST - AD0141 - TEKA-AIR** — Project in collaboration with TEKA Portugal (2014-2015)

5.4 TRAINING OF HIGHLY QUALIFIED PERSONNEL

1. **MSc**, J. Vale (with A. Suleman, UVic), Morphing Aircraft, 2007.
2. **MSc**, L. Almeida (with A. Suleman, UVic), Conceptual Design of Joined Wing Aircraft, 2008.
3. **Ph.D.**, Joana Rocha (with A. Suleman, UVic), Coupled Structural-Acoustic Analytical Models for the Prediction of Turbulent, 2010.
4. **Ph.D.**, José Lobo do Vale (with A. Suleman), Development of Computational and Experimental Models for the Synthesis of Span and Camber Morphing Aircraft Technologies, 2012.

5.5 SCIENTIFIC COMMITTEES AND POLICY BOARD

- Portuguese National Contact Point, Aeronautics and Space, in the 6th Framework Program, 2004 - 2007.
- Evaluator for the Portuguese ADI Agency, 2006, 2010 - 2012.
- European Expert Evaluator, 7th Framework Program, 2007.

5.6 SEMINARS AND KEYNOTE LECTURES

Realidade Actual e Evolução Prevista para os Centros de Pesquisa e desenvolvimento em Portugal, 1as Jornadas de Engenharia Aeronáutica, Ordem dos Engenheiros, 28 de Fevereiro de 2002.

Ensino e Investigação de Aeronáutica em Portugal, Jornadas de Aeronáutica da Covilhã, 2002.

Investigação em Aeroacústica, Apresentação na Semana Aeroespacial no IST, 20 a 24 de Maio de 2002.

Estratégia de desenvolvimento do Sector Aeroespacial, Fragmentação das cadeias de Valor nas Indústrias globais e modulares - tendências mundiais e oportunidades para Portugal, dPP – Departamento de Prospectiva e Planeamento (Ministério do Planeamento), 3 de Novembro de 2004.

6. PUBLICATIONS

6.1 THESES

- *Propagação do Som em Tuberias de Secção Variável*, M.Sc. Thesis, 1995, IST, UTL.
- *Acústica de Tuberias, Hélices e Rotores*, Ph.D. Thesis, 2000, IST, UTL.

6.2 PUBLICATIONS IN REFEREED JOURNALS

Campos, L. M. B. C. & Lau, F. J. P. 1996, *On the Acoustics of low Mach Number Bulged, Throated and Baffled Nozzles*, Journal of Sound and Vibration, 196, 611-633.

Campos, L. M. B. C. & Lau, F. J. P. 1996, *On sound in an inverse sinusoidal nozzle with low Mach number mean flow*, Journal of the Acoustical Society of America, 100, 355-363.

Campos, L. M. B. C. & Lau, F. J. P. 2001, *On the convection of sound in inverse catenoidal nozzles*, Journal of Sound and Vibration, 244, 195-209.

Lau, F. J. P. & Campos, L. M. B. C. 2003. *On the effect of wall undulations on the acoustics of ducts with flow*, Journal of Sound and Vibration, 270, 361-378.

P. Gamboa, J. Vale, F. J. P. Lau, & A. Suleman 2009. *Optimization of a Morphing Wing Based on Coupled Aerodynamic and Structural Constraints*, AIAA Journal, 47(9), 2087-2104.

L. M. B. C. Campos & F. J. P. Lau 2009. *On Active Noise Reduction in a Cylindrical Duct with Flow*, International Journal of Acoustics and Vibration, 14(3), 1-14.

Joana da Rocha, Afzal Suleman, and Fernando Lau 2009, "Prediction of flow-induced noise in transport vehicles: development and validation of a coupled structural-acoustic analytical framework", Canadian Acoustics, 37 (4), 13-29.

[Received the "Directors' Award of the Canadian Acoustical Association for the Best Student Paper in Canadian Acoustics for the 2009 year"]

Joana da Rocha, A. Suleman and F. Lau 2010, "Turbulent Boundary Layer Induced Noise and Vibration of a Multi-Panel Walled Acoustic Enclosure". Canadian Acoustics, Vol. 38, No. 4, pp. 9-22.

Joana da Rocha, A. Suleman and F. J. P. Lau 2011, "Flow-Induced Noise and Vibration in Aircraft Cylindrical Cabins". Journal of Vibration and Acoustics, Vol. 133, No. 5.

J. Vale, A. Leite, F. Lau, & A. Suleman 2011, Aero-Structural Optimization and Performance Evaluation of a Morphing Wing with Variable Span and Camber, JOURNAL OF INTELLIGENT MATERIAL SYSTEMS AND STRUCTURES, 22,1057-1073.

L. M. B. C. Campos and F.J.P. Lau 2012, "On sound generation by moving surfaces and convected sources in a flow", *International Journal of Aeroacoustics*, 11 (1), 103-136.

J. Rocha, A. Suleman and F.J.P. Lau 2012, "Prediction of Turbulent Boundary Layer Induced Noise in the Cabin of a BWB Aircraft". *J. Shock and Vibration*, Vol. 19, No. 4.

M. Bras, J. Vale, F. Lau and A. Suleman 2013, "Flight Dynamics and Control of a Vertical Tailless Aircraft", *J. Aeronaut. Aerospace Eng.*, 2(4).

J. Vale, F. Lau and A. Suleman 2013, "Energy Efficiency Studies of A Morphing Unmanned Aircraft", *J. Aeronaut. Aerospace Eng.*, 2(4).

Bras M., Vale J., Lau F and Suleman A. 2013, "Flight Dynamics and Control of a Vertical Tailless Aircraft", *J Aeronaut Aerospace Eng.*, 2:119.

L.M.B.C. Campos & F.J.P. Lau 2014, "On a generalized multipole expansion with application to propeller design synthesis", *International Journal of Aeroacoustics*, volume 13, pages 553-586.

L.M.B.C. Campos & F.J.P. Lau 2014, "On the Debye-Huckel effect of electric screening", *Physics of Plasmas*, volume 21, pages 1-16.

Ana Vieira, Fernando Lau, João Pedro Mortágua, Luís Cruz, Rui Santos 2015, "A New Computational Tool for Noise Prediction of Rotating Surfaces (FACT)", *World Academy of Science, Engineering and Technology, International Journal of Mechanical, Aerospace, Industrial, Mechatronic and Manufacturing Engineering*, 9 (2), 330-339.

F. Afonso, J. Vale, É. Oliveira, F. Lau and A. Suleman 2016, "Non-linear aeroelastic analysis in the time domain of high-aspect-ratio wings: effect of chord and taper-ratio variation", *The Aeronautical Journal* (In Press).

F. Afonso, G. Leal, J. Vale, É. Oliveira, F. Lau and A. Suleman 2016, "A Study on the Effect of Stiffness and Geometric Parameters on the Nonlinear Aeroelastic Performance of High Aspect-Ratio Wings", *Proc IMech Part G: J Aerospace Engineering* (In Press).

6.3 CONFERENCE PROCEEDINGS AND SYMPOSIA

Campos, L. M. B. C. & Lau, F. J. P. 2000. On an analytical model for blade-vortex interaction noise, 26th European Rotorcraft Forum, Hague.

Lau, F. J. P. & Campos, L. M. B. C. 2003, *Propagação Sonora numa Tubeira Cilindrica com Perturbação*, VII CONGRESSO DE MECÂNICA APLICADA E COMPUTACIONAL, Universidade de Évora, 14 a 16 de Abril de 2003.

Campos, L. M. B. C. & Lau, F. J. P. 2004, On the shielding of engine noise by an aircraft wing, 24th International Congress of the Aeronautical Sciences, Yokohama, Japan.

Campos, L. M. B. C. & Lau, F. J. P. 2004, On the 3D Effect of Noise Source Position Relative to a Flat Plate, 10th AIAA/CEAS Aeroacoustics Conference, Manchester, UK, AIAA-2004-2868.

Vale, J., Lau, F. J. P., Gamboa, P. & Suleman, A. 2006, *Multidisciplinary Design Optimization of a Morphing Wing for an Experimental UAV*, 11th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, Portsmouth, VA, USA, September 6-8.

Suleman, A., Lau, F. J. P., Vale, J. & Gamboa, P. 2007, *Optimization of a Morphing Wing Based on Coupled Aerodynamic and Structural Constraints*, 48th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, Honolulu, Hawaii, USA, April 23-26, Paper No. AIAA-2007-1890.

Gomes, A., A. & Lau, F. J. P., 2007, Topology Optimization of Wing Support for Attenuation of Forced Vibrational Response, CMNE / CILAMCE 2007 Conference, Portugal, Porto, 13 - 15 June 2007.

A. A. Gomes & F. J. P. Lau 2008, *Attenuation of the Flow Induced Vibration of a Plate by Topology Optimization of the bending and torsion properties of the Supports*, CST2008, Athens, Greece, 2 - 5 September 2008.

A. A. Gomes & F. J. P. Lau 2008, Topology Optimization for the Attenuation of Flow Induced Vibration of a Plate, 12th AIAA/ISSMO Multidisciplinary Analysis and Optimization Conference, Victoria, British Columbia, Canada, 10 - 12 September 2008.

F. J. P. Lau & J. M. G. S. Oliveira 2008, Acoustics of Low Mach Number Nozzles with Area Expansions, Acoustics'08, Paris, France, 29 June - 4 July 2008.

A. A. Gomes, F. J. P. Lau & D. Sousa 2009, *Optimization for The Attenuation Of Flow Induced Vibration Of A Fuselage Plate*, 8th World Congress on Structural and Multidisciplinary Optimization, Lisbon, Portugal, 1 - 5 June 2009.

M. Neves, F. Mendonça, F. J. P. Lau, S. Gerges & J. B. Coelho 2009, *On The Effect Of Undamped Frequency Maximization For The Turbulent Flow-Induced Vibrations Of A Viscoelastically Supported Plate*, 8th World Congress on Structural and Multidisciplinary Optimization, Lisbon, Portugal, 1 - 5 June 2009.

L. F. C. vargas, F. J. P. Lau & J. M. G. S. Oliveira 2009, *Development of a Wind Turbine Noise prediction Model*, 7th EUROMECH Solid Mechanics Conference, Lisbon, Portugal, 7 - 11 September 2009.

L.M.B.C. Campos & F.J.P. Lau 2010, "On the generation of sound by moving surfaces in a potential flow", 14th Confederation of European Aeronautics Society – Aeroacoustics Sub-Committee (CEAS-ASC) Workshop, Warsaw, 7 – 8 October 2010. .

J. Rocha, A. Suleman, and F.J.P. Lau 2010, "Prediction of Turbulent Flow-Induced Noise in Aircraft Cabins," Proceedings of the ASME 2010 International Mechanical Engineering Congress and Exposition (IMECE 2010), Vancouver, BC, Canada, November 12-19.

J. Rocha, A. Suleman, and F.J.P. Lau 2010, "Flow-induced Noise in Aircraft Cylindrical Cabins: Analytical Model Validation," Proceedings of the 39th International Congress and Exposition on Noise Control Engineering (INTER-NOISE 2010), Lisbon, Portugal, June 13-16, 2010; also presented at the Canadian Acoustical Association Symposium 2010 Proceedings – Acoustic Week in Canada, Victoria, B.C., Canada, October 13-15.

J. Rocha, A. Suleman, and F.J.P. Lau 2010, "An Accurate Coupled Structural –Acoustic Analytical Framework for the Prediction of Random and Flow-Induced Noise in Transport Vehicles: Its Validation," Canadian Acoustical Association Symposium 2010 Proceedings – Acoustic Week in Canada, Niagara-on-the-Lake, ON, Canada, October 14-16.

J. Rocha, A. Suleman, and F.J.P. Lau 2010, "Turbulent Flow-Induced Noise in the Cabin of a BWB Aircraft," Proceedings of the Canadian Society for Mechanical Engineering Forum 2010 (CSME 2010), Victoria, BC, Canada, June 7-9.

J. Vale, F.J.P. Lau, and A. Suleman 2010, "Development of an Adaptive Camber Capability for a Telescopic Morphing Wing," S(3)T2010 - School and Symposium on Smart Structural Systems Technologies, Porto, Portugal, April 6-9.

J. Vale, F.J.P. Lau, and A. Suleman 2010, "Development of Camber Morphing Capability in a Telescopic Morphing Wing," 2nd International Conference on Engineering Optimization, Lisbon, Portugal, September 6 - 9.

L.M.B.C. Campos & F.J.P. Lau 2011, "On sound generation by moving surfaces", 18th International Congress of Sound and Vibration, Rio de Janeiro

L.M.B.C. Campos & F.J.P. Lau 2011, "On propeller acoustic design synthesis with application to angular inflow", 18th International Congress of Sound and Vibration, Rio de Janeiro.

L.M.B.C. Campos & F.J.P. Lau 2012, "On sound generation by moving surfaces and convected sources in flow", 28th International Congress of Aeronautical Sciences, Brisbane.

J. Vale, F. Lau & A. Suleman 2012, "Static and Dynamic Analysis and Comparison of Fixed and Morphing Wing Equipped UAV Aircraft: Optimal Control Calculation and

Energy Estimates Evaluation”, 3rd Aircraft Structural Design Conference, 9 – 11 October 2012, Delft University, The Netherlands.

J. Vale, F. Lau & A. Suleman 2012, “Energy Balance Studies on Aircraft Morphing Technologies”, AVT-209 Workshop on “Energy Efficient Technologies and Concepts of Operation”, 22-24 October 2012, Lisbon, Portugal.

J. Vale, F. Lau & A. Suleman 2013, “Optimal control and energy balance evaluation of a morphing aircraft, ”54th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics, and Materials Conference, 8-11 April 2013, Boston, USA.

J. Vale, F. Afonso, F. Lau and A. Suleman 2014, "Performance Based MDO of a Regional Transport Aircraft with a Joined Wing Configuration", EngOpt 4th International Conference on Engineering Optimization, September 8 – 11, Lisbon, Portugal.

F. Afonso, J. Vale, F. Lau and A. Suleman 2014, "Multidisciplinary Performance Base Optimization of Aircraft", EngOpt 4th International Conference on Engineering Optimization, September 8 – 11, Lisbon, Portugal.

F.C. Sousa, F.P. Lau & A. Suleman 2014 “Topology optimization of a wing structure”, EngOpt 4th International Conference on Engineering Optimization, September 8 – 11, Lisbon, Portugal.

Suleman, A., Vale, J., Afonso, F., Lau, F. P., Ricci, S., Gaspari, A. D., Riccobene, L., Cavagna, L., Cooper, J., Lambert, L., Wales, C., Cheung, R., Nangia, R., Rizzi, A., Zhang, M., Monner, H.-P., de Kamp, B. V., Vasista, S., Morelli, M., Parizi, J., Odaguil, F., Lima, G., and Antunes, A., "Novel Air Vehicle Configurations: From Fluttering Wings to Morphing Flight," 11th World Congress on Computational Mechanics, Barcelona, Spain, 2014.

F. Afonso, J. Vale, F. Lau and A. Suleman 2014, “Multidisciplinary Performance Based Optimization of Morphing Aircraft”, 22nd AIAA/ASME/AHS Adaptive Structures, AIAA Science and Technology Forum and Exposition (SciTech 2014), January 13-17, 2014, National Harbor, Maryland, USA.

F. Afonso, J. Vale, F. Lau and A. Suleman 2014, “Multidisciplinary Performance Based Optimization of Aircraft”, International Conference in Engineering Optimization (EngOpt 2014), September, Lisbon, Portugal.

J. Vale, F. Afonso, F. Lau and A. Suleman 2014, “Performance Based MDO of a Regional Transport Aircraft with a Joined Wing Configuration”, International Conference in Engineering Optimization (EngOpt 2014), September, Lisbon, Portugal.

L. Amândio, A. Marta, F. Afonso, J. Vale and A. Suleman 2014, “Stochastic Optimization in Aircraft Design”, International Conference in Engineering Optimization (EngOpt 2014), September, 2014, Lisbon, Portugal.

J. Vale, F. Afonso, F. Lau and A. Suleman 2014, "Performance Based MDO of a morphing Joined-Wing aircraft concept", International Conference on Adaptive Structures and Technologies (ICAST 2014), October, The Hague, The Netherlands.

J. Vale, F. Afonso, F. Lau, A. Suleman, A. Antunes, F. Odaguil, G. Lima, J. Parizi and J. Cooper 2014, "Multidisciplinary design optimization of novel and morphing aircraft configurations: computational studies and experimental validation", 4th EASN Association International Workshop on Flight Physics & Aircraft Design (EASN 2014), October, Aachen, Germany.

M. Bras, F. Lau and A. Suleman 2015, "Flight Dynamics of an Aircraft Using a Morphing Tail Configuration", the 5th International Conference on smart Materials and Nanotechnology in Engineering, Vancouver, BC, Canada, 15-17 July.

F. Afonso, J. Vale, G. Leal, É. Oliveira, F. Lau and A. Suleman 2015, "Linear vs Non-linear Aeroelastic Analysis of High Aspect-Ratio Wings", Congress on Numerical Methods in Engineering (CMN 2015), June 29 – July 2, Lisbon, Portugal.

J. Vale, É. Oliveira, F. Afonso, F. Lau and A. Suleman 2015, "Active flutter suppression using aileron control", Congress on Numerical Methods in Engineering (CMN 2015), June 29 – July 2, Lisbon, Portugal.

7. PROFESSIONAL SOCIETIES AND ACTIVITY

7.1 PROFESSIONAL SOCIETIES

- Member Association of Professional Engineers of Portugal
- Member Executive Committee of Aeronautic Experts, in the Association of Professional Engineers, 2002 – 2007.
- Member Associação Portuguesa de Mecânica Teórica, Aplicada e Computacional

7.2 SHORT COURSES ATTENDED

- **Smart Materials, Structures & Aeroelasticity**, Oct. 27-29, 1998, IST/AFA, Portugal.
- **Computational & Experimental Aeroelasticity**, Sep. 27-30, 1999, IST/AFA, Portugal.
- **Small Satellites Technology**, Oct. 23-27, 2000, Lisbon, Portugal.
- **Fluid-Structure Interaction: from Fluttering Wings to Flapping Flight**, Oct. 15-17, 2001, Lisbon, Portugal.
- **Novel Aircraft Design Concepts for the 21st Century**, Lisboa, Portugal, Oct. 20-22, 2003, Lisbon, Portugal.
- **Disaster Management – Air and Space Based Technologies**, Sep. 25-27, 2006, Lisbon, Portugal.
- **Computational Aeroacoustics**, Von Karman Institute for Fluid Dynamics, Apr. 24-28, 2006, Brussels, Belgium.
- **Disaster Management – Air and Space Based Technologies**, Sep. 25-27, 2006, Lisbon, Portugal.