CURRICULUM VITAE

João Manuel Gonçalves de Sousa Oliveira

Address: Alameda das Linhas de Torres, 72, 1750-147 Lisboa, Portugal
Date of Birth: 6th October 1965

Academic Degrees

BSc in Physics, Faculty of Sciences of the University of Lisbon, July 1988.

MSc in Mechanical Engineering, Instituto Superior Técnico, Technical University of Lisbon, January 1993.

PhD in Mechanical Engineering, Instituto Superior Técnico, Technical University of Lisbon, Setembro de 2004.

Work Experience

- Researcher at the Centre of Atomic Physics with a Research scholarship from INIC (National Institute for Scientific Research) from October 1987 to September 1989, working in the project "Diagnostic of Plasmas by X-ray Detection".
- *Assistente Estagiário* at Instituto Superior Técnico (Departament of Mechanical Engineering), Technical University of Lisbon, from November de 1989 to August de 1992.
- Teacher at the Professional School “Val do Rio” from Setember 1992 to August 1994.
- Director de Artes Gráficas at Professional School “Val do Rio” from Setembro de 1994 e Setembro de 1996.
- Coordinator of Course of “Graphic Industries Technician” at Professional School “Val do Rio” from Setember de 1997 to August de 1998.
- *Assistente* at Instituto Superior Técnico Technical University of Lisbon (Departament of Mechanical Engineering) from Setember 1998 to Setember de 2004.
- Assistant Professor at Instituto Superior Técnico (Departament of Mechanical Engineering), Technical University of Lisbon from Setember 2004.

Publications

1. "On Sound Propagation in a Linear Shear Flow", L. M. B. C. Campos, J. M. G. S. Oliveira e M. H. Kobayashi, *Journal of Sound and Vibration*, **219** (5), 739–770, 4/2/1999.

2. "On the optimization of non-uniform acoustic liners on annular nozzles", L. M. B. C. Campos e J. M. G. S. Oliveira, *Journal of Sound and Vibration*, **275** (3-5), 557–576, 2004.
3. "On the acoustic modes in a cylindrical duct with an arbitrary wall impedance distribution", L. M. B. C. Campos e J. M. G. S. Oliveira, *Journal of the Acoustical Society of America*, **116** (6), 3336–3347, 2004.
4. "On the acoustic modes in a duct containing a parabolic shear flow", L. M. B. C. Campos & J. M. G. S. Oliveira. *Journal of Sound and Vibration*, Vol. **330**, No. 6, 14 March 2011, Pages 1166-1195.
5. "On sound generation in cylindrical flow ducts with non-uniform wall impedance", L. M. B. C. Campos & J. M. G. S. Oliveira. *International Journal of Aeroacoustics*, Volume **12**, Number 4, August 2013, pages 309-348. DOI 10.1260/1475-472X.12.4.309
6. "Sound propagation in acoustically lined elliptical ducts", J. M. G. S. Oliveira, P. J. S. Gil. *Journal of Sound and Vibration*, Vol **330**, Issue 16, 4 August 2014, pages 3743-3758.
(DOI: 10.1016/j.jsv.2014.03.041)
7. "On Sound Radiation from an Open-Ended Non-Uniformly Lined Cylindrical Nozzle", L. M. B. C. Campos & J. M. G. S. Oliveira, *Acta Acustica United with Acustica*, Vol **100**, Number 5, pages 795-809, September/October 2014.(DOI: http://dx.doi.org/10.3813/AAA.918759)

Papers Presented in International Congresses

1. "The W1 fluorescence yield of Yb (Z=70)", M. C. Martins, M. I. Marques, J. Oliveira, F. Parente and J. G. Ferreira, apresentado à X90-15th International Conference on X-Ray and Inner-Shell Processes, 9-13 July 1990, Tennessee, USA.
2. L. M. B. C. Campos, M. H. Kobayashi, J. L. Oliveira & P. G. S. Serrão, "On sound attenuattion in compressible and incompressible laminar boundary layers", *1st Joint CEAS/16th AIAA Aeroacoustics Conference*, München, Paper CEAS/AIAA-95-13, 1995.
3. L. M. B. C. Campos, J. M. G. S. Oliveira, P. G. T. A. Serrão & M. H. Kobayashi, "On sound transmission through boundary layers of aircraft fuselages and engine ducts", *20th Congress of International Council of Aeronautical Sciences,* Sorrento, 1996.
4. L. M. B. C. Campos, M. H. Kobayashi, P.G.T.A. Serrão & J.M.G.S. Oliveira,"On the scattering of sound by shear flows", Euromech, *3rd Europeam Fluid Mechanics Conference*, Göttingen, 1997.
5. L. M. B. C. Campos & J. M. G. S. Oliveira, "On the exact solution of the acoustic wave equation in a parabolic velocity profile in a hard-walled duct", Forum Acusticum, Berlin, 1999.
6. L. M. B. C. Campos & J. M. G. S. Oliveira, "On the effect of non-uniform wall impedance on the acoustics of nozzles", *23rd Congress, of the International Council of Aeronautical Sciences*, Toronto, 2002.

7. L. M. B. C. Campos & J. M. G. S. Oliveira “On the optimization of circumferentially non-uniform acoustic liners in annular ducts”, Paper AIAA-2004-3034, 10th AIAA/CEAS Aeroacoustics Conference, Manchester, United Kingdom, May 10-12, 2004.
8. L. M. B. C. Campos & J. M. G. S. Oliveira, “On sound attenuation in a nozzle with non-uniform lining”, *24th International Congress of Aeronautical Sciences, Paper P.25*, Yokohama, 29 Aug.– 3 Sept. 2004.
9. L. M. B. C. Campos & J. M. G. S. Oliveira, “On sound generation in cylindrical nozzles with non-uniform impedance”, Paper 245, Twelfth International Congress on Sound and Vibration, 11-14 July 2005, Lisbon, Portugal .
10. J. M. G. S. Oliveira & L. M. B. C. Campos, “On sound propagation in a cylindrical duct with parabolic mean flow”, Paper 246, Twelfth International Congress on Sound and Vibration, 11-14 July 2005, Lisbon, Portugal .
11. L.M.B.C. Campos & J.M.G.S. Oliveira “On the correlation of acoustic modes in a nozzle and in the far-field” 25th Congress of the International Council of Aeronautical Sciences (ICAS), Hamburg, 3– 8 Sept. 2006.
12. F. Lau, J. Oliveira (2008), “Acoustics of Low Mach Number Nozzles with Area Expansions”, Acoustics'08, Paris, 29 June-4 July 2008. Euronoise Session: NS07/3 - Aeroacoustics.
13. L. M. B. C. Campos, J. M. G. S Oliveira "On the effects on noise of sound reflection and atmospheric absorption", International Congress of Aeronautical Sciences ICAS 2008, Anchorage, Alaska. September 2008.
14. J. M. G. S. Oliveira, “Acoustics of annular ducts with impedance walls”, 16th International Congress of Sound and Vibration, 5-9 July 2009, Cracow, Poland.
15. L. Vargas, D. Rodrigues, J. M. G. S. Oliveira, F. J. P. Lau, “Development of a Wind Turbine Noise prediction Model”, *7th EUROMECH Solid Mechanics Conference*, 7-11 September 2009, IST, Portugal.
16. Propagation of sound in ducts with elliptical cross-section and lined walls, João Manuel Gonçalves de Sousa Oliveira, Paulo Jorge Soares Gil, 39th International Congress and Exposition on Noise Control Engineering: Inter-Noise 2010, Lisboa, 13-16/06/2010.
17. Ground Effects on Helicopter Noise, Luis Manuel Braga da Costa Campos, João Manuel Gonçalves de Sousa Oliveira, 39th International Congress and Exposition on Noise Control Engineering: Inter-Noise 2010, Lisboa, 13-16/06/2010.
18. Sound propagation in lined Ducts with Circular and Elliptical Cross Section, João Manuel Gonçalves de Sousa Oliveira and Paulo Jorge Soares Gil, XX Conference on Acoustic and Biomedical Engineering, 15-19/4/2013, Zakopane, Poland.
19. Recent Research on Acoustics at IST Lisbon, João Manuel Gonçalves de Sousa Oliveira, XX Conference on Acoustic and Biomedical Engineering, 15-19/4/2013, Zakopane, Poland.
20. On Sound Radiation from an Open-Ended Non-Uniformly Lined Cylindrical Nozzle, Luís Manuel Braga da Costa Campos and João Manuel Gonçalves de Sousa Oliveira, ICEDyn 2013 (International Conference on Structural Engineering Dynamics), 17-19/6/2013, Sesimbra, Portugal.
21. “Sound propagation in infinite elliptical ducts with acoustically lined walls”, J. M. G. S. Oliveira and P. J. S. Gil, Forum Acusticum 2014, 7-12/9/2014, Cracow, Poland.

22. "On sound generation in cylindrical flow ducts with non-uniform wall impedance", L. M. B. C. Campos and J. M. G. S. Oliveira, Forum Acusticum 2014, 7-12/09/2014, Cracow, Poland

Scientific Supervision

Co-supervisor of the dissertation of Master in Aerospace Engineering of Luís F. C. Vargas, "Wind Turbine Noise Prediction", presented in November 2008.

Supervisor of the dissertation of Master in Aerospace Engineering of Diogo Samora Cerqueira, "A quasi-steady model for (an insect-like) flapping-wing MAV in hovering", presented in November 2009.

Supervisor of the dissertation of Master in Aerospace Engineering of Luís Félix Fernandes Falcão Araújo, "Modelização do esforço de carga sobre o trem de aterragem de um avião", presented in November 2010.

Supervisor of the dissertation of Master in Aerospace Engineering of André Carlos Meira Pires, "Automatic Recouping Method - Development of an algorithm for optimizing simulations responses", presented in December 2010

Co-supervisor of the dissertation of Master in Aerospace Engineering of Guilherme Botelho de Oliveira e Silva, "Desenvolvimento de uma Turbina Eólica de Eixo Vertical", presented in November 2011

Supervisor of the dissertation of Master in Aerospace Engineering of Goncalo Simas Delfino Correia, "Previsão de níveis de ruído aeronáutico na vizinhança do Aeroporto de Lisboa", presented in November 2011.

Supervisor of the dissertation of Master in Aerospace Engineering of André Filipe Garcia Peixoto de Oliveira, "The effect of wind and turbulence on sound propagation in the atmosphere", presented in June 2012.

Supervisor of the dissertation of Master in Aerospace Engineering of André Santos de Sousa, "Flight path optimization for noise reduction in the vicinity of airports", presented on the 11th of June 2015.

Other Activities:

Member of the Examination Committee of the following Master Thesis:

- Diogo Ribeiro, "Satélite Geostacionário de Comunicações: Desenho Preliminar", Tese de Mestrado em Engenharia Aeroespacial, IST, Portugal, Outubro de 2007.
- Marta Alberto Henriques, "UAV para Ajuda no Combate a Incêndios Florestais", Tese de Mestrado em Engenharia Aeroespacial, IST, Portugal, Setembro de 2008.
- Pedro Miguel Rosa Ferreira Neto, "Numerical Simulation of Turbulent Accelerated Round Jets for Aeronautical Applications", Tese de Mestrado em Engenharia Aeroespacial, IST, Portugal, Novembro de 2008.

- Ricardo Luís Rendeiro Torres, “Analysis and simulation of a fling mechanism during the clap-and-fling motion of a micro air vehicle”, Tese de Mestrado em Engenharia Aeroespacial, IST, Portugal, Novembro de 2009.
- Frederico André Branco dos Reis Francisco, “Thermal Effects in Interplanetary Spacecraft”, Tese de Mestrado em Engenharia Aeroespacial, IST, Portugal, Novembro de 2009.
- Filipe Meireles de Sousa Pedro, “Projecto Preliminar de um Quadrirotor”, Tese de Mestrado em Aeronáutica Militar na especialidade de Engenharia Aeronáutica, Novembro de 2009.
- Marta Filipa Ferreira Pessoa Rodrigues, “Princípios da Concepção e Análise Aeromecânica de um Helicóptero para Combate a Incêndios”, Tese de Mestrado em Engenharia Aeroespacial, IST, Portugal, Dezembro de 2009.
- Vítor Fernando Rosa Caetano, “Comportamento Dinâmico de Corpos no Seio de um Fluido”, Tese de Mestrado em Engenharia Mecânica, IST, Portugal, Novembro de 2010.
- Noel da Costa Leitão, “Pressure Probe Design”, Tese de Mestrado em Engenharia Aeroespacial, IST, Portugal, Novembro de 2010.
- Vítor José Martins dos Santos Jorge, “A Relevância da Trama Estocástica na Impressão Offset”, Mestrado em Tecnologias Gráficas, ISEC (Instituto Superior de Educação e Ciências), Lisboa, Portugal, 20 Junho de 2011.
- Liron Schliesser, “Optimization of Transition Orbits for Autonomous Orbit Control”, Tese de Mestrado em Engenharia Aeroespacial, IST, Portugal, Novembro de 2011.
- Nelson Fernandes, “Design and construction of a multi-rotor with various degrees of freedom”, Tese de Mestrado em Engenharia Aeroespacial, IST, Portugal, Novembro de 2011.
- Ruben Emilio Campos López, “Manufacturing of a Joined-Wing Sensorcraft”, Tese de Mestrado em Engenharia Aeroespacial, IST, Portugal, Novembro de 2011.
- Francisco da Silva Pais Cabral, “On the Stability of Quasi-Satellite Orbots in the Elliptic Three-Body Problem”, Tese de Mestrado em Engenharia Aeroespacial, IST, Portugal, Dezembro de 2011.
- Diogo Coutinho de Lucena Alvim Moreira, “Delfi-n3Xt Thermal Model: Design, Analysis, Verification and Validation”, Tese de Mestrado em Engenharia Aeroespacial, IST, Portugal, Dezembro de 2011.
- João Caré Viegas Costa, “Structural analysis of rotors and multirotors using the finite element method”,Tese de Mestrado em Engenharia Aeroespacial, IST, Portugal Novembro de 2012.
- Simão Santos Rodrigues, “Aeroacoustic Optimization of Wind Turbine Blades, Tese de Mestrado em Engenharia Aeroespacial, IST, Portugal, Novembro de 2012.
- André Gomes da Costa Guerra, “Comparison of Space Propulsion Methods for a Manned Mission to Mars”, Tese de Mestrado em Engenharia Aeroespacial, IST, Portugal, Novembro de 2012.
- João Filipe da Rocha Dias, “Aircraft Wind Tunnel Characterisation using Modern Design of Experiments”, Tese de Mestrado em Engenharia Aeroespacial, IST, Portugal, Dezembro de 2012.

- Rui Miguel Sequeira Martins, “Controlled Approach Strategies on Small Celestial Bodies Using Approximate Analytical Solutions of the Elliptical Three-Body Problem: Application to the Mars-Phobos System”, Tese de Mestrado em Engenharia Aeroespacial, IST, Portugal, Junho de 2013.
- Francisca Ferreira de Matos Paulo Dias, “Metodologias de Implementação de uma Asa num Kart à Vela e Previsão de Velocidade”, Tese de Mestrado em Engenharia Aeroespacial, IST, Portugal, Novembro de 2013.
- Ana Elisa Alves Vieira, “Helicopter Rotor Noise: Development of an Acoustic Software Tool” Tese de Mestrado em Engenharia Aeroespacial, IST, Portugal, Novembro de 2013.
- Pedro Miguel Ferreira do Rosário Silva, ”Development of a methodology for the operational evaluation of SBAS systems”, Tese de Mestrado em Engenharia Aeroespacial, IST, Portugal, Novembro de 2013.
- Miguel Fragoso Garrido de Matos Lino, “Design and Attitude Control of a Variable Geometry Satellite”, ”, Tese de Mestrado em Engenharia Aeroespacial, IST, Portugal, Novembro de 2013.
- Didier Philippe de Andrade, Interaction Fluid Structure on the Laminar Flow in Curved Pipes”, Tese de Mestrado em Engenharia Aeroespacial, IST, Portugal, Junho de 2014.
- Diogo Marques Gaspar, “A Tool for Preliminary Design of Rockets”, Tese de Mestrado em Engenharia Aeroespacial, IST, Portugal, Julho de 2014.
- Roman Vasyliovych Rutskyy, “Desenvolvimento duma ferramenta computacional para projecto preliminar do helicóptero de configuração convencional”, Tese de Mestrado em Engenharia Aeroespacial, IST, Portugal, Julho de 2014.
- João Luís Aguiar Oliveira Rosa, “Modal Decomposition on Sound Propagation in Ducts with and without Flow”, Tese de Mestrado em Engenharia Aeroespacial, IST, Portugal, Setembro de 2014.
- Francisco Caetano Ferreira dos Santos Correia, “One Dimensional Model of Pulsatile Flow in Arterial Networks”, Tese de Mestrado em Engenharia Aeroespacial, IST, Portugal, 22 de Junho de 2015
- João Francisco Lima Seabra “Spacecraft Trajectory Optimization”, Tese de Mestrado em Engenharia Aeroespacial, IST, Portugal, 29 de Junho de 2015.

Member of the research team of the following European projects:

- SILENCE(R) *[Significantly Lower Community Exposure to Noise (Reduction)]*; Large-scale demonstration project, funded by EU, under 5th FP, 2nd call. Leader – SNECMA; role of IST: optimization of non-uniform circumferential and longitudinal impedance distribution in engine ducts.
- FRIENDCOPTER *(Integration of Technologies in support of a passenger and environmentaly friendly helicopter),* funded by EU, 6th Framework Programme, 1st call, Action Aeronautics. Leader: Eurocopter; role of IST: model of helicopter noise and ground effects.

Other:

- Chairman of session “2C – Aeronautics & Aerospace I” in ICEDyn 2013 – International Conference on Structural Engineering Dynamics, Sesimbra, Portugal, June 17-19 2013.
- Chairman of session “R21- Sound Propagation in Ducts and Pipes”, Forum Acusticum 2014, 7-12 September 2014, Cracow, Poland.

Lisbon, 6th of July 2015