

## CURRICULUM VITAE

### 1. Personal data

Name: Pedro da Graça Tavares Álvares Serrão

Birth date: 1965.04.11

National of Portugal

Work address: Aerospace Engineering Group – Department of Mechanical Engineering

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### 2. Academic degrees

Mechanical Engineering, Instituto Superior Técnico, 1988

Msc –Mechanical Engineering, Instituto Superior Técnico, 1995

Phd – Aerospace Engineering, Instituto Superior Técnico, 2004

### 3. Present position

Assistant Professor - Instituto Superior Técnico - Department of Mechanical Engineering

### 4. Some past activities

2000-2004 Teaching assistant - Instituto Superior Técnico

1990-1999 Engineer - TAP Air Portugal – Maintenance and Engineering.

### 5. Research interests

Aeroacoustics, Air Traffic Management, Musical Acoustics

### 6. Participation in R&D projects

JEAN (Jet Exhaust Aerodynamics & Noise); Basic Research Project funded by European Union, under 5th Framework Programme.(2001-2004)

SEFA (Sound Engineering for Aircraft); Research Project funded by European Union, under 6th Framework Programme.(2004-2007)

NACRE (New Aircraft Concepts Research), funded by European Union, 6th Framework programme, 2nd call, Action Aeronautics

X3-NOISE (Aircraft Noise Network) – Phase III, funded by the European Union, under the 6th Framework programme, 1st call, Aeronautics (2007-2010)

COSMA (Community Oriented Solutions to Minimize aircraft noise annoyance), funded by European Union, 7th Framework Programme, 2nd Call, Aeronautics (2009-2011)

Dynamical analysis and improvements on the Portuguese guitar strings and string-body interaction, FCT funded PTDC/FIS/103306/2008 Análise dinâmica das cordas da guitarra portuguesa e sua interacção com o corpo do instrumento (2010-2012) - leader

FCT funded PTDC/EMS-SIS/3255/2012 Melhoria do Desempenho Acústico da Guitarra Portuguesa (2013-2015)

### 7. Published Works

Campos, L. M. B. C. and Serrão, P. G. T. A. 1998, “On the acoustics of an exponential boundary layer”, *Phil. Trans. R. Soc. Lond.*, 356, 2335-2378.

Campos, L. M. B. C. and Serrão, P. G. T. A. 2002 “On helicoidal rectangular coordinates for the acoustics of bent and twisted tubes”, *Wave Motion*, 38, 53-66.

Campos, L. M. B. C., and Serrão, P. G. T. A. 2005 “On the acoustics of unbounded and ducted vortex flows, *SIAM Journal of Applied Mathematics*”, Vol. 65, 4, 1353-1368

Campos, L. M. B. C., and Serrão P. G. T. A. 2007 “On the directivity and spectra of noise from unheated and heated jets,” *International Journal of Aeroacoustics*, Vol. 6, 2, 1-34.

Campos, L.M.B.C. and Serrão, P.G.T.A. 2008 “On the acoustic matching of straight, curved and twisted tubes”, *International Journal of Sound and Vibration*, Vol. 13, 100-111.

Campos, L.M.B.C. and Serrão, P.G.T.A. Campos 2013 “On the discrete and continuous spectrum of acoustic-vortical waves”, *International Journal of Aeroacoustics*, Vol. 12, 7 & 8, 743-782.

Campos, L.M.B.C. and Serrão, P.G.T.A. Campos 2014 “On the effect of atmospheric temperature gradients and ground impedance on sound.” *International Journal of Aeroacoustics*, Vol. 13(5-6), 427-448.

Campos, L.M.B.C. and Serrão, P.G.T.A. Campos 2016 On sound propagation in a nozzle with non-uniform swirl. *Journal of Sound and Vibration*, Vol. 361, 261-271.

## 8. Communications

Effects of shear flow on sound transmission across boundary layers, L.M.B.C. Campos, P.G.T.A. Serrão, 17<sup>th</sup> ICAS Congress, Stockholm, 1990

Interaction of sound with an exponentially boundary layer, L.M.B.C. Campos, P.G.T.A. Serrão, *Euromech 275 on Waves in Inhomogeneities and Moving Media*, Lisbon 1991

On sound attenuation in compressible and incompressible laminar boundary layers, L. M. B. C. Campos, M. H. Kobayashi, J. L. Oliveira & P. G. T. A. Serrão, 1st Joint CEAS/16th AIAA Aeroacoustics Conference, München, Paper CEAS/AIAA-95-13.

On the acoustics of unbounded and ducted vortex flows, L.M.B.C. Campos, P.G.T.A. Serrão, 10th AIAA/CEAS Aeroacoustics Conference; Session AA-23 Duct Propagation; Derby

On sound transmission through boundary layers of aircraft fuselages and engine ducts, L. M. B. C. Campos, J. M. G. S. Oliveira, P. G. T. A. SERRÃO & M. H. Kobayashi 20th Congress of International Council of Aeronautical Sciences, Sorrento

“On the scattering of sound by shear flows”, L. M. B. C. Campos, M. H. Kobayashi, P.G.T.A. Serrão & J.M.G.S. Oliveira, *Euromech, 3rd European Fluid Mechanics Conference*, Göttingen

On the scattering of sound by an exponential boundary layer, P.G.T.A. Serrão, L.M.B.C. Campos, M.H. Kobayashi, 12th International Congress of Sound and Vibration, Lisbon 2005.

AIAA-2007-3629 On the Noise of Cold or Hot Turbulent Jets , L. Campos and P. Serrão, 13th AIAA/CEAS Aeroacoustics Conference

On sound propagation and generation with non-uniform swirl, L.M.B.C. Campos & P.G.T.A. Serrão, *European Congress of Mathematics for Industry ECMI 2008 University College*, London

On the scattering of sound by junctions of bent and twisted tubes, L.M.B.C. Campos & P.G.T.A. Serrão 16<sup>th</sup> International Congress of Sound and Vibration, 5-9 July 2009, Krakow.

On the discrete and continuous spectrum of waves in a sheared swirling inhomogeneous flow, L.M.B.C. Campos & P.G.T.A. Serrão, 16<sup>th</sup> International Congress of Sound and Vibration, 5-9 July 2009, Krakow

On the continuous spectrum of sound in sheared and swirling flows, L.M.B.C. Campos & P.G.T.A. Serrão 16 th AIAA/CEAS Aeroacoustics conference, 7-9 June Strockhlem.

Effect of wind on noise propagation, L.M.B.C. Campos & P.G.T.A. Serrão , *Internoise 2010*, 13-16 Jun. 2010

Outdoor to indoor transmission of aircraft noise, L.M.B.C. Campos & P.G.T.A. Serrão *Internoise 2010*, 10-13 June, Lisbon.

On the discrete and continuous spectrum of waves in a sheared and swirling flows, L.M.B.C. Campos & P.G.T.A. Serrão 16<sup>th</sup> European Conference on Mathematics for Industry, 2010, July 26-30, Wuppertal.

Dynamical Analysis of Portuguese Guitar Strings , E. Costa, P. Serrão, A. Ribeiro, V.. Infante, ICEM15, 15th International Conference on Experimental Mechanics 2012

Experimental Characterization of Portuguese Guitar Strings Mechanical Properties E. Costa, P. Serrão, V. Infante , A. Ribeiro, ICEM15, 15th International Conference on Experimental Mechanics 2012

Sound refraction by stratification and wind in an atmosphere, L.M.B.C. Campos & P.G.T.A. Serrão  
17th ASC-CEAS/X-NOISE EV Workshop, Seville, 2013.

On the discrete and continuous spectra of acoustic-vortical waves. L.M.B.C. Campos & P.G.T.A. Serrão, ICNPAA (Congress on Mathematical Problems in Engineering, Aerospace and the Sciences, Narvik 2014.

On waves in a nozzle with sheared and swirling mean flow, L.M.B.C. Campos & P.G.T.A. Serrão, Forum Acousticum, Krakow 2014.

Structural Modeling and Experimental-Numerical Correlation of the Dynamic Behavior of the Portuguese Guitar Using a Structural-Fluid Coupled Model. M. Vieira, V. Infante, P. Serrão and A. Ribeiro WESPAC 2015 - 12th Western Pacific Acoustics Conference 2015, Singapore, December 2015.