

Areas of specialisation

Inverse problems in acoustics, characterisation of sound-absorbing media, waves and uncertainty in structural dynamics, acoustic black holes, acoustic imaging, room acoustics, psychoacoustics.

Research experience

2014/12 - present	Siemens Industry Software - Leuven, Belgium. <i>Senior Research Engineer</i>
2012/10 - 2014/10	LMS International / Siemens Industry Software - Leuven, Belgium. <i>Research fellowship</i>
2011/4 - 2012/8	Institute of Sound and Vibration Research (ISVR) - Southampton, UK. <i>Research fellowship</i>
2010/1 - 2011/2	KTH Royal Institute of Technology - Stockholm, Sweden. <i>Research fellowship</i>
2006/10 - 2009/10	Laboratoire d'Acoustique de l'Université du Mans (LAUM) - Le Mans, France. <i>PhD</i>

Education

2006 - 2009	PhD, Acoustics. Le Mans University
2004 - 2006	MSc, Mechanical and Acoustical Engineering. Le Mans University
2003 - 2004	BSc, Physics. Paris VII Denis Diderot University
2001 - 2003	BScTech, Vibrations, Acoustics and Signal processing. Le Mans University

Funding

Individual grants	European Commission (2), Acoustical Society of France (1), CROUS Le Mans, France (1)
Research fellowships	European Commission MSCA (3), French Ministry of Education and Scientific Research (1)
Funded projects	European Commission H2020 Research and Innovation Actions (4), VLAIO (Flanders innovation agency) (3), European Commission Clean Sky 2 (1), European Space Agency (1)

Supervision of PhD theses

2022 (exp.)	Mansour Alkmim (Siemens, KU Leuven). J. Cuenca, L. De Ryck, W. Desmet
2022 (exp.)	Yue Li (Siemens, KU Leuven). O. Atak, J. Cuenca, W. Desmet
2020	Luca Manzari (KTH Royal Institute of Technology). P. Göransson, J. Cuenca, I. López Arteaga
2016	Juan Pablo Parra Martínez (KTH Royal Institute of Technology). P. Göransson, O. Dazel, J. Cuenca

Teaching

Guest Lectures

2020, 2019	Le Mans University, ENSIM - Inverse methods for acoustic material characterisation
2020, 2019, 2018	ISAAC Course on Acoustics, KU Leuven - Fundamentals of acoustic imaging
2018	EU H2020 Project PBNv2 workshop - Pass-by noise engineering
2016	EU FP7 Project TANGO workshop - Characterisation and optimisation of porous materials
2012	EU FP7 Project Mid-Frequency workshop - Image source models for mid-frequency vibrations

University courses

2011	Univ. San Buenaventura Bogotá/Medellín - BSc Sound Engineering - room acoustics (4h)
2010	KTH Royal Institute of Technology - MSc Acoustics - signal processing (20h)
2006 - 2009	Le Mans University, ENSIM - MSc Engineering Acoustics - acoustics and vibrations (30h)
2006 - 2009	Le Mans University - BScTech Acoustics, Vibrations and Signal Processing - vibrations (45h), signal processing (39h), electronics (10h), mathematics (7h), lab sessions (100h)

Publications

Peer-reviewed journal papers

18. Ignazio Dimino, Claudio Colangeli, Jacques Cuenca, Pasquale Vitiello, Mattia Barbarino. **Active noise control for aircraft cabin seats.** *Applied Sciences* 12 (2022) 5610. [pdf](#) [doi](#)
17. Yue Li, Julie Meyer, Tapio Lokki, Jacques Cuenca, Onur Atak, Wim Desmet. **Benchmarking of finite-difference time-domain method and fast multipole boundary element method for room acoustics.** *Applied Acoustics* 191 (2022) 108662. [pdf](#) [doi](#)
16. Jacques Cuenca, Peter Göransson, Laurent De Ryck, Timo Lähivaara. **Deterministic and statistical methods for the characterisation of poroelastic media from multi-observation sound absorption measurements.** *Mechanical Systems and Signal Processing* 163 (2022) 108186. [pdf](#) [doi](#)
15. Athanasios Papaioannou, Stephen J. Elliott, Jordan Cheer, Jacques Cuenca, Mansour Alkmim. **Power-based application of frequency-averaged ℓ_1 -norm regularisation technique for the synthesis of accelerating indoor tyre pass-by noise.** *Acta Acustica* 5 (2021) 50. [pdf](#) [doi](#)
14. Mansour Alkmim, Jacques Cuenca, Laurent De Ryck, Wim Desmet. **Angle-dependent sound absorption estimation using a compact microphone array.** *J. of the Acoustical Society of America* 150 (2021) 2388. [pdf](#) [doi](#)
13. Venanzio Giannella, Claudio Colangeli, Jacques Cuenca, Roberto Citarella, Mattia Barbarino. **Acoustic assessment of aircraft headrests based on electrospun mats.** *Applied Sciences* 11(14) (2021) 6400. [pdf](#) [doi](#)
12. Giulio Dolcetti, Mansour Alkmim, Jacques Cuenca, Laurent De Ryck, Anton Krynkina. **Robust reconstruction of scattering surfaces using a linear microphone array.** *J. of Sound and Vibration* 494 (2020) 115902. [pdf](#) [doi](#)
11. Luca Manzari, Huina Mao, Peter Göransson, Jacques Cuenca, Inés López Arteaga. **A method for the observation of the anelastic behaviour of anisotropic porous materials using digital image correlation.** *J. of Sound and Vibration* 474 (2020) 115244. [pdf](#) [doi](#)
10. Peter Göransson, Jacques Cuenca, Timo Lähivaara. **Parameter estimation in modelling frequency response of coupled systems using a stepwise approach.** *Mechanical Systems and Signal Processing* 126 (2019) 161-175. [pdf](#) [doi](#)
9. Juan Pablo Parra Martínez, Olivier Dazel, Peter Göransson, Jacques Cuenca. **Derivation of the state matrix for dynamic analysis of linear homogeneous media.** *J. of the Acoustical Society of America* 140(2) (2016) EL218-EL220. [pdf](#) [doi](#)
8. Juan Pablo Parra Martínez, Peter Göransson, Olivier Dazel, Jacques Cuenca. **Acoustic analysis of anisotropic poroelastic multilayered systems.** *J. of Applied Physics* 119(8) (2016) 084907. [pdf](#) [doi](#)
7. Christophe Van der Kelen, Jacques Cuenca, Peter Göransson. **A method for the inverse estimation of the static elastic compressional moduli of anisotropic poroelastic foams – with application to a melamine foam.** *Polymer Testing* 43 (2015) 123-130. [pdf](#) [doi](#)
6. Christophe Van der Kelen, Jacques Cuenca, Peter Göransson. **A method for characterisation of the static elastic properties of the porous frame of orthotropic open-cell foams.** *International J. of Engineering Science* 86 (2015) 44-59. [pdf](#) [doi](#)

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PhD thesis

Jacques Cuenca. **Wave models for the flexural vibrations of thin plates** – Model of the vibrations of polygonal plates by the image source method; Vibration damping using the acoustic black hole effect. *Doctoral thesis, Université du Maine, 2009.* [pdf](#) [slides](#)

Other

6 submitted journal papers, 68 conference papers, 7 invited seminars, 1 book chapter. [list](#)