Jacques Cuenca

Researcher in Acoustics and Vibration

jacquescuenca.org

Updated 2nd June 2022

Siemens Industry Software
Interleuvenlaan 68, B-3001 Leuven, Belgium
jacques.cuenca@siemens.com

Work experience

2014/12-present (8 years) — **Siemens Industry Software - Leuven, Belgium**
Sr. Research Engineer

Inverse problems in acoustics, characterisation of sound-absorbing media, vibrations of uncertain structures, acoustic imaging, video methods for vibration measurement, structural damage detection, room acoustics, psychoacoustics.

Teaching: KU Leuven, Le Mans University.

2012/10-2014/10 (2 years) — **LMS International / Siemens Industry Software - Leuven, Belgium**
Research fellowship

Modelling of the uncertain vibrations of structures with spatially-extended random excitation, characterisation of sound-absorbing porous ground surfaces, acoustic mode detection in turbofan and turboshaft engines.

Advisor: Bart Peeters.
Funding: IAPP EU project *Stadywico* and EU Clean Sky *Green Rotorcraft*.

2011/4-2012/8 (1 year) — **Institute of Sound and Vibration Research (ISVR) - Southampton, United Kingdom**
Research fellowship

Modelling the vibrations of uncertain coupled structures in the mid-frequency range.

Advisors: Brian Mace and Neil Ferguson.
Funding: MSC EU project *Mid-frequency*.

2010/1-2011/2 (1 year) — **KTH Royal Institute of Technology - Stockholm, Sweden**
Research fellowship

Inverse estimation of elastic and anelastic properties of anisotropic porous foams.

Advisor: Peter Göransson.
Funding: MSC EU project *Smart Structures*.

Teaching: School of Engineering Sciences, KTH.

2006/10-2009/10 (3 years) — **Laboratoire d'Acoustique de l'Université du Maine (LAUM) - Le Mans, France**
PhD, Acoustics

Wave models for the flexural vibrations of thin plates.

Advisors: François Gautier and Laurent Simon.
Funding: French Ministry of Education and Research.

Teaching: Faculty of Sciences and School of Engineering, Université du Maine.

2006/3-8 (6 months) — **Institute for Research & Coordination in Acoustics/Music (IRCAM) - Paris, France**
Research training

Boundary conditions of the piano strings.

Advisor: René Caussé.

Affiliations

Member of the European Acoustical Association (EAA).
Member of the Acoustical Society of France (Société Française d'Acoustique) (SFA).
Member of the European Physical Society (EPS).
Member of the Free Software Foundation Europe (FSFE).
Associate member of the Free Software Foundation (FSF).

Funding and grants

Individual grants

2019 **Grant for a short-term scientific mission (2-week visit to UEF Kuopio, Finland)**
European Commission - COST action CA15125.

2018 **Grant for a short-term scientific mission (3-week visit to KTH Stockholm, Sweden)**
European Commission - COST action CA15125.

2011 **Prix Rocard**, early career prize for achievements in acoustics
Acoustical Society of France

2005 **Masters degree grant for academic excellence**
CROUS Le Mans, France

Research fellowships

2012 **Marie Sklodowska-Curie fellowship for post-doctoral research**
European Commission - EU FP7 IAPP *Stadywico* Grant Agreement 251309

2011 **Marie Sklodowska-Curie fellowship for post-doctoral research**
European Commission - EU FP7 ITN *Mid-Frequency* Grant Agreement 214909

2010 **Marie Sklodowska-Curie fellowship for post-doctoral research**
European Commission - EU FP6 RTN *Smart Structures* Grant Agreement 035559

2006 **PhD fellowship**
French Ministry of Education and Scientific Research

Funded projects

2020-2023 **BeQuiet – Belgian consortium for quiet transmissions**
VLAIO (Flanders innovation agency) project. 3 years

2019-2021 **ADIFAN – Advanced direct field acoustic noise**
European Space Agency & Belgian Federal Science Policy Office - GSTP 4000127640/19/NL/GLC/vr. 2 years

2019-2021 **CASTLE – Cabin systems design toward passenger wellbeing**
Clean Sky 2 - GA 945521. 2 years

2018-2021 **DETECT-ION – Model-supported non-destructive testing for the detection of defects in lightweight structures: an industrial solution**. VLAIO (Flanders innovation agency) ICON project. 3.4 M€. 3 years

2017-2021 **PBNv2 – Next generation Pass-By Noise approaches for new powertrain vehicles**
European Commission H2020 research and innovation programme - MSC Actions - GA 721615. 3.6 M€. 4 y

2017-2021 **Acoutect**
European Commission H2020 Research and Innovation Programme - MSC Actions - GA 721536. 3.9 M€. 4 y

2016-2020 **DENORMS – Designs for noise reducing materials and structures**
European Commission H2020 research and innovation programme - COST action CA15125. 4 years

2015-2018 **TUMULT – Turbulent flow noise modeling for under- and upper-body load and transmission analysis**
VLAIO (Flanders innovation agency) project no. 150066. 3 years

2015-2018 **VIBMON – Cost-effective vibroacoustic monitoring**
Flanders Make ICON project. 3 years

2014-2018 **INSITER – Intuitive self-inspection techniques using augmented reality for construction, refurbishment and maintenance of energy-efficient buildings made of prefabricated components**
European Commission H2020 Research and Innovation Actions - GA 636063. 6.4 M€. 4 years

Internally funded projects

2019-2021 Multi-microphone techniques for material characterisation using impedance tubes

2018-2021 Improved psychoacoustic metrics for fluctuation strength and annoyance

2018-2019 Vehicle sound simulator - Immersive simulation platform for in-cabin sound quality assessment

2016-2018 Siemens eAircraft - Vibration and acoustic testing and benchmarking of prototype electric airplanes

2012-2013 Acoustic mode detection in turbofan engines and prediction of sound radiation

PhD and thesis supervision

PhD theses

(2022) Mansour Alkmim
Experimental tools for pass-by noise synthesis
Siemens Industry Software, KU Leuven – Funding: PBNv2 MSC EU project (Grant agreement 721615)
Advisors: Jacques Cuenca, Laurent De Ryck (Siemens), Wim Desmet (KUL)

(2022) Yue Li
Fast boundary element schemes and acoustic material characterisation
Siemens Industry Software, KU Leuven – Funding: Acoutect MSC EU project (Grant agreement 721536)
Advisors: Onur Atak (Siemens), Jacques Cuenca, Wim Desmet (KUL)

2020 Luca Manzari
High-speed stereo imaging for the characterization of anisotropic viscoelastic media
KTH Royal Institute of Technology – Funding: Swedish Research Council (Grant No. 2015-04258).
Advisors: Peter Göransson (KTH), Jacques Cuenca, Inés López Arteaga (TU/e)

2016 Juan Pablo Parra Martínez
Multilayer system dynamics and waves in anisotropic poroelastic media
KTH Royal Institute of Technology – Funding: Centre for ECO^2 Vehicle Design, KTH
Advisors: Peter Göransson (KTH), Olivier Dazel (Université du Maine), Jacques Cuenca

Master theses

2022 Oscar Lundin (KTH). **Machine learning for fast room acoustics**. KTH. Co-advisor with Elías Zea (KTH) and Peter Svensson (NTNU).

2021 Ornella Yonkeu (Université de Bourgogne). **Reverberation time estimation methods**. Siemens Industry Software. Co-advisor with Laurent De Ryck and Yue Li.

2020 Bastien de Luca (INSA Lyon). **Sound and vibration design for a vehicle sound simulator**. Siemens Industry Software. Co-advisor with Laurent De Ryck and Claudio Colangeli.

2020 Édouard Gendron (Le Mans Université). **Validation of fluctuation strength and tonality psychoacoustic metrics**. Siemens Industry Software. Co-advisor with Laurent De Ryck.

2020 Nicolas Auquier (INSA Lyon). **Nearfield acoustic holography for structural damage detection**. Siemens Industry Software. Co-advisor with Laurent De Ryck.

2019 Antoine Coutin (École des Mines d'Albi). **Acoustic and thermal modelling of muffler components**. Siemens Industry Software. Co-advisor with Laurent De Ryck and Mansour Alkmim.

2019 Riccardo Mutti (École des Mines d'Albi). **Strategies for improved reverberation time estimation**. Siemens Industry Software. Co-advisor with Laurent De Ryck and Mansour Alkmim.

2019 Valentin Bruniaux (École des Mines d'Albi). **Psychoacoustic modelling and evaluation of sound-absorbing partitions**. Siemens Industry Software. Co-advisor with Laurent De Ryck and Mansour Alkmim.

2018 Alexandre Gratton (École des Mines d'Albi). **Thermal modelling and acoustic characterisation of inhomogeneous waveguides**. Siemens Industry Software. Co-advisor with Laurent De Ryck.

2017 Arnaud Perdigon, Thibaud Le Scolan (École des Mines d'Albi). **Acoustic characterisation and thermal modelling of inhomogeneous waveguides**. Siemens Industry Software. Co-advisor with Laurent De Ryck.

2016 Andrea Venanzoni (Università delle Marche, Ancona). **Video processing methods for motion and vibration analysis**. Siemens Industry Software. Co-advisor with Laurent De Ryck.

2014 Kevin Menino (Université de Bourgogne). **Methods for sound absorption measurement of ground surfaces**. Siemens Industry Software. Co-advisor with Laurent De Ryck.

2009 Miguel Molerón. **Acoustic black hole effect in beams and plates**. Université du Maine. Co-advisor with François Gautier and Laurent Simon.

2009 Julie Aka, Jean-Philippe Binet. **Scattering and damping of flexural waves in plates**. Université du Maine. Co-advisor with François Gautier and Laurent Simon.

2008 Bo Lü, Mathieu Buzaré. **Experimental study of the acoustic black hole effect**. Université du Maine. Co-advisor with François Gautier and Laurent Simon.

2007 Florent Le Courtois. **Identification of vibrational rays by using space-wavenumber transforms**. Université du Maine. Co-advisor with François Gautier and Laurent Simon.

2007 Samuel Pinson. **Design of acoustic black holes**. Université du Maine. Co-advisor with François Gautier and Laurent Simon.

Bachelor theses

2007 Fabien Bourlier (Université du Maine). **Experimental study of the coupling of piano strings**. IRCAM. Co-advisor with René Caussé.

Active cooperations

Prof. Peter Göransson, KTH Royal Institute of Technology, Stockholm, Sweden
Dr. Timo Lähivaara, University of Eastern Finland, Kuopio, Finland
Dr. Anton Krynkin, Department of Mechanical Engineering, University of Sheffield, Sheffield, UK
Dr. Juan Pablo Parra Martínez, RISE Research Institutes of Sweden, Borås/Stockholm, Sweden
Prof. François Gautier, Le Mans University, Le Mans, France
Prof. U. Peter Svensson, NTNU, Trondheim, Norway
Prof. Wim Desmet, KU Leuven, Leuven, Belgium

Teaching

Lectures

2020/12/1	**Introduction to inverse methods for acoustic material characterisation** - ENSIM MSc, Le Mans
2020/11/26	**Introduction to inverse methods for acoustic material characterisation** - ENSIM MSc, Le Mans
2020/9/17-18	**Fundamentals of acoustic imaging** - ISAAC Course on Applied and Numerical Acoustics, KU Leuven
2019/12/12	**Introduction to inverse methods for acoustic material characterisation** - ENSIM MSc, Le Mans
2019/9/19-20	**Fundamentals of acoustic imaging** - ISAAC Course on Applied and Numerical Acoustics, KU Leuven
2018/11/28	**Pass-by noise engineering** - EU H2020 project PBNv2 workshop, INSA Lyon
2018/9/20-21	**Fundamentals of acoustic imaging** - ISAAC Course on Applied and Numerical Acoustics, KU Leuven
2016/10/12-13	**Characterisation of porous media** - EU FP7 project TANGO workshop, Siemens, Leuven
2012/3/22-23	**Modelling mid-frequency vibrations using the image source method** - EU FP7 Project Mid-Frequency. 3rd short course on mid-frequency methods for vibrations and acoustics.

University courses

2011	**Universidad de San Buenaventura Bogotá/Medellín** - BSc in sound engineering Tutorials: Room acoustics (2×2h)
2010	**KTH Royal Institute of Technology** - MSc in acoustics Signal processing 1st year MSc: lectures and lab sessions (20h)
2006-2009	**Le Mans University, ENSIM school of engineering** - MSc in engineering acoustics Tutorials 1st year MSc: Acoustics and vibrations (2×15h)
2006-2009	**Le Mans University**- BSc in acoustics, vibrations and signal processing. Tutorials 1st year: Vibrations (3×15h), Signal processing (3×13h), Electronics (10h), Mathematics (7h). Lab sessions 1st year: Projects (12h+16h). Lab sessions 2nd year: Vibrations, Signal processing (3×24h).

Languages

- English: full professional proficiency.
- French: native (bilingual), full professional proficiency.
- Spanish: native (bilingual), full professional proficiency.
- Swedish, Italian, Portuguese: elementary knowledge.

Some past and present computer interests

- Scientific computing and programming: GNU Octave, Maxima, Python/NumPy, FreeFem++, FEniCS.
- General programming: Bash, Python.
- Typesetting and web development: LaTeX, HTML, CSS.
- Siemens tools: Simcenter Testlab, SoundBrush, Sound Camera, HEEDS.
- 3D modelling: OpenSCAD, OpenJSCAD, Processing.
- Music and sound recording: SonicPi, Mozart, Audacity, Logic Pro X.

Education and training

Scientific and engineering education

2006-2009 **PhD, Acoustics**. Université du Maine - Le Mans, France. Highest distinction.

2004-2006 **Master of Science, Mechanical and Acoustical Engineering** (Concentration in acoustics research). Université du Maine - Le Mans, France.

2003-2004 **Bachelor of Science, Physics**. (Concentration in waves, classical and quantum mechanics). Université Paris VII Denis Diderot - Paris, France. Built a thermo-acoustic refrigerator.

2001-2003 **Bachelor of Science and Technology, Vibrations, Acoustics and Signal processing** (DEUST Vibrations, Acoustique, Signal). Université du Maine - Le Mans, France.

Specialised courses

2017 Experimental techniques for acoustic porous materials and metamaterials. DENORMS training school. Le Mans University, Le Mans, 4-6 December 2017.

2016 Sound waves in periodic structures, metamaterials and viscothermal fluids. DENORMS training school. Czech Technical University, Prague, 26-30 September 2016.

2014 Topology optimization of structures and continua. CISM, Udine, 9-13 June 2014.

2013 Fourth workshop on generic solvers for PDEs: FreeFem++ and its applications. Paris, 10-12 December 2013.

2013 Winter School on the Acoustics of Porous Materials. Lyon, 12-14 February 2013.

2011 Mid-frequency analysis of noise and vibration. St. Anne's College, Oxford, 5-7 April 2011.

2010 Wave propagation in linear and non-linear periodic media: analysis and applications. CISM, Udine, 21-25 June 2010.

2010 Modelling and controlling smart structures. Fraunhofer ITWM, Kaiserslautern, 3-5 February 2010.

2007 Acoustical Imaging of Complex Media: Applications in Medicine, Seismology and Oceanography. Institut d'Études Scientifiques de Cargèse, Cargèse, 15-20 October 2007.

2006 Mechanics of playing and making musical instruments. CISM, Udine, 17-21 July 2006.

Musical education and activities

2012-now Independent musician - Brussels, Belgium.

2011-2012 Harpsichordist - Southampton University Orchestra - Southampton, UK.

2011-2012 Harpsichord tuner - Southampton Philarmonic Choir, Southampton University Orchestra, Turner Sims Theatre - Southampton, UK.

2010-2011 Harpsichord studies - Professor: Cajsa Trepte - Stockholm, Sweden.

2008-2009 Harpsichordist and composer. Amateur baroque music ensemble *Rondo Crannaziano* - Le Mans, France.

2002-2007 Certificate of Completion of Musical Studies (Certificat de Fin d'Études Musicales, CFEM) - Regional Conservatory of Le Mans, France. Graduated with distinction. Completed studies in harpsichord, chamber music, solfege (sight-singing and ear training) and music analysis. Studied musical composition and history.

2001-2004 Piano studies. Schola Cantorum - Paris, France.

2000-2001 Musical harmony studies. Alejandro Prieto Musical Academy - Cali, Colombia.

1998-2001 Electric guitar studies. Professor: Alexander Monroy - Cali, Colombia.

1990-2001 Piano studies. Professor Lola Donskoy de Vaisman - Cali, Colombia.

Music productions

2020/6 *Blake – Back to the light* – Baroque power metal 8-track album. (Bandcamp, Spotify, Deezer, YouTube Music, etc.). Released June 2020. JC: lead guitar, keyboards, mastering and production.

2017/7 *Diego Borrero – El Flash de la Vida*. (Spotify, Deezer, YouTube Music, etc.) Released July 2017. JC: keyboards on track 2.

2011/11 *Mozart Requiem K626, A New Completion by Michael Finnissy*, premiered at St Michael's Church, Southampton, 20 November 2011, second performance at St Michael's and All Angels Church, Brighton, 26 November 2011. Conducted by Michael Finnissy. Recording by J. Cuenca. Excerpts aired on BBC Radio 4, 2011.

Publications

Google Scholar | Scopus | ORCID | ResearchGate

Peer-reviewed journal papers

(submitted) Mansour Alkmim, João Cardenuto, Elisa Tengan, Thomas Dietzen, Toon van Waterschoot, Jacques Cuenca, Laurent De Ryck, Wim Desmet.
Drone noise directivity and psychoacoustic evaluation using a hemispherical microphone array.

(submitted) Yue Li, Jacques Cuenca, Laurent De Ryck, Mansour Alkmim, Onur Atak, Wim Desmet, Giulio Dolcetti, Anton Krynkin.
Simultaneous estimation of shape and impedance of a scattering surface using BEM.

(submitted) Alberto Garcia de Miguel, Mariano Alvarez Blanco, Edgar Matas, Hadrien Beriot, Jacques Cuenca, Onur Atak, Karl Janssens, Bart Peeters.
Virtual pre-test analysis for optimization of multi-channel control strategies in direct field acoustic testing.

(submitted) Mansour Alkmim, Guillaume Vandernoot, Jacques Cuenca, Laurent De Ryck, Karl Janssens, Wim Desmet.
Real-time sound synthesis of pass-by noise using higher-order ambisonics and time-varying filters.

(submitted) Francesco Cosco, Jacques Cuenca, Wim Desmet, Karl Janssens, Domenico Mundo.
Towards phase-based defect detection: a feasibility study in vibrating panels.

(submitted) Michael-David Johnson, Anton Krynkin, Giulio Dolcetti, Mansour Alkmim, Jacques Cuenca, Laurent De Ryck.
Application of Machine Learning to recover surface parameters from phaseless scattered acoustic data.

18. Ignazio Dimino, Claudio Colangeli, Jacques Cuenca, Pasquale Vitiello, Mattia Barbarino. pdf doi
Active noise control for aircraft cabin seats.
Applied Sciences 12 (2022) 5610.

17. Yue Li, Julie Meyer, Tapio Lokki, Jacques Cuenca, Onur Atak, Wim Desmet. pdf doi
Benchmarking of finite-difference time-domain method and fast multipole boundary element method for room acoustics.
Applied Acoustics 191 (2022) 108662.

16. Jacques Cuenca, Peter Göransson, Laurent De Ryck, Timo Lähivaara. pdf doi
Deterministic and statistical methods for the characterisation of poroelastic media from multi-observation sound absorption measurements.
Mechanical Systems and Signal Processing 163 (2022) 108186.

15. Athanasios Papaioannou, Stephen J. Elliott, Jordan Cheer, Jacques Cuenca, Mansour Alkmim. pdf doi
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.

14. Mansour Alkmim, Jacques Cuenca, Laurent De Ryck, Wim Desmet. pdf doi
Angle-dependent sound absorption estimation using a compact microphone array.
J. of the Acoustical Society of America 150 (2021) 2388.

13. Venanzio Giannella, Claudio Colangeli, Jacques Cuenca, Roberto Citarella, Mattia Barbarino. pdf doi
Acoustic assessment of aircraft headrests based on electrospun mats.
Applied Sciences 11(14) (2021) 6400.

12. Giulio Dolcetti, Mansour Alkmim, Jacques Cuenca, Laurent De Ryck, Anton Krynkin. pdf doi
Robust reconstruction of scattering surfaces using a linear microphone array.
J. of Sound and Vibration 494 (2020) 115902.

11. Luca Manzari, Huina Mao, Peter Göransson, Jacques Cuenca, Inés López Arteaga. pdf doi
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.

10. Peter Göransson, Jacques Cuenca, Timo Lähivaara. pdf doi
Parameter estimation in modelling frequency response of coupled systems using a stepwise approach.
Mechanical Systems and Signal Processing 126 (2019) 161-175.

9. Juan Pablo Parra Martínez, Olivier Dazel, Peter Göransson, Jacques Cuenca. pdf doi
Derivation of the state matrix for dynamic analysis of linear homogeneous media.
J. of the Acoustical Society of America 140(2) (2016) EL218-EL220.

8. Juan Pablo Parra Martínez, Peter Göransson, Olivier Dazel, Jacques Cuenca. pdf doi
Acoustic analysis of anisotropic poroelastic multilayered systems.
J. of Applied Physics 119(8) (2016) 084907.

7. Christophe Van der Kelen, Jacques Cuenca, Peter Göransson. pdf doi
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.

6. Christophe Van der Kelen, Jacques Cuenca, Peter Göransson. pdf doi
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.

5. Jacques Cuenca, Christophe Van der Kelen, Peter Göransson. pdf doi
A general methodology for inverse estimation of the elastic and anelastic properties of anisotropic open-cell porous materials – with application to a melamine foam.
J. of Applied Physics 115 (2014) 084904.

4. Jacques Cuenca, Peter Göransson. pdf doi
Inverse estimation of the elastic and anelastic properties of the porous frame of anisotropic open-cell foams.
J. of the Acoustical Society of America 132(2) (2012) 621-629.

3. Jacques Cuenca, François Gautier, Laurent Simon. pdf doi
Harmonic Green's functions for flexural waves in semi-infinite plates with arbitrary boundary conditions and high-frequency approximation for convex polygonal plates.
J. of Sound and Vibration 331(6) (2012) 1426-1440.

2. Vasil B. Georgiev, Jacques Cuenca, François Gautier, Laurent Simon, Victor V. Krylov. pdf doi
Damping of structural vibrations in beams and elliptical plates using the acoustic black hole effect.
J. of Sound and Vibration 330(11) (2011) 2497-2508.

1. Jacques Cuenca, François Gautier, Laurent Simon. pdf doi
The Image Source Method for calculating the vibrations of simply supported convex polygonal plates.
J. of Sound and Vibration 322(4-5) (2009) 1048-1069.

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. pdf slides
Doctoral thesis, Université du Maine, 2009.

Book chapters

Mansour Alkmim, Jacques Cuenca, Laurent De Ryck, Karl Janssens.
Virtual Pass-by noise synthesis.
PBNv2: Next generation Pass-By Noise approaches for new powertrain vehicles, 2021.

Conference papers

2021

68. Jacques Cuenca, Peter Göransson, Laurent De Ryck, Timo Lähivaara. Deterministic and statistical characterisation of poroelastic media from sound absorption measurements. Inverse Days, Tampere, 2021/12/14-16.
67. Yue Li, Jacques Cuenca, Laurent De Ryck, Mansour Alkmim, Giulio Dolcetti, Anton Krynkin. Rough surface characterization using acoustic optimization framework. 33rd Nordic seminar on computational mechanics, Jönköping, 2021/11/25-26.
66. Elias Zea, Eric Brandão, Mélanie Nolan, Joakim Andén, Jacques Cuenca, U. Peter Svensson. Learning the finite size effect for in-situ absorption measurement. Euronoise 2021, Madeira, 2021/10/25-27.
65. Jacques Cuenca, Peter Göransson, Laurent De Ryck, Timo Lähivaara. Deterministic and statistical methods for the characterisation of poroelastic media from sound absorption measurements. Symposium on the acoustics of poro-elastic materials (SAPEM), West Lafayette, 2021/3/30-4/1.
64. Alberto García de Miguel, Mariano Álvarez Blanco, Edgar Matas, Hadrien Beriot, Jacques Cuenca, Ivan C.S. Ngan, Bart Peeters. Numerical pre-test analysis for multi-channel control strategies in environmental acoustic tests. 16th European Conference on Spacecraft Structures, Materials and Environmental Testing, Braunschweig, 2021/3/23-25.

2020

63. Baltazar Brière de la Hosseraye, Felix S. Egner, Georgios Diapoulis, Huiqing Wang, Jacques Cuenca. A case study on workstation-dependent acoustic characterization of open-plan offices. Forum Acusticum 2020, Lyon, 2020/12/7-11.
62. Giulio Dolcetti, Mansour Alkmim, Jacques Cuenca, Laurent De Ryck, Anton Krynkin. Experimental surface shape reconstruction using microphone arrays. Forum Acusticum 2020, Lyon, 2020/12/7-11.
61. Mansour Alkmim, Jacques Cuenca, Laurent De Ryck, Guillaume Vandernoot, Karl Janssens. Time-varying filter representation of acoustic transmission through panels under moving source excitation. Forum Acusticum 2020, Lyon, 2020/12/7-11.
60. Francesco Cosco, Jacques Cuenca, Wim Desmet, Karl Janssens, Domenico Mundo. On the usability of phase-based video motion magnification for defect detection in vibrating panels. ISMA/USD, Leuven, 2020/9/7-9.
59. Nicolas Auquier, Jacques Cuenca, Laurent De Ryck. Coherence-based nearfield acoustic holography for damage detection in plates. ISMA/USD, Leuven, 2020/9/7-9.

58. Mansour Alkmim, Jacques Cuenca, Laurent De Ryck, Karl Janssens, Nikolaos Kournoutos, Athanasios Papaioannou, Jordan Cheer, Wim Desmet. A semi-circular microphone array configuration for indoor pass-by noise sound synthesis. Internoise, Seoul, 2020/8/23-26.

2019

57. Mansour Alkmim, Fabio Bianciardi, Guillaume Vandernoot, Laurent De Ryck, Jacques Cuenca, Karl Janssens. Pass-by noise synthesis from transfer path analysis using IIR filters. 18th Asia-Pacific Vibration Conference, Sydney, 2019/11/18-20.
56. Mansour Alkmim, Laurent De Ryck, Jacques Cuenca. Sound synthesis of an arbitrarily moving source above frequency-dependent ground. 26th International Congress on Sound and Vibration, Montréal, 2019/7/7-11.
55. Jacques Cuenca, Laurent De Ryck, Peter Göransson, Timo Lähivaara. Material parameter identification of coupled resonant systems using impedance tubes. 26th International Congress on Sound and Vibration, Montréal, 2019/7/7-11.
54. Mansour Alkmim, Laurent De Ryck, Jacques Cuenca. Effect of frequency-dependent ground impedance on the sound pressure level of a moving source. Internoise 2019, Madrid, 2019/6/16-19.

2018

53. Timo Lähivaara, Peter Göransson, Jacques Cuenca. Deterministic and statistical parameter characterization in resonant fluid-structure interaction problems. 176th meeting of the Acoustical Society of America, Victoria, 2018/11/5-9.
52. Laurent De Ryck, Jacques Cuenca, Kristian Jambrošić, Christ Glorieux, Monika Rychtarikova, Vicent Romero-García, Alejandro Cebrecos, Noé Jiménez, Jean-Philippe Groby. Perceptual evaluation of metamaterials as insulation partitions: a listening test within the COST action DENORMS (CA15125). ISMA/USD, Leuven, 2018/9/17-19.
51. Luca Manzari, Peter Göransson, Jacques Cuenca, Inés López Arteaga. Experimental-numerical methods for inverse characterisation of the anisotropic-anelastic properties of porous materials, based on dynamic digital image correlation. ISMA/USD, Leuven, 2018/9/17-19.
50. Raphael Hallez, Claudio Colangeli, Jacques Cuenca, Emilio Di Lorenzo, Umberto Musella, Jan Debille. Assessment of the vibro-acoustic performance of an all-electric light aircraft based on ground and in-flight measurements. ISMA/USD, Leuven, 2018/9/17-19.
49. Mansour Alkmim, Jacques Cuenca, Laurent De Ryck, Peter Göransson. Model-based acoustic characterisation of duct components and extrapolation to inhomogeneous thermal conditions. ISMA/USD, Leuven, 2018/9/17-19.
48. Jacques Cuenca, Peter Göransson, Laurent De Ryck, Timo Lähivaara. Inverse Parameter Estimation in Resonant, Coupled Fluid-Structure Interaction Problems. ISMA/USD, Leuven, 2018/9/17-19.
47. Luke Dowling, Huina Mao, Lara Flanagan, John Kennedy, Henry Rice, Daniel Trimble, Peter Göransson, Jacques Cuenca. A combined design-manufacturing-testing investigation of micro- to macro-scale tailoring of open poroelastic materials based on perturbed kelvin cell micro-geometries. ISMA/USD, Leuven, 2018/9/17-19.
46. Peter Göransson, Jacques Cuenca, Timo Lähivaara. Some observations on parameter estimation in strongly coupled fluid-structure interaction problems. 13th World Congress on Computational Mechanics (WCCM), 2018/7/22-27.
45. Raphael Hallez, Claudio Colangeli, Jacques Cuenca, Laurent De Ryck. Impact of electric propulsion on aircraft noise - all-electric light aircrafts case study. AIAA/IEEE Electric aircraft technologies symposium, Cincinnati, 2018/7/12-13.
44. Cassio T. Faria, Fabien Chauvicourt, Raphael Hallez, Claudio Colangeli, Jacques Cuenca, Herman Van der Auweraer, Thierry Olbrechts, Djiby Toure, Olivier Broca. Early-stages comfort simulation of an e-aircraft. AIAA/IEEE Electric aircraft technologies symposium, Cincinnati, 2018/7/12-13.
43. Luca Manzari, Peter Göransson, Jacques Cuenca, Ines Lopez Arteaga. Toward fully anisotropic viscoelastic material models using an automated high-speed optical rig. 13th International Conference on Vibration Measurements by Laser and Noncontact Techniques, Ancona, 2018/6/19-22.
42. Luca Manzari, Peter Göransson, Jacques Cuenca, Inés López Arteaga. A fully automated high-speed optical rig for in vacuo, full field, non-contact vibration measurements for viscoelastic, anisotropic materials. Noise and Vibration: Emerging Methods (NOVEM), Ibiza, 2018/5/7-9.

2017

41. Peter Göransson, Jacques Cuenca, Eva Lundberg, Luca Manzari. Micro- to macro-scale investigations of anisotropy and local boundary stiffness variations in open-cell lightweight foams. Symposium on the acoustics of poro-elastic materials (SAPEM), Le Mans, 2017/12/6-8.
40. Juan Pablo Parra Martínez, Peter Göransson, Olivier Dazel, Jacques Cuenca. Acoustic response of anisotropic multilayered structures: sub-layering of the anisotropic poroelastic core and influence of the material natural axis orientation. Symposium on the acoustics of poro-elastic materials (SAPEM), Le Mans, 2017/12/6-8.
39. Jacques Cuenca, Laurent De Ryck, Arnaud Perdigon, Thibaud Le Scolan. Characterisation of inhomogeneous ducts and porous media and extrapolation to experimentally unavailable thermal conditions. Symposium on the acoustics of poro-elastic materials (SAPEM), Le Mans, 2017/12/6-8.
38. Alexandre Mauricio, Carina Freitas, Jacques Cuenca, Bram Cornelis, Karl Janssens, Kostantinos Gryllias, Killian Hendrickx. Condition monitoring of gears under medium rotational speed. 24th International Congress on Sound and Vibration, London, 2017/7/23-27.

2016

37. Juan Pablo Parra Martínez, Peter Göransson, Olivier Dazel, Jacques Cuenca, Luc Jaouen. Wave analysis of intrinsic phenomena related to anisotropic poroelastic materials in multilayered systems. ISMA/USD, Leuven, 2016/9/19-21.

36. Carina Freitas, Jacques Cuenca, Paulo Morais, Agusmian Partogi Ompusunggu, Mathieu Sarrazin, Karl Janssens. Comparison of vibration and acoustic measurements for detection of bearing defects. ISMA/USD, Leuven, 2016/9/19-21.
35. Carina Freitas, Paulo Morais, Jacques Cuenca, Agusmian Partogi Ompusunggu, Mathieu Sarrazin, Karl Janssens. Condition monitoring of bearings under medium and low rotational speed. 8th European Workshop on Structural Health Monitoring, Bilbao, 2016/7/5-8.
34. Andrea Venanzoni, Laurent De Ryck, Jacques Cuenca. Eulerian Frequency Analysis of Structural Vibrations from High-Speed Video. 12th Intl Conference on Vibration Measurements by Laser and Noncontact Techniques, Ancona, 2016/6/28-7/1.
33. Juan Pablo Parra Martínez, Peter Göransson, Olivier Dazel, Jacques Cuenca. Analyse d'ondes, puissances internes et comportement acoustique de matériaux poroélastiques dans des panneaux multicouches. Congrès Français d'Acoustique, Le Mans, 2016/4/11-15.

2015

32. Jacques Cuenca, Bart Peeters. Non-intrusive acoustic mode detection in turbofan and turboshaft engine intakes using an inverse method - application to aeroengine intakes. 6th European Conference for Aeronautics and Space Sciences (EUCASS), Kraków, 2015/6/29-7/3.
31. Juan Pablo Parra Martínez, Peter Göransson, Olivier Dazel, Jacques Cuenca. Power analysis of anisotropic porous materials in multilayered structures based on a plane wave approach. Euronoise 2015, Maastricht, 2015/5/31-6/3.
30. Jacques Cuenca, Christophe Van der Kelen, Peter Göransson. Inverse estimation of the elastic and anelastic properties of anisotropic foams - study of the static/dynamic separation. Euronoise 2015, Maastricht, 2015/5/31-6/3.
29. Jacques Cuenca, Laurent De Ryck. In-situ sound absorption of ground surfaces: processing and characterization methods. Euronoise 2015, Maastricht, 2015/5/31-6/3.
28. Peter Göransson, Jacques Cuenca, Christophe Van der Kelen. Experimental-numerical methods for inverse characterisation of some material properties of anistropic-anelastic porous materials. Noise and Vibration: Emerging Methods (NOVEM), Dubrovnik, 2015/4/13-15.

2014

27. Laurent De Ryck, Jacques Cuenca, Kevin Menino. Microphone array methods for in-situ measurement of road sound absorption - improving the ISO standard. Symposium on the acoustics of poro-elastic materials (SAPEM), Stockholm, 2014/12/16-18.
26. Jacques Cuenca, Laurent De Ryck, Kevin Menino. Inverse estimation of the properties of porous asphalt. Symposium on the acoustics of poro-elastic materials (SAPEM), Stockholm, 2014/12/16-18.
25. Juan Pablo Parra Martínez, Peter Göransson, Olivier Dazel, Jacques Cuenca. Influence of the orientation of anisotropic porous materials within multilayered structures. Symposium on the acoustics of poro-elastic materials (SAPEM), Stockholm, 2014/12/16-18.
24. Jacques Cuenca, Christophe Van der Kelen, Peter Göransson. Inverse estimation of the elastic and anelastic properties of anisotropic porous materials and application to a melamine foam. Symposium on the acoustics of poro-elastic materials (SAPEM), Stockholm, 2014/12/16-18.
23. Juan Pablo Parra Martínez, Peter Göransson, Olivier Dazel, Jacques Cuenca. Frequency behaviour of anisotropic multilayered structures in view of their acoustic optimisation. ISMA/USD, Leuven, 2014/9/15-17.
22. Jacques Cuenca, Marcin Kurowski, Bart Peeters. Computing the uncertain vibrations of plates with spatially-extended random excitation using the image source method. ISMA/USD, Leuven, 2014/9/15-17.
21. Jacques Cuenca, Marcin Kurowski, Bart Peeters. Vibrations of plates with spatially-extended random excitation - application to turbulence-induced vibrations. 11th World Congress on Computational Mechanics (WCCM), Barcelona, 2014/7/20-25.

2013

20. Jacques Cuenca, Raphael Hallez, Bart Peeters. Angular and radial acoustic mode detection in large cylindrical ducts by sequential measurements using a single ring of microphones. 20th International Congress on Sound and Vibration, Bangkok, 2013/7/7-11.
19. Jacques Cuenca. Computing the vibrations of polygonal panels under distributed random excitation using the image source method. 5th European Conference for Aeronautics and Space Sciences (EUCASS), Munich, 2013/7/1-5.

2012

18. Hossep Achdjian, Emmanuel Moulin, Farouk Benmeddour, Jamal Assaad, Jacques Cuenca. Prediction of average propagation characteristics in polygonal reverberant plates for experimental feature extraction. IEEE International Ultrasonics Symposium, Dresden, 2012/10/7-10.
17. Jacques Cuenca, Brian R. Mace, Neil S. Ferguson. Computing the response of an assembly of uncertain beams using an image source approach. ISMA/USD, Leuven, 2012/9/17-19.
16. Adrien Pelat, Jacques Cuenca, François Gautier, Laurianne Barguet. Potentialities of the acoustic black hole effect for damping plate vibrations. Acoustics 2012, Nantes, 2012/4/23-27.
15. Jacques Cuenca, Adrien Pelat, François Gautier, Neil S. Ferguson. Improving the acoustic black hole effect for vibration damping in one-dimensional structures. Acoustics 2012, Nantes, 2012/4/23-27.
14. Jacques Cuenca, Brian R. Mace, Neil S. Ferguson. High-frequency vibrations of uncertain coupled beams using an image source approach. Noise and Vibration: Emerging Methods (NOVEM), Sorrento, 2012/4/1-4.

2011

13. Jacques Cuenca, Peter Göransson. Inverse estimation of the elastic and anelastic properties of the porous frame of anisotropic open-cell foams. Symposium on the acoustics of poro-elastic materials (SAPEM), Ferrara, 2011/12/14-16.

12. Jacques Cuenca, Adrien Pelat, François Gautier. Vibration damping in polygonal plates using the acoustic black hole effect: model based on the image source method. 20e Congrès Français de Mécanique, Besançon, 2011/8/29-9/2.
11. Jacques Cuenca. Vibraciones de placas poligonales y amortiguación de vibraciones por efecto de agujero negro acústico. 1ra Convención Diffusion Magazine, Bogotá, 2011/8/25-27.

2010

10. Jacques Cuenca, François Gautier, Laurent Simon. Modeling the flexural vibrations of planar assemblies of polygonal plates using the image source method. Internoise 2010, Lisbon, 2010/6/13-16.
9. Vasil B. Georgiev, Jacques Cuenca, François Gautier, Laurent Simon. Vibration reduction of beams and plates using the acoustic black hole effect. Internoise 2010, Lisbon, 2010/6/13-16.
8. Jacques Cuenca, François Gautier, Laurent Simon. Modélisation des vibrations de flexion de plaques minces polygonales par la méthode des sources image. Congrès Français d'Acoustique, Lyon, 2010/4/13-16.
7. Vasil B. Georgiev, Jacques Cuenca, Miguel A. Molerón Bermúdez, François Gautier, Laurent Simon. Recent progress in vibration reduction using the acoustic black hole effect. Congrès Français d'Acoustique, Lyon, 2010/4/13-16.

2009

6. Jacques Cuenca, François Gautier, Laurent Simon. Measurement of complex bending stiffness of a flat panel covered with a viscoelastic layer using the image source method. Euronoise 2009, Edinburgh, 2009/10/26-28.
5. Vasil B. Georgiev, Jacques Cuenca, Miguel A. Molerón Bermúdez, François Gautier, Laurent Simon, Victor V. Krylov. Numerical and experimental investigation of the acoustic black hole effect for vibration damping in beams and elliptical plates. Euronoise 2009, Edinburgh, 2009/10/26-28.
4. Jacques Cuenca, François Gautier, Laurent Simon. Modelling the vibrations of convex polygonal plates by the image source method. Noise and Vibration: Emerging Methods (NOVEM), Oxford, 2009/4/5-8.

2008

3. Jacques Cuenca, François Gautier, Laurent Simon. Computing high frequency vibrations of simply supported polygonal plates by the Image Source Method. Second Acoustical Society of America and European Acoustics Association joint conference (Acoustics'08), Paris, 2008/6/29-7/4.
2. François Gautier, Jacques Cuenca, Victor V. Krylov, Laurent Simon. Experimental investigation of the acoustic black hole effect for vibration damping in elliptical plates. Second Acoustical Society of America and European Acoustics Association joint conference (Acoustics'08), Paris, 2008/6/29-7/4.

2007

1. Jacques Cuenca, René Caussé. Three-dimensional interaction between strings, bridge and soundboard in modern piano's treble range. 19th International Congress on Acoustics, Madrid, 2007/9/2-7.

Invited seminars

2021/4/21	Low-frequency wave propagation through an audience (with E. Shabalina and J.P. Parra Martínez). MW Laboratory for Sound and Vibration Research, KTH Royal Institute of Technology, Stockholm, Sweden.
2021/3/17	Deterministic and statistical characterisation of poroelastic media from sound absorption measurements. MW Laboratory for Sound and Vibration Research, KTH Royal Institute of Technology, Stockholm, Sweden.
2019/12/12	Inverse methods for the characterisation of anisotropic porous media and coupled systems. LAUM, Le Mans University, Le Mans, France.
2019/11/12	Inverse methods for the characterisation of anisotropic porous media and coupled systems. Computational Physics and Inverse Problems research group, University of Eastern Finland, Kuopio, Finland.
2019/2/01	Inverse methods for the characterisation of anisotropic porous media and coupled systems. IEMN, Valenciennes, France.
2018/4/18	Acoustic characterisation of ground surfaces and duct components. Marcus Wallenberg Laboratory for Sound and Vibration Research, KTH Royal Institute of Technology, Stockholm, Sweden.
2014/10/02	Image-source model of the mid- and high-frequency vibrations of uncertain beams and polygonal plates. FEMTO-ST, Besançon, France.
2011/8/29	Vibrations of polygonal plates and acoustic black holes. Universidad de San Buenaventura, Medellín.

Reviewer

- Acta Acustica united with Acustica (EAA)
- Mechanical Systems and Signal Processing (Elsevier)
- Applied Acoustics (Elsevier)
- Journal of Sound and Vibration (Elsevier)
- Journal of the Acoustical Society of America (AIP)
- Materials and Design (Elsevier)
- Mathematics and Computers in Simulation (Elsevier)
- Structures (Elsevier)