

Curriculum Vitae: Michele Ducceschi

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Personal Website

Institutional website
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Employment History

2021– Professor (associate), Department of Engineering, University of Bologna
2020–2021 Teaching Fellow, Reid School of Music, University of Edinburgh
2017–2020 Leverhulme Early Career Fellow, as above
2015–2017 Royal Society’s Newton International Fellow, as above
2014–2015 Postdoctoral researcher, Unité de mécanique, ENSTA - ParisTech

Education

2014 Ph.D. Mécanique, École Polytechnique and ENSTA - ParisTech, France
2010 MSc. Acoustics and Music Technology, University of Edinburgh, UK
2008 Bsc. Physics, University of Padova, Italy

Research Interests

- Computational methods in acoustics: finite-difference, modal, and other structure-preserving schemes for simulating vibrating systems such as strings, plates, and membranes.
- Wave turbulence and nonlinear phenomena in elastic and acoustic systems.
- Numerical analysis and simulation of strongly nonlinear dynamical systems, with emphasis on non-iterative time-domain methods.
- Physics-based modelling and sound synthesis of musical instruments for audio applications.
- Virtual analog modelling of audio circuits, with emphasis on non-iterative schemes for efficient simulation of nonlinear components.
- Vibrational and structural analysis of orthotropic and thin-plate materials, inverse estimation of elastic constants, and applications to instrument design and heritage studies.
- Room acoustics and large-scale acoustic modelling, including impulse-response synthesis and modal reverberation.
- Digital musical instrument interface design for cultural-heritage preservation and enhanced musical engagement.
- Historical and cultural-heritage acoustics: virtual reconstruction and preservation of historical instruments and performance spaces.

Research Grants and Participation in Research Projects

2026– Advisor, ERC Synergy Grant, *Rem@ke: Reconstructing Embodied Musical Knowledge at the Keyboard*, €9 million. Principal Investigators: Massimiliano Guido (University of Pavia), Andrea Schiavio (University of York), Joel Speerstra (University of Gothenburg).
2021–2026 Principal Investigator, ERC Starting Grant, *NEMUS: Numerical Restoration of Historical Musical Instruments*, €1.5 million. Host institution: The University of Bologna.

- 2022–2024** Host, Finnish Cultural Foundation, *Numerical Simulation of the Kantele*, €82,000. Principal Investigator: Henna Tahvanainen.
- 2017–2020** Principal Investigator, Leverhulme Early Career Fellowship, *The acoustics of early and modern double basses: a physics-based investigation*, €100,000. Host: Stefan Bilbao, The University of Edinburgh.
- 2015–2017** Principal Investigator, Newton International Fellowship, *Real-time sound synthesis of impacted string instruments with sophisticated nonlinear contact laws*, €100,000. Host: Stefan Bilbao, The University of Edinburgh.
- 2015–2017** Postdoctoral Fellow, ERC Starting Grant, *NESS: Next Generation Sound Synthesis*, € 1.5 million. Host institution: The University of Edinburgh. Principal Investigator: Stefan Bilbao.

Awards

- 2025** POMA Student Paper Competition. *Convergence analysis and relaxation techniques for modal scalar auxiliary variable methods applied to nonlinear transverse string vibration*. First author: R. Russo. Awarded by the 188th Meeting of the Acoustical Society of America.
- 2023** Innovation Award. *MODUS* (with Physical Audio). Awarded by the Computer Music Magazine.
- 2021**
- Best paper award, DAFx. *A physical model of the trombone using dynamic grids for finite-difference schemes*. First author: S. Willemsen.
 - Best paper award, DAFx. *Dynamic grids for finite-difference schemes in musical instrument simulations*. First author: S. Willemsen

Research Supervision

- 2026–** Giulia Fratoni, University of Bologna. Postdoctoral supervisor. Modal techniques for auralisation of acoustic spaces.
- 2025–** Matthew Hamilton, University of Bologna. Historical musical instrument control interface design.
- 2025–** Sebastian Duran, University of Bologna. Postdoctoral supervisor. Reverse engineering methods for historical musical instrument analysis and preservation.
- 2024–** Riccardo Russo, University of Bologna. Postdoctoral supervisor. Physical modelling hybridisation with machine learning techniques.
- 2023–** Craig J. Webb, University of Bologna. Postdoctoral supervisor. Development of real-time audio plugins for advanced physical models.
- 2025** Pierre Arrighi, Université du Mans (exchange). Modal methods for violin simulation.
- 2025** Philemon Schabanel, École Normale Lyon (exchange). Measurement and simulation of a harpsichord soundboard.
- 2024–2025** Alexis Mousseau, Université du Mans (exchange). Internship supervisor and external PhD advisor. Acoustic frequency-up conversion by nonlinear thin plate vibrations.
- 2022–2025** Matthew Hamilton, University of Bologna. Main PhD supervisor. Open Methods for Digital Conservation of Musical Instruments.
- 2022–2025** Sebastian Duran, University of Bologna. Main PhD supervisor. Experimental vibroacoustics analysis of orthotropic soundboards. Application to the digital restoration of ancient musical instruments.

2024	Maria Mata, Université du Mans (exchange). Internship supervisor. Python benchmarking of physical modelling simulation techniques.
2024	Damien Forgeot D'Arc, École Normale Paris (exchange). Internship supervisor. Finite element modelling in musical acoustics.
2022–2024	Henna Tahvanainen, University of Bologna. Postdoctoral supervisor. Numerical Simulation of the Kantele.
2021–2025	Dario D'Orazio, University of Bologna. Research supervisor. Vehicle Acoustics.
2021–2024	Riccardo Russo, University of Bologna. Main PhD supervisor. Non-iterative numerical simulation techniques for nonlinear string vibration in musical acoustics.

Postgraduate Supervision

2023	Luca Lelli, University of Bologna. Sound synthesis of an ancient Greek guitar.
2021	Riccardo Russo, Aalborg University Copenhagen. A digital plate reverb model.
2021	Alessandro Cerioli, Aalborg University Copenhagen. A non-iterative nonlinear string model.
2021	Carlos Davey, University of Edinburgh. A real-time spring reverberation plugin.
2019	Alex Bittar, University of Edinburgh. A Fender Rhodes physical model.
2018	- Calum Jamieson, University of Edinburgh. A digital model of the Roland TR-808. - Adam Yassin, University of Edinburgh. Sonification of ECG signals. - Gonzalo Villegas, University of Edinburgh. A coupled string-plate model.

Teaching

2021–	Computational Acoustics (99560) Department of Engineering, University of Bologna: Course organiser and lecturer. Numerical analysis and simulation of wave propagation in elastic media (cables, bars, membranes, plates, rooms). PG level.
2025	Physical Modelling Sound Synthesis Department of Mathematics, University of Bologna. Course organiser and lecturer. Grid-based and modal methods sound synthesis of acoustic instruments. PhD level.
2019–2021	Acoustics (MUSI11047). Reid School of Music, University of Edinburgh. Course organiser and lecturer. Fundamentals of vibration with applications to musical systems and room acoustics measurement. PG level.
2017–2018	Acoustics (MUSI11047). Reid School of Music, University of Edinburgh. Teaching assistant. Support for labs and coursework in physical acoustics and vibration analysis. PG level.
2011–2014	Ondes et Vibrations . ENSTA ParisTech . Teaching assistant. Wave propagation and structural vibration classes and practicals. PG level.
2011–2014	MODEX . ENSTA ParisTech. Teaching assistant. Experimental methods in acoustics (measurement and analysis techniques). PG level.

Editorial Duties

2025	Guest Editor, Frontiers in Signal Processing for the special issue: <i>Sound Synthesis Through Physical Modelling</i>
2024	Guest Editor, Acta Acustica for the special issue: <i>Musical Acoustics: Latest Advances in Analytical, Numerical and Experimental Methods Tackling Complex Phenomena in Musical Instruments</i>

Invited Talks and Lectures

Keynote Presentations

- 2021** Sound and Music Computer Conference. Real-time, large-scale physical modelling sound synthesis.

Lectures at Research Institutes and Universities

- 2025** The Institute of Sound and Vibration Research, University of Southampton, UK. *Efficient modal Sound Synthesis and the NEMUS project*
- 2024**
- CISM (International Centre for Mechanical Sciences), Udine, Italy. Guest lecturer for the one-week course *Physics of Musical Instruments Applied to Instrument Making*
 - Almafest, University of Bologna, Italy. *The NEMUS Project*.
 - Waves Acoustics and Music, University of Ferrara, Italy. *Sound synthesis through physical modelling*.
 - Sonic Arts Research Centre (SARC), Queen’s University Belfast, UK. *Modal approaches in physical modelling*.
- 2023**
- Dyson School of Design Engineering, Imperial College London, UK. *Modular Sound Synthesis*
 - Unité de Mecanique, ENSTA ParisTech, France. *Fast integration schemes for Hamiltonian systems*
 - Lab des Sciences et Technologies de la Musique et du Son, IRCAM, Centre Pompidou, France. *Efficient modal sound synthesis*.
- 2022**
- Laboratoire d’Acoustique, Université du Mans, France. *Non-iterative simulation techniques for Hamiltonian systems*.
 - Department of Mathematics, University of Bologna, Italy. *Digital plate reverb models*
 - Music and Acoustics Engineering, Politecnico di Milano, Cremona, Italy. *Non-iterative string-bow simulation*.
- 2020**
- Marche Polytechnic University, Italy. *Virtual-analog simulation of the Moog ladder filter*.
 - Department of Musicology, University of Pavia, Italy. *Presenting the NEMUS project*.
- 2019** Music Research Seminars, Reid School of Music, University of Edinburgh, UK. *Non-iterative simulation techniques for collisions in musical instruments*.
- 2017** Center for Computer Research in Music and Acoustics (CCRMA) Stanford University, USA. *Next Generation Sound Synthesis at the Edinburgh Parallel Computing Centre*.

Lectures at Festivals and Outreach

- 2025**
- Collezione Tagliavini, San Colombano, Italy. *Digital techniques for the preservation of musical cultural heritage*.
 - Accademia del Suono, Milan, Italy. *Real-time physical modelling audio plugins. MODUS and Preparation 2 by Physical Audio*.

- 2019 • The Edinburgh Festival of Sound, Edinburgh, UK. *Physically modelled reverb plugins*.
- Curious Minds, AK Bell Library, Perth, Scotland, UK. *The physics of musical instruments*.

Industrial Presentations

- 2025 Yamaha Corp. visit at the University of Bologna *The NEMUS Project: overview, research themes, and the musical cultural heritage preservation*.

Publications

Journal Articles

- 2025 • Duran, S., Tahvanainen, H., & **Ducceschi, M.** (2025). Non-dimensional modal analysis of musical instrument plates. *The Journal of the Acoustical Society of America*, accepted for publication.
- Michon, R., **Ducceschi, M.**, Cochard, P., Skare, T., Webb, C. J., & Russo, R. (2025). Evaluating CPU, GPU, and FPGA performance in the context of modal reverberation: a comparative analysis. *Frontiers in Signal Processing*, 5, 1522604.
- Hélie, T., van Walstijn, M., & **Ducceschi, M.** (2025). Editorial: Sound synthesis through physical modeling. *Frontiers in Signal Processing*, 5, 1715792.
- 2024 • **Ducceschi, M.**, Duran, S., Tahvanainen, H., & Ausiello, L. (2024). A method to estimate the rectangular orthotropic plate elastic constants using least-squares and Chladni patterns. *Applied Acoustics*, 220, 109949.
- Fratoni, G., D’Orazio, D., **Ducceschi, M.**, & Garai, M. (2024). Acoustic analysis of a well-preserved Renaissance music space: The Odeo Cornaro in Padua. *Acta Acustica*, 8, 25.
- Ausiello, L., **Ducceschi, M.**, Duran, S., & Morrison, B. (2024). Affordable wide-band measurement ecosystem for musical acoustics based on electro-dynamic transducers. *Acta Acustica*, 8, 53.
- **Ducceschi, M.** (2024). An open-source toolbox for direct and inverse modelling of orthotropic plates. *SSRN*, 5045108.
- 2023 • Bilbao, S., **Ducceschi, M.**, & Zama, F. (2023). Explicit exactly energy-conserving methods for Hamiltonian systems. *Journal of Computational Physics*, 472, 111697.
- Bilbao, S., & **Ducceschi, M.** (2023). Models of musical string vibration. *Acoustical Science and Technology*, 44(3), 194–209.
- 2022 • **Ducceschi, M.** & Bilbao, S. (2022). Simulation of the geometrically exact non-linear string via energy quadratisation. *Journal of Sound and Vibration*, 534, 117021.
- Willemsen, S., Bilbao, S., **Ducceschi, M.**, & Serafin, S. (2022). The dynamic grid: Time-varying parameters for musical instrument simulations based on finite-difference time-domain schemes. *AES: Journal of the Audio Engineering Society*, 70(9), 650–660.
- **Ducceschi, M.** & Bilbao, S. (2022). Non-iterative simulation methods for virtual analog modelling. *IEEE Transactions on Audio, Speech and Language Processing*.

- 2021** **Ducceschi, M.**, Bilbao, S., Willemsen, S., & Serafin, S. (2021). Linearly-implicit schemes for collisions in musical acoustics based on energy quadratisation. *The Journal of the Acoustical Society of America*, 149(5), 3502–3516.
- 2019** • **Ducceschi, M.** & Bilbao, S. (2019). Conservative finite difference time domain schemes for the prestressed Timoshenko, shear and EulerBernoulli beam equations. *Wave Motion*.
- Bilbao, S., Desvages, C., **Ducceschi, M.**, Hamilton, B., Harrison-Harsley, R., Torin, A., & Webb, C. (2019). Physical modeling, algorithms, and sound synthesis: The NESS project. *Computer Music Journal*, 43(2–3), 15–30.
- 2016** • **Ducceschi, M.** & Bilbao, S. (2016). Linear stiff string vibrations in musical acoustics: Assessment and comparison of models. *The Journal of the Acoustical Society of America*, 140(4), 2445–2454.
- **Ducceschi, M.**, Bilbao, S., & Desvages, C. (2016). Modelling collisions of non-linear strings against rigid barriers: Conservative finite difference schemes with application to sound synthesis. *[preprint]*.
- 2015** • **Ducceschi, M.** & Touzé, C. (2015). Modal approach for nonlinear vibrations of damped impacted plates: Application to sound synthesis of gongs and cymbals. *Journal of Sound and Vibration*, 344, 313–331.
- Bilbao, S., Thomas, O., Touzé, C., & **Ducceschi, M.** (2015). Conservative numerical methods for the full von Kármán plate equations. *Numerical Methods for Partial Differential Equations*, 31(6), 1948–1970.
- 2014** • **Ducceschi, M.**, Cadot, O., Touzé, C., & Bilbao, S. (2014). Dynamics of the wave turbulence spectrum in vibrating plates: A numerical investigation using a conservative finite difference scheme. *Physica D: Nonlinear Phenomena*, 280, 73–85.
- **Ducceschi, M.**, Touzé, C., Bilbao, S., & Webb, C. J. (2014). Nonlinear dynamics of rectangular plates: investigation of modal interaction in free and forced vibrations. *Acta Mechanica*, 225(1), 213–232.

Conference Proceedings

- 2025** • Russo, R., **Ducceschi, M.**, Webb, C. J., *et al.* (2025). Convergence analysis and relaxation techniques for modal scalar auxiliary variable methods applied to nonlinear transverse string vibration. In: *The Journal of the Acoustical Society of America 157.4_Supplement (2025)*, 1–12.
- Duran, S., Tahvanainen, H., **Ducceschi, M.** (2025). On the use of tonewood leftovers for elastic parameter estimation of soundboards. In: *The Journal of the Acoustical Society of America 157.4_Supplement (2025)*, 1–12.
- Hamilton, M., **Ducceschi, M.**, Livi, R., Vincens, C., McPherson, A. (2025). Augmentation of a historical harpsichord keyboard replica for haptic-enabled interaction in museum exhibitions. *Proceedings of the International Conference on New Interfaces for Musical Expression (NIME)*.
- **Ducceschi, M.**, Webb, C. J., & Fratoni, G. (2025). Efficient synthesis of large room impulse responses in the modal domain. *Immersive and 3D Audio: from Architecture to Automotive (I3DA)*, IEEE.
- Hamilton, M., Russo, R., Webb, C. J., & **Ducceschi, M.** (2025). A Two-register haptic interface for articulated control of harpsichord physical models. *Proceedings of Forum Acusticum / Euronoise 2025*

- 2024**
- Bilbao, S., Russo, R., Webb, C. J., & **Ducceschi, M.** (2024). Real-time guitar synthesis. *27th International Conference on Digital Audio Effects (DAFx24)*, 163–170.
 - Hamilton, M., **Ducceschi, M.**, Mousseau, A., & Duran, S. (2024). MAGPIE: a web-based, open-source framework for plate vibration analysis. *Internoise 2024*.
 - Duran, S., Tahvanainen, H., & **Ducceschi, M.** (2024). Establishing a benchmark for comparative analysis of thin and thick plate modal frequencies: A non-dimensional paradigm. *Internoise 2024*.
 - Davison, M., Webb, C. J., **Ducceschi, M.**, & McPherson, A. P. (2024). A Self-Sensing Haptic Actuator for Tactile Interaction with Physical Modelling Synthesis. *Proceedings of NIME 2024*.
 - **Ducceschi, M.**, Mousseau, A., Bilbao, S., & Russo, R. (2024). Fast simulation of the KirchhoffCarrier string with an energy-storing boundary condition using a Scalar Auxiliary Variable approach. *IFAC-PapersOnLine*, 58(6), 220–225.
 - Russo, R., Bilbao, S., & **Ducceschi, M.** (2024). Scalar auxiliary variable techniques for nonlinear transverse string vibration. *IFAC-PapersOnLine*, 58(6), 160–165.
- 2023**
- Duran, S., **Ducceschi, M.**, Tahvanainen, H., Ausiello, L. (2023). Experimentally-tuned synthesis of a thin plate. In: *Proceedings of the Institute of Acoustics*, 45(3).
 - Russo, R., **Ducceschi, M.**, Bilbao, S., & Hamilton, M. (2023). Efficient simulation of acoustic physical models with nonlinear dissipation. *Sound and Music Computing Conference*, 125–131.
 - **Ducceschi, M.**, Bilbao, S., & Webb, C. (2023). Real-time modal synthesis of nonlinearly interconnected networks. *Proceedings of the 26th International Conference on Digital Audio Effects (DAFx-23)*, 53–60.
 - Bilbao, S., Webb, C., Wang, Z., & **Ducceschi, M.** (2023). Real-time gong synthesis. *Proceedings of the 26th International Conference on Digital Audio Effects (DAFx-23)*, 1–8.
 - Russo, R., **Ducceschi, M.**, Bilbao, S., *et al.* (2023). Efficient simulation of the yaybahar using a modal approach. *Proceedings of the 26th International Conference on Digital Audio Effects (DAFx-23)*, 1–8.
 - Duran, S., **Ducceschi, M.**, Tahvanainen, H., & Ausiello, L. (2023). Fast estimation of wood elastic constants using least-squares. *Forum Acusticum 2023: Acoustics for a Green World*.
 - **Ducceschi, M.**, Hamilton, M., Russo, R., *et al.* (2023). Simulation of the snare-membrane collision in modal form using the Scalar Auxiliary Variable (SAV) method. *Forum Acusticum 2023*, 1–7.
- 2022**
- Bilbao, S., **Ducceschi, M.**, *et al.* (2022). Fast explicit algorithms for Hamiltonian numerical integration. *Proceedings of ENOC 2022 – 10th European Nonlinear Dynamics Conference*, 1–7.
 - **Ducceschi, M.** & Bilbao, S. (2022). Real-time simulation of the struck piano string with geometrically exact nonlinearity via novel quadratic Hamiltonian method. *ENOC 2020 / ENOC 2022*.
 - **Ducceschi, M.**, Bilbao, S., Webb, C. J., *et al.* (2022). Real-time simulation of the struck piano string with geometrically exact nonlinearity via a scalar quadratic energy method. *Proceedings of ENOC 2022*, 1–8.
 - Russo, R., **Ducceschi, M.**, & Bilbao, S. (2022). Efficient simulation of the bowed string in modal form. *International Conference on Digital Audio Effects (DAFx-22)*, 122–129.

- 2021**
- Willemsen, S., Bilbao, S., **Ducceschi, M.**, & Serafin, S. (2021). A physical model of the trombone using dynamic grids for finite-difference schemes. *24th International Conference on Digital Audio Effects (DAFx-21)*, 152–159.
 - Danish, M., Bilbao, S., & **Ducceschi, M.** (2021). Applications of port Hamiltonian methods to non-iterative stable simulations of the Korg35 and Moog 4-pole VCF. *DAFx-21*, 33–40.
 - Willemsen, S., Bilbao, S., **Ducceschi, M.**, & Serafin, S. (2021). Dynamic grids for finite-difference schemes in musical instrument simulations. *DAFx-21*, 144–151.
 - **Ducceschi, M.**, Bilbao, S., & Webb, C. J. (2021). Non-iterative schemes for the simulation of nonlinear audio circuits. *DAFx-21*, 25–32.
 - Cerioli, A., **Ducceschi, M.**, Serafin, S., *et al.* (2021). Real-Time Implementation of Non-Linear Physical Models with Modal Synthesis and Performance Analysis. *2nd Nordic Sound and Music Conference (NordicSMC-21)*, 1–6.
- 2019**
- **Ducceschi, M.** & Bilbao, S. (2019). Non-iterative, conservative schemes for geometrically exact nonlinear string vibration. *International Congress on Acoustics (ICA 2019)*.
 - **Ducceschi, M.** & Bilbao, S. (2019). Non-iterative solvers for nonlinear problems: the case of collisions. *Proceedings of the 22nd Conference on Digital Audio Effects (DAFx-19)*.
 - Bilbao, S., **Ducceschi, M.**, & Webb, C. (2019). Large-scale real-time modular physical modeling sound synthesis. *Proceedings of the 22nd Conference on Digital Audio Effects (DAFx-19)*.
 - **Ducceschi, M.** & Bilbao, S. (2019). A Physical Model for the Prepared Piano. *International Congress on Sound and Vibration (ICSV26)*.
- 2018**
- Ducceschi, M.** (2018). Un modello fisico per pianoforte preparato. *XXII CIM*.
- 2017**
- **Ducceschi, M.** (2017). A numerical scheme for various nonlinear forces, including collisions, which does not require an iterative root finder. *20th International Conference on Digital Audio Effects (DAFx-17)*.
 - Touzé, C., Thomas, O., Cadot, O., Bilbao, S., & **Ducceschi, M.**. Transition à la turbulence ondes en vibration de plaques minces: rôle des résonances internes. *Rencontre du Non-Linéaire 2017*.
- 2016**
- **Ducceschi, M.** & Webb, C. (2016). Plate reverberation: Towards the development of a real-time physical model for the working musician. *Proceedings of the International Congress on Acoustics (ICA 2016)*.
 - Desvages, C., Bilbao, S., & **Ducceschi, M.** (2016). Realistic frequency-dependent damping for time domain modelling of linear string vibration. *Proceedings of the International Conference on Acoustics (ICA 2016)*.
 - Aragonès, À., Bilbao, S., & **Ducceschi, M.** (2016). A complete vibroacoustic model for the nonlinear response of imperfect circular plates: application to sound synthesis. *INTER-NOISE and NOISE-CON Congress and Conference Proceedings*, 253(4), 4105–4116.

- 2015**
 - Touzé, C., & **Ducceschi, M.** (2015). Energy-conserving Modal Synthesis scheme for Vibrations of Thin Plates in Strongly Nonlinear Regime. *European Solid Mechanics Conference (ESMC 2015)*.
 - **Ducceschi, M.** & Touzé, C. (2015). Simulations of nonlinear plate dynamics: an accurate and efficient modal algorithm. *18th International Conference on Digital Audio Effects (DAFx-15)*.
 - Lee, J., Boisson, J., Rouby, C., Doaré, O., **Ducceschi, M.**, & Bodelot, L. (2015). Dynamics of a chain of permanent magnets. *ESMC 2015*.
- 2014**
 - **Ducceschi, M.**, Touzé, C., Cadot, O., & Bilbao, S. (2014). Non-stationary wave turbulence in elastic plates: a numerical investigation. *European Nonlinear Dynamics Conference (ENOC 2014)*.
 - **Ducceschi, M.** & Touzé, C. (2014). Vibrations non-linéaires de plaques minces: résolution numérique et application à la synthèse sonore de gongs. *Congrès Français d'Acoustique (CFA 2014)*.
- 2013**
 - **Ducceschi, M.**, Touzé, C., & Bilbao, S. (2013). Sound synthesis of gongs obtained from nonlinear thin plates vibrations: Comparison between a modal approach and a finite difference scheme. *SMAC Stockholm Music Acoustics Conference 2013*.
 - **Ducceschi, M.**, Touzé, C., Cadot, O., & Bilbao, S. (2013). Numerical simulations of wave turbulence in vibrating plates. *Rencontres du Non-Linéaire 2013*.
- 2012**
 - **Ducceschi, M.**, Touzé, C., & Bilbao, S. (2012). Nonlinear plate vibrations: A modal approach with application to cymbals and gongs. *Acoustics 2012*.

Book Chapters

- 2016**
 - Cadot, O., **Ducceschi, M.**, Humbert, T., Miquel, B., Mordant, N., Josserand, C., & Touzé, C. (2016). Wave turbulence in vibrating plates. In: *Handbook of Applications of Chaos Theory*, 1, 425–448. Chapman & Hall/CRC.

Thesis

- 2014**
 - **Ducceschi, M.** (2014). *Nonlinear vibrations of thin rectangular plates: a numerical investigation with application to wave turbulence and sound synthesis*. PhD Thesis, École Polytechnique and ENSTA ParisTech.

Catalogues

- 2014**
 - **Ducceschi, M.** *et al.* (2014). *DER BLITZ: an Interview on Minor Strain by Francesco Fonassi*, exhibition catalogue, MAG Museo Alto Garda.