

PERSONAL INFORMATION

Dario D'Orazio

📍 Via Breventani 10 40134 Bologna, Italy

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📅 Date of birth 1st May 1978 | 🇮🇹 Nationality Italian

Acoustician. Assistant Professor at Department of Industrial Engineering, University of Bologna. Lecturer in Vehicle Acoustics. Research/design in/of performance, learning, and working spaces. In the last years, oriented to innovative materials development (AMMs), and Machine-Learning applications in acoustics. Member of the ISO Committee on Acoustics.

EMPLOYMENT HISTORY

2022 Visiting Researcher at Department of Speech and Hearing Science, University of Illinois at Urbana-Champaign, IL, US

from 2021 Assistant Professor at Department of Industrial Engineering (DIN), University of Bologna

Grants:

2022-ongoing Research analysis and robust design to improve the acoustic comfort in learning and working spaces, funding from St. Gobain - Italy

Research projects:

2021-ongoing Senior researcher of NEMUS project, funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme Grant agreement No. 950084

2017–2021 Collaborator of UniBo

Grants:

2019 Improvement of sound quality in lecture halls. Supported by LILEC, University of Bologna

2018 Evaluation of the survey activities of health care operators of Emilia-Romagna, Liguria e Toscana regions on noise and vibrations risks in most critical industrial sectors. Supported by INAIL

2017–2021 Part-time acoustic consultant

See next section

2011–2017 Post-doc Research Fellow at DIN, University of Bologna

1.9.2016-31.8.2017 Metodi di elaborazione di risposte all'impulso MIMO per catene di misura innovative basate su array microfonici

1.8.2013-31.7.2016 Tecniche avanzate di analisi del segnale per l'elaborazione di risposte all'impulso acustiche

1.8.2011-31.7.2013 Controllo attivo del rumore (Noise active control). Supported by IPLOM, Busalla (GE)

Research projects:

Round Robin test for acoustics measurements held by DENORMS (Designs for Noise Reducing Materials and Structures) – Cost Action 15125, WG 2.

1st Italian Round Robin Test on reverberant rooms (ISO 354 draft)

Acoustic design for the reverberation room at Acoustic Laboratory of University of Bologna

1st Round Robin on Auralisation held by SEACEN consortium

Acoustic design for the listening room at Acoustic Laboratory of University of Bologna

Evaluation of flanking transmission of innovative junctions for wooden structures. Supported by Rothoblaas.

Environmental and architectural acoustics in the municipal jurisdiction of Budrio (BO).

Acoustics and architecture of historical theatres of Emilia-Romagna". Supported by CIRI, Inter-University Centre for Industrial Research

AS A PART-TIME ACOUSTIC CONSULTANT (2017-2021)

Performance space

- 2020-2023 Foyer Teatro Rossini, Pesaro
- 2022 Refurbishment of Foyer Teatro Bonci, Cesena.
- 2021 Refurbishment of Teatro Comunale, San Felice Sul Panaro (Modena).
- 2021 Refurbishment of Teatro del Popolo, Concordia sulla Secchia (Modena).
- 2021 New theatre Sant'Agostino former convent, Comacchio (Ferrara) (Architects: ASarchitects).
- 2021 Rehearsal room and school of music, San Lazzaro di Savena (Bologna).
- 2018 Pianoterra performance and working space, Bologna.
- 2015–2018 Opera house "Amintore Galli" in Rimini. With M. Facondini, A. Farnetani, A. Farina, R. Pompoli, N. Prodi, G. Semprini, L. Tronchin (coordinator).
- 2013–2014 Canopy array for symphonic orchestra. Duse Theatre, Bologna.
- 2009 Auditorium *Le Torri dell'acqua*, Budrio.

Office

- 2022-2023 PWC inside former "Banco di Napoli" Building, Bologna (Architects: Openproject). WELL certified.
- 2022 Emergency Headquarters, Milano (Architects: TAMassociati).
- 2021 IMA Headquarters, Ozzano (Bologna).
- 2021 CMRE IMA Safe office building, Ozzano (Bologna).
- 2020-2021 IMA Pharma office building, Castel San Pietro Terme (Bologna).
- 2019 Altromercato headquarters, Verona (Architects: TAMassociati).

Auditorium and conference room

- 2021-23 Main lecture hall (Aula Magna) Santa Lucia, Bologna.
- 2021 IMA main auditorium, Ozzano (Bologna).
- 2021 Sala CDA Università di Bologna, University Headquarters, Bologna.

Lecture hall and classroom

- 2021 Historical lecture hall (Sala Ulisse), Accademia delle Scienze, Bologna.
- 2021 Historical lecture hall (Sala VIII Centenario), University Headquarters, Bologna.
- 2020 Brancati School, Pesaro (Leed v4 BD+C Platinum).
- 2020-2021 Lecture hall (5C), Industrial Chemistry Building, University of Bologna.
- 2019-2020 Historical lecture hall (Sala delle Armi), Sala delle feste, Main lecture hall and classrooms, Law Department, University of Bologna.
- 2019 *Poeti* and *Ruffilli* historical lecture halls, Political Science Building, Bologna.
- 2019 Lecture halls and classrooms, Foreign Languages and Literature Department, Bologna.
- 2019 Lecture halls in the new building of Engineering Faculty, University of Modena.
- 2017-2018 Lecture halls, Letters and Philosophy Department, University of Bologna.

Worship space

- 2020-2022 San Pietro Cathedral Church, Bologna
- 2019 Sala del Regno Testimoni di Geova, Bologna
- 2016-2019 Resurrezione di Nostro Signore Church, Viareggio (Architects: TAMassociati).

Eating Establishment

- 2019-ongoing Altromercato headquarters canteen and restaurant, Verona.
- 2020-ongoing Alcenero headquarters restaurant, San Lazzaro di Savena (Bologna).
- 2018 Food Court of Elnos Shopping Center, Brescia.

Cinema and studio

- 2017-2019 Audio restoring control room at *Studio Son*, Locarno (CH).
- 2016 Historical rebuilding of the former Cinema *Fulgor* inside of the new *Fellini museum*, Rimini

Other

- 2020-ongoing 22nd April Park, Modena. Renzo Piano's G124 working group

EDUCATION AND TRAINING

1996-2006 MSc degree in Electronic Engineering

University of Bologna, Italy

Final dissertation in applied acoustics: "Mounting of a binaural measurement chain"

2007-2011 PhD in applied acoustics

University of Bologna, Italy

Thesis Title: "The effective duration of the autocorrelation function of a sound signal: calculation methods, relationship with cognitive models and relevance on the subjective preference theory"

2008-2009 Postgraduate course: Acoustic expert

University of Bologna, Italy

200 hours, Final exam January 20th, 2010

2011 Summer school of EAA, Ljubljana (Slovenia)

Acoustics

9-13.7.2012 V Summer School of Technical Physics, Benevento

Acoustics and light techniques

2013 Winter school of AIA/DEGA, Meran (Italy)

Acoustics

CERTIFICATIONS (ITALIAN)

2008 Professional Practice Exam: Engineer

Elenco Nazionale TECnici Competenti in Acustica (ENTECA)

- 2012-2018 TCAA, Prot. 119674 of 25/07/2012 Prov. BO
- 2018 TCA, Numero Iscrizione ENTECA 5915

2021 Abilitazione II Fascia (Professore Associato), ASN Settore Concorsuale 09/C2

Valida dal 01/06/2021 al 01/06/2030

MEMBERSHIP**Audio Engineer Society**

2007–2018 Member

from 2018 Full Member

2018–2020 Member of the board of Governor – Italian Section

Acoustical Society of America (ASA)

from 2022 Associate member

Acoustical Society of Italy (AIA)

from 2022 Associate member

ACTIVITY IN STANDARDISATION BODIES**2023–today ISO (International Organization for Standardization)**

Expert member of Acoustic Committee, WG 34 "Open-plan offices"

2012–today UNI (Italian National Standardisation Body)

Expert member of Committee on Acoustics and Vibration, CT002/SC01/GL07 "Acoustic quality in closed spaces"

UNI 11532:2014 "Acustica in edilizia – Caratteristiche acustiche interne di ambienti confinati" (Acoustic quality in closed spaces)

UNI 11532–1:2018 "Caratteristiche acustiche interne di ambienti confinati – Metodi di progettazione e tecniche di valutazione – Parte 1: Requisiti generali" (Acoustic quality in closed spaces - part 1: design methods and analysis techniques)

UNI 11532–2:2020 "Caratteristiche acustiche interne di ambienti confinati – Metodi di progettazione e tecniche di valutazione – Parte 2: Settore scolastico" (Acoustic quality in closed spaces - part 1: classroom)

AWARDS**2022 Best poster**

The Acoustics of Ancient Theatres - Intl. Symposium, Verona, Italy

G. Fratoni, D. D'Orazio, M. Ducceschi, M. Garai: "The coupled rooms of Odeo Cornaro (1534) as support for Renaissance musicians and soloists"

2013 Best Paper6th Intl. Symposium on Temporal Design, Taipei, Taiwan

De Cesaris, S., D. D'Orazio, and Garai, M., "Spatial distribution of monaural normal descriptors in historical Italian theatres"

2013 Barducci Prize for research project

Granted by Italian Acoustics Association

2012 Sacerdote Prize of Best PhD Thesis in Acoustics

Granted by Italian Acoustics Association

2009 Best Paper

4th Intl. Symposium on Temporal Design, Kumamoto, Japan

D. D'Orazio, M. Garai: "Some considerations about the integration of r-ACF"

EDITORIAL ACTIVITIES

Member of editorial board

2021-2023 Italian Journal of Acoustics (RIA)

2019-2021 Acoustics

Guest editor

2023 Applied Acoustics, Special Issue on Room Acoustic Topic at FA2023

2018 Journal of Temporal Design, vol. 14

2017 Italian Journal of Acoustics (RIA), vol. 41(4): Performance Spaces In Italy 2000-2017 (Special Issue).

Reviewer

Scientific Data (Nature), Building and Environment, Journal of Acoustical Society of America, Applied Acoustics, Journal of Building and Performance Simulation, Acoustics Today, Building Acoustics, Acta Acustica, MethodX, Applied Sciences, Acoustics, Materials, Rivista Italiana di Acustica (Italian Journal of Acoustics).

ACTIVITIES AS ORGANISER AND CHAIR

International

2023 Topic Organizer "Room Acoustics" at Forum Acusticum, Torino, Italy. With Ingo Witew and Francesco Martellotta

2023 Session Organizer "Noise in restaurants and canteens" at Forum Acusticum, Torino, Italy. With Pasquale Bottalico

2022 Session organiser at Intl. Congress of Acoustics (ICA), Oct 24–28, 2022, Gyeongju. Session: "General Room Acoustics". With Louena Shtrepi

2022 Session organiser, chairman and scientific committee member at Acoustics of Ancient Theatres, Verona, Italy. Session: "Sound amplification of large outdoor spaces".

2019 Session organiser, chairman and scientific committee member at Intl. Symposium on Room Acoustics (ISRA), Sept 15–17, 2019, Amsterdam, NL. Session: "Room acoustic simulations as a tool for performance-based design". With Louena Shtrepi

2018 Session organizer and chairman at Euronoise, May 2018, Hersonissos, Greece. Session: "Recent trends in numerical modelling in performance spaces: protocols and reliability". With Brian Hamilton

2017 General Co-chair of 8th Intl. Symposium on Temporal Design ISTD, September 2017, Italy.

2010 Member of the scientific committee of 2o Congreso Internacional de Acustica UNTREF, Buenos Aires, September 2010

2009 Session chairman at 4th Intl. Symposium on Temporal Design, November 2009, Kumamoto (Japan), session "Audition and Vision"

National

2023 Session chairman at 49th National Congress of Italian Association of Acoustics (AIA), Ferrara. Session: "Acustica degli uffici open-space" (Open-plan offices acoustics).

2022 Session chairman at 48th National Congress of Italian Association of Acoustics (AIA), Matera. Session: "Acustica Architettonica" (Architectural Acoustics).

2021 Member of the scientific committee of 47th National Congress of Italian Association of Acoustics (AIA)

- 2019 Session chairman at 46th National Congress of Italian Association of Acoustics (AIA), Pesaro. Session: "Acustica Architettonica" (Architectural Acoustics).
- 2018 Member of the scientific committee of dBA 2018 "I rischi fisici nei luoghi di lavoro" (Health protection in workspaces), Bologna, Italy.
- 2011 Member of the organising committee of 37th National Congress of Italian Association of Acoustics (AIA), May 2011, Rimini, Italy.

INVITED LECTURER/PRESENTER

Talks/Seminars (International)

- 21.4.2022 A day of Voice at University of Illinois, Champaign (IL, USA - online)
"Auralization of soprano voice recordings performed in anechoic condition"
- 10.4.2019 Music Informatics, Cognition and Acoustics Seminars (MuSICA), University of Edinburgh (UK)
"Measuring Room Impulse Responses in Noisy Environments"
- 14.9.2016 Jornadas do sonido, Universidad N. de Tres de Febrero, Buenos Aires (Argentina)
"Recordings of anechoic opera orchestra, soloists and choir"
- 13.12.2012 5th Intl. Seminar Multimedia technologies, Nova Gorica (Slovenia)
"The Acoustics of Emilia Romagna historic theatres"
"The use of Matlab in acoustics"

Invited presenter at International Conferences

- 10-15.09.2023 Forum Acusticum, Torino
"bla bla"
- 24-28.10.2022 24th Intl. Congress of Acoustics (ICA), Gyeongju (South Korea)
"The Loggia Cornaro (1524) as a bridge between the ancient and the modern theatre"
"The coupled rooms of Odeo Cornaro (1534) as support for Renaissance musicians and soloists"
- 6-8.6.2022 The Acoustics of Ancient Theatres, Verona (Italy)
"The Loggia Cornaro (1524) as a bridge between the ancient and the modern theatre"
- 25-27.10.2021 Euronoise 2021, Madeira (Portugal - online)
"Tagging noise sources in offices through Machine- Learning techniques"
"Student activity and speech levels before and after acoustic enhancement and PA redesign"
- 10.12.2020 Forum Acusticum 2020 Lyon (France - online)
"Improving the acoustic quality of a food court by using rate spatial decay"
- 10.12.2019 178th Meeting of Acoustical Society of America, San Diego (CA, USA)
"Overhead stage canopies in a coupled volume theatre: Effects on the sound energy distribution and on the secondary reverberation"
- September 2019 23rd Intl. Congress of Acoustics (ICA 2019), Aachen (Germany)
"Some notes about low frequency measurements in a reverberation room"
"A statistical analysis of noise sources in open plan offices"
"Signal-to-noise ratio in university lecture halls with low intelligibility"
"Virtual restitution of the original design of Pisa Baptistery"
"Numerical simulations of Italian opera houses: calibration and strategies"
"The new Italian standard UNI 11532 on acoustics for schools"
- September 2019 IAQVEC 2019, Bari
"Measuring and identifying background noises in offices during work hours"
- 29.6.2017 Acoustics '17, Boston (MA, USA)
"A loudspeaker orchestra for opera houses studies"

- 15.6.2014 22th Intl. Congress of Sound and Vibrations, Florence
"Objective musician's criteria in Italian historical Theatres"
- 18.8.2012 Internoise 2012, New York City (NY, USA)
"Measuring reverberation time using preprocessed energy detection"

Talks/Seminars (National)

- 6.5.2020 Master Edifici di Culto - Università la Sapienza Roma (Virtual)
"Qualità acustica di una chiesa in XLAM"
- 17.2.2019 Koinè, Stati generali per l'edilizia di culto, Vicenza
"Comfort acustico all'interno di uno spazio sacro progettato in XLAM"
- 16.10.2018 dBA 2018 "I Rischi Fisici nei luoghi di lavoro", Bologna
"Il comfort acustico degli uffici open plan"
- 25.6.2018 Cantiere aperto per gli architetti, Viareggio
"Intelligibilità del parlato in un'aula liturgica in CLT"
- 17.9.2017 Aria Casa, Fano
"L'acustica e l'intelligibilità del parlato"
- 15.07.2012 Sacerdote Prize Lecture, 39th National Congress of AIA, Rome
"The effective duration of the autocorrelation function of a sound signal".

OTHER ATTENDED CONFERENCES

International

- 2016 Intl. Symposium of Musical and Room Acoustics (ISMRA 2016), La Plata (Argentina)
- 2016 22nd Intl. Congress on Acoustics (ICA 2016), Buenos Aires (Argentina)
- 2016 140th Audio Engineering Society Convention, Paris (France)
- 2013 6th Intl. Symposium on Temporal Design, Taipei (Taiwan)
- 2011 8th Intl. Conference on Auditorium Acoustics, Dublin (Ireland)
- 2009 4th Intl. Symposium on Temporal Design, Kumamoto (Japan)
- 2009 126th Audio Engineering Society Convention, München (Germany)

National

- 2023 49th National Congress of Italian Association of Acoustics (AIA), Ferrara
- 2022 48th National Congress of Italian Association of Acoustics (AIA), Matera
- 2019 46th National Congress of Italian Association of Acoustics (AIA), Pesaro
- 2016 The future of churches, Bologna
- 2016 43th National Congress of Italian Association of Acoustics (AIA), Alghero
- 2014 41th National Congress of Italian Association of Acoustics (AIA), Pisa
- 2013 40th National Congress of Italian Association of Acoustics (AIA) joint with DAGA 2013, Merano
- 2012 39th National Congress of Italian Association of Acoustics (AIA), Rome
- 2011 38th National Congress of Italian Association of Acoustics (AIA), Rimini
- 2010 37th National Congress of Italian Association of Acoustics (AIA), Syracuse
- 2009 36th National Congress of Italian Association of Acoustics (AIA), Turin
- 2008 35th National Congress of Italian Association of Acoustics (AIA), Milan

TEACHING ACTIVITIES AT UNIVERSITY OF BOLOGNA

Docente (Lecturer)

2016/2017	Architettura LM - ILLUMINOTECNICA E ACUSTICA - 30 hours
2021/2022	Ingegneria Meccanica LM - ACUSTICA DEL VEICOLO M - 60 hours
2022/2023	Tecniche per l'edilizia e il territorio LP - PROVE DEI MATERIALI E DIAGNOSTICA - 30 hours
2022/2023	Ingegneria Meccanica LM - ACUSTICA DEL VEICOLO M - 60 hours
2023/2024	Tecnologie alimentari - FISICA TECNICA (MODULO 1) - 30 hours
2023/2024	Tecniche per l'edilizia e il territorio LP - PROVE DEI MATERIALI E DIAGNOSTICA - 30 hours
2023/2024	Ingegneria Meccanica LM - ACUSTICA DEL VEICOLO M - 60 hours
2023/2024	Scienze dell'alimentazione - FISICA TECNICA - 30 hours

Contratto su attività di supporto alla didattica (Teaching Assistant)

2018/2019	INGEGNERIA EDILE - FISICA TECNICA E IMPIANTI T cod. 31003 - 30 hours
2018/2019	INGEGNERIA EDILE - FISICA TECNICA E IMPIANTI T cod. 31003 - 30 hours
2019/2020	INGEGNERIA EDILE - FISICA TECNICA E IMPIANTI T cod. 31003 - 30 hours
2020/2021	INGEGNERIA EDILE - FISICA TECNICA E IMPIANTI T cod. 31003 - 30 hours
2020/2021	INGEGNERIA MECCANICA - ACUSTICA DEL VEICOLO M - 40 hours

THESIS SUPERVISOR, CO-SUPERVISOR, ADVISOR

If not otherwise specified, all Theses have been discussed at University of Bologna

PhD Supervisor and Co-supervisor

2021	Giulia Fratoni, Wave-based acoustic simulations: standardisation of procedures and calculation models - Co-supervisor
2023	Domenico de Salvio, Advanced statistical models for the segregation, identification and measurements of coexisting sound sources - Co-supervisor
Expected in 2024	Matteo Cingolani, Application of acoustic metamaterials in biomedical and audio fields - Co-supervisor
expected in 2026	Virginia Tardini - Supervisor

MSc Supervisor

2023	Andrea Zaccarini, "Acoustic performance of innovative materials: low-frequency behaviour of reverberation room for ISO-354 measurements", Mechanical Engineering MS
2023	Simone D'Auria, "Development of Acoustic Metamaterial for noise mitigation in ducts: prototype, testing and optimisation"
2023	Virginia Tardini: "The role of suspended ceilings in features WELL verifications and ISO 22955:2021 requirements", Civil Engineering
2023	Rachele Billi: "Development of Acoustic Metamaterial for noise mitigation in ducts: scenario, framing and set-up", Mechanical Engineering
expected in 2024	Fiorella Falciano

MSc Co-supervisor or Advisor

2007/2008	Silvia Calamante
2008/2009	Michela Guizzardi, Simona De Cesaris
2010/2011	Laura Melis (Post-graduation Master), Laura Reggiani
2011/2012	Maria Davoli, Federica Morandi
2012/2013	Davide Spada, Valentina Sartini
2013/2014	Lisa Loreti, Andrea Muciaccia (University of Rome "La Sapienza"), Stefania Bruni, Alessandra Poli, Marta Barbiani, Francesco Ciani
2014/2015	Lidia Guerra, Alessandra Tovo, Claudia Genestreti, Carlotta Mirri

2015/2016	Marco Bartolini, Giulia Bruschi, Valentina Silingardi (University of Padua), Fabio Sgarzi, Marco Rinaldi
2016/2017	Alice Gaddi, Giulia Fratoni, Anna Rovigatti, Alessia Frescura
2017/2018	Federico Santangelo, Elena Rossi
2018/2019	Domenico De Salvio, Giulia Fanin, Giovanni Tombesi
2019/2020	Matteo Cingolani, Gioia Cardinali, Federico Montoschi
2020/2021	Michele Santovito, Francesca Monti
2021/2022	Vincenzo Pettoni Possenti
2022/23	Alessia Nora
expected in 2024	Xiyu Li (University of Illinois), Yoonjee Sim (University of Illinois)

PERSONAL SKILLS

Mother tongue Italian

Other languages

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	C1	B2	B2	B2
French	B2	B2	B2	B2	B1

Levels: A1 and A2: Basic user – B1 and B2: Independent user – C1 and C2: Proficient user
[Common European Framework of Reference for Languages](#)

Computer skills

- Matlab/Scilab/Octave
- Acoustic simulation: Odeon, EASE suite, Soundplan
- Lighting simulation: DIALux, DIALux Evo
- Experienced with HTML/XML, C, C++

Musical skills

Collaborates with several Orchestras (LaCorelli, Orchestra Senzaspine, Fontanamix Ensemble, Collegium Musicum Almae Matris).
 Performs live recordings (<https://soundcloud.com/acousticsbo>).
 Plays Fender Rhodes, CP70 and synthesizers.

JOURNAL PAPERS (SELECTION)

- 2023 YG Redman, JD Glasner, **D D'Orazio**, P Bottalico, Singing in different performance spaces: The effect of room acoustics on singers' perception, J. Acoust. Soc. Am. 154(4), 2256-2264
- 2023 M Cingolani, D De Salvio, **D D'Orazio**, M Garai, Clustering analysis of noise sources in health-care facilities, Applied Acoustics 214, 109660
- 2023 D De Salvio, MJ Bianco, P Gerstoft, **D D'Orazio**, M Garai, Blind source separation by long-term monitoring: A variational autoencoder to validate the clustering analysis, J. Acoust. Soc. Am. 153(1), 738; <https://doi.org/10.1121/10.0016887>
- 2022 G Fratoni, B Hamilton, **D D'Orazio**, Feasibility of a finite-difference time-domain model in large-scale acoustic simulations, J. Acoust. Soc. Am. 152, 330; <https://doi.org/10.1121/10.0012218>
- 2022 D De Salvio, **D D'Orazio**, Effectiveness of acoustic treatments and PA redesign by means of student activity and speech levels, Applied Acoustics 194, 108783, <https://doi.org/10.1016/j.apacoust.2022.108783>
- 2021 D De Salvio, **D D'Orazio**, M Garai, Unsupervised analysis of background noise sources in active offices, J. Acoust. Soc. Am., 149 (6), 4049-4060,
- 2020 **D D'Orazio**, G Fratoni, M Garai, Enhancing the strength of symphonic orchestra in an opera house, Applied Acoustics 170, 107532
- 2020 **D D'Orazio**, D De Salvio, L Anderlucci, M Garai, Measuring the speech level and the student activity in lecture halls: Visual-vs blind-segmentation methods, Applied Acoustics 169, 107448
- 2020 **D D'Orazio**, Italian-Style Opera Houses: A Historical Review, Applied Sciences 10 (13), 4613
- 2020 **D D'Orazio**, F Montoschi, M Garai, Acoustic comfort in highly attended museums: A dynamical model, Build. Environ. 183, 107176

- 2020 **D D'Orazio**, G Fratoni, E Rossi, M Garai. Understanding the acoustics of St. John's Baptistery in Pisa through a virtual approach, *Journal of Building Performance Simulation* 13 (3), 320-333
- 2020 **D D'Orazio**. Anechoic recordings of Italian opera played by orchestra, choir, and soloists, *J. Acoust. Soc. Am.*, 147 (2), EL157-EL163
- 2020 **D D'Orazio**, G Fratoni, A Rovigatti, M Garai. A virtual orchestra to qualify the acoustics of historical opera houses *Building Acoustics* 27 (3), 235-252
- 2020 Scrosati, C., Martellotta, F., Pompoli, F., Schiavi, A., Prato, A., **D'Orazio, D.**, Garai, M., Granzotto, N., Di Bella, A., Scamoni, F., Depalma, M., Marescotti, C., Serpilli, F., Lori, V., Nataletti, P., Annesi, D., Moschetto, A., Baruffa, R., De Napoli, G., D'Angelo, F., Di Filippo, S. Towards more reliable measurements of sound absorption coefficient in reverberation rooms: An Inter-Laboratory Test, *Applied Acoustics*, 165, art. no. 107298
- 2019 **D. D'Orazio**, A. Rovigatti, and M. Garai, The Proscenium of Opera Houses as a Disappeared Intangible Heritage: A Virtual Reconstruction of the 1840s Original Design of the Alighieri Theatre in Ravenna, *Acoustics* 1(3), 694–710
- 2019 **D. D'Orazio**, S Nannini, Towards Italian Opera Houses: A Review of Acoustic Design in Pre-Sabine Scholars, *Acoustics* 1(1), 252–280
- 2018 **D. D'Orazio**, S. De Cesaris, F. Morandi, M. Garai. The aesthetics of the Bayreuth Festspielhaus explained by means of acoustic measurements and simulations, *Journal of Cultural Heritage*, 34, 151–158
- 2018 C. Biserni, P. Valdiserri, **D. D'Orazio**, M. Garai, Energy retrofitting strategies and economic assessments: The case study of a residential complex using utility bills, *Energies* 11(8), 2055
- 2018 **D. D'Orazio**, E. Rossi, M. Garai, In situ measurements of intelligibility in an open plan office, *Building Acoustics*, 2018, 25(2) 111–122
- 2019 G. Fratoni, **D. D'Orazio**, L. Barbaresi, Acoustic comfort in a worship space made of cross-laminated timber, *Building Acoustics*, 2019, 26(2) 121–138, <https://doi.org/10.1177/1351010X19826250>
- 2015 S. De Cesaris, **D. D'Orazio**, F. Morandi, M. Garai. Extraction of the envelope from impulse responses using pre-processed energy detection, *J. Acoust. Soc. Am.*, 138, 2513
- 2015 M. Garai, F. Morandi, **D. D'Orazio**, S. De Cesaris, L. Loreti. Acoustic measurements in eleven Italian opera houses: Correlations between room criteria and considerations on the local evolution of a typology, *Build. Environ.*, 94(2), 2015, 900–912
- 2011 **D. D'Orazio**, S. De Cesaris, M. Garai. A comparison of methods to compute the effective duration of the autocorrelation function and an alternative proposal, *J. Acoust. Soc. Am.*, 130(4), 1954–1961.

OTHER PUBLICATIONS AND PROCEEDINGS

- 2022 G Fratoni, **D D'Orazio**, L Barbaresi, M Garai, L Cappellini, Mixing materials in false ceilings to increase sound diffusion in education spaces, *Internoise 2022*, Glasgow (UK)
- 2022 2022 proceedings should be updated
- 2021 **D D'Orazio**, D De Salvio, M Garai, Tagging noise sources in offices through Machine- Learning techniques, *Eurnoise*, Madeira - online.
- 2021 D De Salvio, **D D'Orazio**, M Garai, Student activity and speech levels before and after acoustic enhancement and PA redesign, *Eurnoise*, Madeira - online.
- 2020 G Fratoni; **D D'Orazio**; E Rossi; A Rovigatti, Some Considerations on Sound Propagation in a Cylindrical Worship Space, in: *Forum Acusticum*, Dec 2020, 2020, pp. 1905 - 1906 (atti di: Forum Acusticum, Lyon - online
- 2019 B. Hamilton; M. Newton; G. Fratoni; **D. D'Orazio**, On the Acoustics of St Cecilia's Hall: Measurements and Comparison of Wave-based and Geometrical Acoustics Modelling, in: *International Symposium on Room Acoustics 2019*, 2019, pp. 289 - 289
- 2019 **D'Orazio D**, De Salvio D., Anderlucci L., Garai M., Signal-to-noise ratio in university lecture halls with low intelligibility, *23rd Intl. Congress of Acoustics (ICA 2019)*, Aachen (Germany)
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Bologna, February 23, 2024

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Bologna, February 23, 2024