



**CURRICULUM
VITAE et STUDIORUM
OF
Antonina Pirrotta**

Department of Engineering (DI)
University of Palermo,
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PERSONAL DATA

born the 23/09/1963 in Palermo (Italy).

DEGREES RECEIVED AND DATES

- Post-Doc position may 1998 - May 2000, with grade 100/100.
- Ph.D. in Structural Engineering October 1996.
Thesis: "*Indagine teorico-sperimentale di strutture con dispositivi ad attrito sotto azioni dinamiche*".
Prof. M. Di Paola, Reviewer Prof. R. A. Ibrahim.
- Admitted to the profession of engineer (Id:4202) in February 1988.
- Degree in Civil Engineering with grade 110/110 with honors and honorable mention: Engineering Faculty of Palermo, 16 July 1987.
Thesis: "*Un approccio alternativo per la valutazione della risposta di sistemi non lineari soggetti a forzanti aleatorie*".
- Scientific High School DIPLOMA 1980/81 Institute "G. Galilei" Palermo, with grade 60/60.

RESEARCH INTERESTS

- Structural dynamics :Theoretical and experimental analysis of structures equipped with vibration control devices
- Nonlinear system analysis
- Damage identification
- Stochastic dynamics
- Fractional calculus
- Rocking phenomena
- Structural health monitoring of historical heritage
- Vibration induced on human being

ACADEMIC CAREER

- FULL PROFESSOR from 1 October 2016, in Structural Mechanics Engineering Faculty of Palermo.
- ASSOCIATE PROFESSOR from 1 November 2001, in Structural Mechanics Engineering Faculty of Palermo
- RESEARCHER 16 July 2000, in Structural Mechanics Engineering Faculty of Palermo.

• INSTITUTIONAL RESPONSIBILITIES

- Head of PhD School of University of Palermo, from 2023.
- Member of the University of Palermo's Scientific Council - 2023-2026.
- Head of CIDIS (Centro Interuniversitario di Dinamica Strutturale Teorica e Sperimentale) (2021-2025).
- Vice-Head of the Engineering Department from 2019-2021.
- Member of the University of Palermo's Scientific Council - 2019-2022.
- Ph.D. Coordinator (2017-2023).
- REFERENT for UNIPA of H2CU Honors Center of Italian Universities (2017).

• EDITORIAL ACTIVITY

- - Guest Editor for a Special Issue of the International Journal of Nonlinear Mechanics, 2024.
- - Guest Editor for a Special Issue of the International Journal of Probabilistic engineering Mechanics, 2024.
- - Guest Editor for a Special Issue of the International Journal of Probabilistic engineering Mechanics, 2022.
- - Guest Editor for a Special Issue of the International Journal of Acta Mechanica 2022.
- - Guest Editor for a Special Issue of the International Journal of Acta Mechanica 2021.
- - Guest Editor for a Special Issue of the International Journal of Probabilistic engineering Mechanics, 2021.
- - Guest Editor for a Special Issue of the International Journal of Meccanica 5/2018.
- - Guest Editor for a Special Issue of the International Journal of Probabilistic Engineering Mechanics 10/2017.
- - Section Editor for Springer's "Encyclopedia of Earthquake Engineering"- Section: Random Vibration (2013).
- - Guest Editor for a Special Issue of the International Journal of Probabilistic Engineering Mechanics 10/2012 10/2013.

PARTICIPATION IN EDITORIAL BOARDS

- **Associate Editor of Frontiers in Materials (from 2022)**
- **-Section Founding Editor** "*Vibration, dynamical systems and control engineering* " *BMC Mechanical Engineering (Springer Nature)* from 2018.
- **- Associate Editor Meccanica** (from 2018) ,(Q1, ISI).

- - **Associate Editor** *Journal of Engineering Mechanics (ASCE)* (from 2015) , (Q1, ISI journal).
- - **Associate Editor** of *Frontiers in Mechanics of Materials* (from 2018).
- - Editorial Board Member of *Research and Development in Material Science Journal* (from 2017).
- - Editorial Board Member of *The Open Construction & Building Technology Journal* (from 2017).
- - Editorial Board Member of *Journal of Applied and Computational Mechanics* (2015-2017).
- - Editorial Board Member of *Shock and Vibration* (from 2015), (Q2 ISI j).
- - Editorial Board Member of *Mathematical Problems in Engineering* (from 2014) , (Q2 ISI j).
- - Editorial Board Member of *International Journal of Mechanical Engineering and Applications* (from 2013).
- - Editorial Board Member of *International Journal of Statistical Mechanics* (from 2013)
- - Editorial Board Member of *Acta Mechanica* (from 2013) , (Q1, ISI journal).
- - Editorial Board Member of *Probabilistic Engineering Mechanics* (from 2000), (Q1, ISI journal).

Reviewer activity for:

- Acta Mechanica
- Applied Mathematical Modelling
- Chaos, Solitons & Fractals
- Communications in Nonlinear Science and Numerical Simulation
- Int. J. Non-linear Mechanics
- International Journal of Mechanical Sciences
- Journal of Engineering Mechanics (ASCE)
- Nonlinear Analysis Series B: Real World Applications
- Nonlinear Dynamics
- Philosophical Transactions A
- PHYSICA A
- Probabilistic Engineering Mechanics
- Structural Control and Health Monitoring
- External Reviewer of: The Portuguese Foundation for Science and Technology FCT), (2012).
- Peer reviewer: Research Projects, VQR 2004-2010.

SCIENTIFIC RECOGNITIONS

- Fellow ASCE from 2024.
- Board of Governors of ASCE (EMI) 2021-2024 (selected every year)
- Co-Chair for Mentoring & Early Career Advancement Committee 2023 (EMI)
- Scientific Committee Member International Conference on Vibration Engineering (ICVE) 2025
- Scientific Committee Member of EWSHM (European Workshop on Structural Health Monitoring) from 2024.

- Scientific Committee Member of ISRERM 2024
- Scientific Committee Member of **ASCE-ICVRAM-ISUMA 2024**
- Scientific Committee Member of ICoNSoM 2022
- Scientific Committee Member of AIMETA 2022
- International Scientific Committee of the **8th International Symposium on Reliability Engineering and Risk Management (ISRERM) 2022.**
- **Chair of IDEA Innovative Dynamics Experiments Association from 2021**
- Member of **FCT Panel: The Fundação para a Ciência e a Tecnologia, I. P. (FCT) - the Portuguese public funding (2021)**
- Member of: **ASCE-ICVRAM-ISUMA** International Scientific Committee, China, Shanghai, Tongji.
- Member of: EMI 2024 IC International Scientific Committee, Vienna, Austria.
- Member of: ICOSSAR2021-2022 International Scientific Committee, China, Shanghai, Tongji
- Member of: EMI 2020 International Scientific Committee, New York, Columbia University.
- Member of: Reliable Engineering Computing REC 2020 International Scientific Committee, Italy.
- Member of: "EMI Dynamics committee member", (2019).
- Member of: Advisory Board of the MSCA (Marie Skłodowska-Curie) COFUND Doctoral Programm (Innsbruck university) 2019
- Selected by the Program of Top Foreign Experts Visiting of the First-level Discipline Development Fund of College of Civil Engineering, Tongji University (2018).
- Chair of Stochastic Mechanics Group of AIMETA (2016).
- Associate ASME Member ID#: 000100375744, (from 2012).
- Associate ASCE member ID# 9368698, (2014-2023).
- ASCE member ID# 9368698, (from 2023).
- Member of: "EMI probabilistic methods committee member", (2012).

FELLOWSHIPS

- American Society of Civil Engineers ASCE **Fellow** from 2024, (**First Italian Woman Professor with Italian affiliation**).
- **Fellowship (2020-2024)** University of Liege, Belgium, (**selected every year**).
- International Excellence **Fellowship** of Karlsruhe Institute of Technology (KIT), funded within the Framework of the University of Excellence Concept, "The Research University in the Helmholtz Association I Living the Change" (2021).
- Engineering Mechanics Institute EMI **Fellow** from 2020, 12 (**First Italian Professor with Italian affiliation**).
- HONORARY RESEARCH **FELLOW** in the Department of Mathematical Sciences of University of Liverpool, (2014-2019).

AWARDS

- The Aftab Mufti Medal Best Paper Award. A. Di Matteo, D. Fiandaca, A. Pirrotta; "Smartphone-based bridge monitoring through vehicle-bridge interaction: analysis and experimental assessment" Journal of Civil Structural Health Monitoring (2022) 12:1329–1342; in SHMII'13 Conference, September 1 to 5, 2025 in Graz, Austria.
- Selected by the Program of High- end Foreign Experts Visiting of College of Civil Engineering, Tongji University (2025).
- Global WIIN (Global Women Inventors & Innovators Network) Exemplary Special Recognition Award October 2024, for tenacity and Innovative Achievements.

- 2024 Certificate of Appreciation for dedication and service as a Member of the Board of Governors of the Engineering Mechanics Institute 2021-2024.
- 2023 ITWIIN (Italian Association of Women Inventors and Innovators) the Higher Education Award for the notable commitment to higher education activities, in the national and international academic context, and for having shown a high capacity for disseminating scientific knowledge in dissemination and collaboration initiatives.
- Appreciation award for outstanding service and dedication as Chair of the EMI2023 International Conference at the University of Palermo, Italy August 27-30, 2023
- Best Paper Award 2022, C. Masnata, A. Di Matteo, C. Adam, A. Pirrotta; Assessment of the Tuned Mass Damper Inerter for seismic response control of base-isolated structures, Structural Control and Health Monitoring, 28(2): e2665 (2021). Engineering Department, Università degli Studi di Palermo.
- Editor's Choice section of Journal of Engineering Mechanics (ASCE): A. Pirrotta, I. A. Kougoumtzoglou, A. Di Matteo, V. C. Fragkoulis, A. A. Pantelous, C. Adam (2021) "Deterministic and random vibration of linear systems with singular parameter matrices and fractional derivative terms, Journal of Engineering Mechanics, 147, 04021031.
- Selected by International Excellence Fellowship of Karlsruhe Institute of Technology (KIT), funded within the Framework of the University of Excellence Concept, "The Research University in the Helmholtz Association I Living the Change" (2021).
- 2020 First EASD SENIOR RESEARCH **PRIZE** in the area of DEVELOPMENT OF METHODOLOGIES FOR STRUCTURAL DYNAMICS, for her important contributions in the fields of passive control, multi-body systems, continuum mechanics, stochastic mechanics, **health monitoring**.
- 2020 Research **Prize** "Francesco Carbone Experimenta", for her important research results.
- Best Paper Award, "Di Matteo A., Masnata C., Pirrotta A., (2019), Simplified analytical solution for the optimal design of Tuned Mass Damper Inerter for base isolated structures, Mechanical Systems and Signal Processing, 134, 106337", Engineering Department, Università di Palermo.
- GADeS Prize 2018, from AIMETA (GADeS) for the best PhD Thesis: Structural vibration control through Tuned Liquid Column Dampers: theoretical and experimental analysis : Tutor Antonina Pirrotta, PhD Student Alberto di Matteo.
- Selected by the Program of Top Foreign Experts Visiting of the First-level Discipline Development Fund of College of Civil Engineering, Tongji University (2018).

INVITED LECTURES

1. Plenary Lecture at the 9th International Conference on Vibration Engineering (ICVE2025), October 24-26, 2025, in Nanjing, China.
2. Plenary Lecture at International Workshop on Global Reliability of Engineering Structures and Systems (GRESS) Oct. 22-24, 2025, Wuhan, China.
3. Invited Lecture at ICAI "International Conference on Artificial Intelligence and Information" Xidian University on 27th-30th, September, 2025 China.
4. Semi-Plenary Lecture at 19 th ICOSAR 2025, 1-6 June, Los Angeles, USA.
5. Invited Lecture at Euromech 2024 - 642 – International Colloquium on Multiscale and Multiphysics Modelling for Advanced and Sustainable Materials, Italy, Sept 23-27, University of Rome La Sapienza.
6. Keynote Lecture at EVACES 2023, 10th International Conference on Experimental Vibration Analysis for Civil Engineering Structures, Politecnico di Milano, Italy, August 30-Sept 1
7. Invited lecture: Mitigazione delle vibrazioni indotte dal sisma, Maggio4, 2023, Palermo, Protezione Civile.

8. Plenary Zhu Wei-Qiu Lecture at 13th China National Conference on Theory and Application of Random Vibration, March 24-26, 2023, Dalian, China.
9. Invited lecture: L'utilizzo della dinamica sperimentale per la diagnostica e il monitoraggio delle strutture, 5 December 2022 Webinar Consiglio Nazionale degli ingegneri.
10. Invited Lecture at 2022 International Workshop on Multiscale Innovative Materials and Structures, Cetara, September 29-October 1.
11. World Day of Women in Science: Video Conference, 11 Feb 2021 (University of Palermo)
12. Keynote lecturer at the 15th international conference in Dynamical Systems Theory and Applications, December 2-5, 2019 Lodz, Poland
13. Keynote lecturer at the 23rd CMM 2019 in Computer Methods in Mechanics Conference, September 08-12, 2019 Krakow, Poland.
14. Invited Lecture, 9th ICCM 2018 in Computational Mechanics Conference, August 06-10, 2018 Rome, Italy.
15. Invited Lecture, International Conference on Structural Nonlinear Dynamics and Diagnosis, Tangier, June 25-27, 2018.
16. Invited Lecture, 9th World Congress on Materials Science and Engineering, June 12-14 2017, Rome, Italy.
17. Invited Lecture, ASCE-ICVRAMASCE-ICVRAM-ISUMA 2014, 13-16 July, Liverpool.
18. Invited Lecture, International Conference on Stochastic Methods in Mechanics: Status and Challenges Warsaw, September 28-30, 2009 "Probabilistic response of nonlinear systems via PI: normal, Poissonian and combined white noises".
19. Invited Lecture, Convegno Tecnico Scientifico: Edifici esistenti: vulnerabilità ed adeguamento, 22 Giugno 2009, Ragusa: 'Tecniche innovative per la mitigazione del rischio sismico'.
20. Invited Lecture, International Symposium on Vibro-Impact Dynamics of Ocean Systems and Related Problems October 2-3, 2008 Somerset Inn, Troy, Michigan : "Ship roll motion under stochastic agencies handled by Path Integral (PIS)".

PERIODS ABROAD

Visiting Professor at **Tongji University , Shanghai**, (China) (Prof. J.B. Chen) (19 October–5 November 2026).

Visiting Professor at **University of Innsbruck** (Professor Christoph Adam (21-24 March 2024).

Visiting Professor (International Excellent Fellowship) at Karlsruhe University , Germany, (Prof.C. Proppe) (30 June 2021 –22 August 2021).

Visiting Professor at **Tongji University , Shanghai**, (China) (Prof. J.B. Chen) (1 –16 November 2018).

Visiting Professor at **Tufts University, Boston** (USA) (Prof. Babak Moaveni) (27 – May-3 June 2018).

Visiting Professor at **Columbia University, New York** (USA) (Prof. George Deodatis) (14 - 18 July 2017).

Visiting Professor (UCSD) **University of San Diego** (USA), (Prof. Francesco Lanza Di Scalea) (4 - 9 June 2017).

Visiting Professor at **Liverpool University** (Prof. Thanasi Pantelous (22-27 November 2016)).

Visiting Professor at **City University of London** (Prof. Agathoklis Giaralis (18-22 November 2016)).

Visiting Professor at **University of Innsbruck** (Professor Christoph Adam (17-22 July 2016)).

Visiting Professor at **Liverpool University** (Prof. Thanasi Pantelous (6-13 November 2015)).

Visiting Professor at **Technical University of Vienna** (Professor Rudolf Heuer)r (16-23 August 2015).

Visiting Professor at **Liverpool University** (Prof. Thanasi Pantelous (12-19 July 2014)).

Visiting Professor at **Technical University of Vienna** (Professor Rudolf Heuer) (4-11 July 2014).

Visiting Professor at **Technical University of Vienna** (Professor Rudolf Heuer) (22August-30 August 2013).

Visiting Professor at **Rice University of Houston** (USA) (Prof. Pol Spanos) (11-16 November 2012).

Visiting Professor at **Columbia University of New York** (USA) (Prof. George Deodatis) (4-10 November 2012).

Visiting Professor in **Indiana University of Fort Wayne** (USA) (Prof. Bongsu Kang) (16-25 June 2012).

Visiting Professor in **Technical University of Vienna** (Prof. Rudolf Heuer) (26Febbraio-4 Marzo2012).

Visiting Professor in **Technical University of Vienna** (Prof. Rudolf Heuer) (11-27 March2011).

Visiting Professor **Wayne State University, Detroit** (USA) (Prof. Raouf Ibrahim) (27September – 2 October 2008).

Visiting Professor Modern Textile Institute, **Dong Hua University, Shanghai**, (Prof. Ji-Huan He) (23 October – 3 November 2007).

Visiting Professor **Rice University, Houston** (USA) (Prof. Pol Spanos) (20 - 27 April 2007).

Visiting Professor **Columbia University, New York** (USA) (Prof. George Deodatis) (28 July - 6 August 2006).

Visiting Professor **Urbana-Champaign University** (USA) (Prof. Lawrence A. Bergman) (24 July - 27 July 2006).

Visiting Professor (UCSD) **University of San Diego** (USA), (Prof. Francesco Lanza Di Scalea) (8 July - 23 July 2006).

Visiting Professor in **Technical University of Vienna** (Prof. Franz Ziegler and Prof. Rudolf Heuer (27 June- 4 July 2005)).

Visiting Professor in **Technical University of Vienna** (Prof. Franz Ziegler and Prof. Rudolf Heuer (22 April- 4 May 2002)).

Technical University of Vienna with Prof. Franz Ziegler and Prof. Rudolf Heuer (Sept.-Oct. 96; April-May 97).

Wayne State University of Detroit with Prof. Raouf Ibrahim (August 94- August 95).

COURSES TAUGHT

Vibrations, University of Palermo (in English from 2020)

Engineering Mechanics, University of Palermo (from 2003)

Structural Dynamics, University of Palermo (2000-2019)

Experimental Dynamics and Monitoring, University of Palermo (2014-2017), (2025)

TEACHING ACTIVITIES AT INTERNATIONAL UNIVERSITIES

- Random Vibration Course, 2022, School of Civil Engineering, **Hefei University of Technology**, China.
- Teaching Assistant to Professor R. Heuer for the course **Baudynamisches Messen (Experimental Methods in Structural Dynamics)** 1997 **Technical University Of Vienna, Institut Für Allgemeine Mechanik**.
- Teaching Assistant to Professor N. Moshchuk for a course teaching new doctoral students: **Advanced Calculus** (ME500) May-August 1995 **Wayne State University**.
- Teaching Assistant to Professor V. Berdshviski for the course **Mechanical Vibration** (ME341) January-May 1995 **Wayne State University**.
- Teaching Assistant to Professor R. Ibrahim for the course **Dynamics** (ME340) September-December 1994 **Wayne State University**.
- Teaching Assistant to Professor R. Ibrahim for the course **Mechanical Vibration** (ME341) September-December 1994 **Wayne State University**.

LECTURES GIVEN INTERNATIONALLY TO DOCTORAL STUDENTS

- Tongji University, Shanghai, Short Course: The use of complex fractional moments for nonlinear systems, 14 November 2018.
- Tongji University, Shanghai, Short Course: The use of complex fractional moments for nonlinear systems, 14 November 2018.
- University of Liverpool, RISK 621 modules: Quantitative and qualitative methods and their use, 11 November 2015.
- Vienna TU. Stochastic and Fractional Calculus for overcoming closure scheme in the evaluation of nonlinear system statistics, Vienna TU Ph.D.Summer School on Risk and Modeling, 19 August 2015.

LECTURES GIVEN TO MASTER'S STUDENTS

- Master's (at the second level) in Biomedical, Biomechanical and Biomaterial Engineering I st edition Palermo, 2013.
- Master's (at the second level) Department of Civil Engineering, Messina, September 2011- July 2012.
- Master's (at the second level) in "Recovery, structural rehabilitation and use of historic buildings" – II nd edition 2012.

- Master's (at the second level) in "Recovery, structural rehabilitation and use of historic buildings" – I st edition 2011.
- Master's in Seismic Engineering, Messina 2004.
- Master's in Quantitative methods and operational strategies in managing financial risk, Palermo 2003.

SEMINARS GIVEN AT INTERNATIONAL UNIVERSITIES

- Innovative Monitoring through Operational Modal Analysis, for Dynamics Seminar Series Engineering Mechanics Institute, EMI, 17 April 2024 (virtual mode).
- Operational Modal Analysis: Innovative Procedure for Monitoring, **Innsbruck University**, 22-03-24
- Experimental dynamics and monitoring, Iowa State University of Science and Technology, 30-11-23, virtual mode.
- Virtual Experiments? Why and How! **Third International Excellence Talk, Karlsruhe Institute of Technology**, 22-07-21
- A Novel Mathematical Model For TLCD: Theoretical And Experimental Investigations, **Tongji University**, 12th November 2018
- Advances on Vibration Control, **Tufts University**, Boston, (USA), 29th May 2018.
- Euler-Bernoulli Beams with Fractional Damping, **Indiana University**, Fort Wayne, (USA), 21st June 2012.
- Stochastic Response of Fractionally Damped Systems; **Vienna Technical University** 23rd March 2011.
- The De Saint Venant Torsion Problem: Stress Field Evaluation through a Novel Line Elementless Method (LEM); **Johannes Kepler University, Linz**, 16th March 2011.
- The De Saint Venant Torsion Problem: Stress Field Evaluation through a Novel Line Elementless Method (LEM); lecture Series "Colloquium on novel developments in Applied Mechanics and Strength of Materials, **University of Innsbruck** 15th March 2011.
- Dynamic Systems under Impulsive Input, **Vienna Technical University**, 2nd May 2002.
- Dynamics of Base Isolated Structures, December 1994, **Wayne State University**, Detroit, by invitation of Prof. Raouf Ibrahim.

SEMINARS GIVEN AT ITALIAN UNIVERSITIES

- "Line Element-less Method (LEM) for solving Laplace equations", Facoltà di Ingegneria, Palermo 22/05/2018.
- "La struttura della cupola del Teatro Massimo di Palermo: il contemporaneo nel 1876" (The Structure of Teatro Massimo's Dome, Palermo), as part of the Decennial Celebration of the degree course in construction engineering – architecture's establishment, Facoltà di Ingegneria, Palermo 23 March 2012.
- "Il solido di De Saint-Venant sollecitato a taglio e torsione : Il metodo LEM per la determinazione dei campi di tensione e di deformazione" (The De Saint Venant Torsion Problem: Stress Field Evaluation through a Novel Line Elementless Method (LEM)); Doctoral Programme in Structural Engineering, Università di Palermo, 22nd/23rd November 2010.
- "Un nuovo metodo per l'analisi di strutture in stato piano di tensione (Line Element-less Method): il solido di De Saint-Venant a taglio e torsione" (The De Saint Venant Torsion Problem: Stress Field Evaluation through a Novel Line Elementless Method (LEM)); Doctoral Programme Università di Bologna, April 2008.
- "Tecniche di consolidamento di edifici monumentale in zona sismica" (Techniques of Structural Consolidation in Monumental Buildings); Refresher Course in Seismic Engineering "Evaluation and Reduction of Seismic Risk" at the Università degli Studi di Messina, 8th February 2002.
- "La scelta dei materiali per l'intervento di ristrutturazione di edifici in muratura" (The Selection of Materials for the Renovation of Masonry Buildings) for the Laboratory of sintesi finale N.O. and V.O. A.A. 1998/1999, Laboratory Coordinator: Prof. G. Leone of the Facoltà di Architettura, Palermo.

COORDINATION OF NATIONAL RESEARCH PROJECTS (ITALY)

1. - Principal Investigator PRIN 2022 : Innovative metamaterial components and absorbers for vibration mitigation (METAVIBRA).
2. - MULTISCALE INNOVATIVE MATERIALS AND STRUCTURES (MIMS) PRIN 2017: Coordinatore Nazionale Prof. Fernando Fraternali.
3. Identificazione del danneggiamento di strutture soggette a carichi statici e dinamici (deterministici e stocastici) PRIN 2006-2008: Coordinatore Nazionale Prof. Luigi Materazzi.
4. - Progetto EDILTECH: Prog. N. 1999/IT.16.1PO.011/3.13/7.2.4/343 Il Controllo delle Vibrazioni Strutturali, POR Sicilia 2000-2006 – FSE Asse III - Misura 3.13
5. -Problemi di identificazione strutturale mediante le trasformate di Hilbert-Huang (ex quota 60% anno 2004-2006).
6. -Identificazione del danneggiamento e monitoraggio di strutture soggette a carichi statici e dinamici (deterministici e stocastici) PRIN 2004-2006: Coordinatore Nazionale Prof. Luigi Materazzi.
7. Risposta stocastica di sistemi strutturali sollecitati da processi alpha-stabili di Lévy (ex quota 60% anno 2003).
8. Analisi dinamica deterministica ed aleatoria di sistemi strutturali in regime non lineare sollecitati da forzanti di natura impulsiva (ex quota 60% anno 2001-2002).

PARTICIPATION IN NATIONAL RESEARCH PROJECTS (ITALY)

1. Advanced Mechanical Modeling of New Materials and Structures for the Solution of 2020 Horizon Callenges, PRIN 2015. Coordinatore Nazionale Prof. Mario Di Paola, Ateneo/Ente: Università degli Studi di PALERMO.
2. -Dinamica, stabilità e controllo di strutture flessibili, PRIN 2013-16 Coordinatore scientifico: Luongo, Angelo, Responsabile scientifico: DI PAOLA Mario, Ateneo/Ente: Università degli Studi di PALERMO.
3. Un approccio fisico alla viscoelasticità non-locale ed al cambiamento di fase: Applicazioni alla meccanica della frattura, (PRIN 2008), Coordinatore scientifico: CARPINTERI Alberto, Responsabile scientifico: DI PAOLA Mario, Ateneo/Ente: Università degli Studi di PALERMO, Protocollo:2008SE9TBA_002.
4. Tecniche innovative per la salvaguardia del patrimonio monumentale e culturale Programma di Ricerca "Innovativo" Ordinario finanziato con fondi di Ateneo, Responsabile prof. Mario di Paola (2007-2009).
5. -Analisi dinamica di strutture da ponte danneggiate percorse da carichi mobili (Cofin 2003) Coordinatore Nazionale Prof. Luigi Gambarotta.
6. -Analisi dinamica di strutture da ponte danneggiate percorse da carichi mobili (Cofin 2001) Coordinatore Nazionale Prof. Luigi Gambarotta.
7. -Identificazione Dinamica del danneggiamento su strutture da ponte (Cofin 2000) Coordinatore Nazionale Prof. Cesare Davini.
8. -Identificazione dei parametri dinamici di strutture danneggiate, responsabile Prof. Mario Di Paola, R.S. 60%, 1999;
9. -Misura analitico-sperimentale della sicurezza di strutture in c.a. con tompagnamenti tradizionali, responsabile Prof. Maurizio Papia, R.S. 40%, 1999;
10. Problemi di identificazione strutturale e diagnostica, responsabile Prof. Mario Di Paola, R.S. 40%, 1998;

11. -Sicurezza di colonne soggette a forze orizzontali: effetti della non linearità del materiale e della natura ciclica delle azioni, responsabile Prof. Lidia La Mendola, R.S. 60%, 1998;
12. -Analisi aleatoria di strutture soggette a processi multivariati, responsabile Prof. Mario Di Paola, R.S. 60%, 1997;
13. -Sicurezza di colonne murarie soggette a forze orizzontali: effetti della non linearità del materiale e della natura ciclica delle azioni, responsabile Prof. Lidia La Mendola, R.S. 60%, 1997;
14. -Analisi aleatoria di strutture esposte al vento, responsabile Prof. Mario Di Paola, R.S. 60%, 1996;
15. -Tecnologie innovative per la mitigazione delle vibrazioni in sistemi strutturali, responsabile Prof. Mario Di Paola, R.S. 40%, 1996;
16. -Vulnerabilità e rischio sismico di edifici in muratura a tipologia specialistica, responsabile Prof. Lidia La Mendola, R.S. 60%, 1996;
17. -Adattamento di strutture elasto-plastiche soggette ad eccitazione stocastica, responsabile Prof. Salvatore Caddemi, R.S. 60%, 1995;
18. -Dinamica aleatoria di strutture esposte alle azioni del vento, responsabile Prof. Mario Di Paola, R.S. 60%, 1995;
19. -Sviluppo di tecniche e tecnologie per isolatori di manufatti dal suolo, responsabile Prof. Antonio Cerami, R.S. 60%, 1994;
20. -Dinamica aleatoria di sistemi isteretici soggetti a carichi impulsivi, responsabile Prof. Mario Di Paola, R.S. 60%, 1994;
21. -Sviluppo di tecniche e tecnologie per isolatori di manufatti dal suolo, responsabile Prof. Antonio Cerami, R.S. 60%, 1993;
22. -Dinamica aleatoria di sistemi isteretici soggetti a carichi impulsivi, responsabile Prof. Mario Di Paola, R.S. 60%, 1993;
23. -Dinamica di ponti sotto impulsi aleatori, responsabile Prof. Mario Di Paola, R.S. 60%, 1992;
24. -Meccanica stocastica non lineare, responsabile Prof. Mario Di Paola, R.S. 40%, 1992;
25. -Dinamica aleatoria di strutture non lineari, responsabile Prof. Mario Di Paola, R.S. 60%, 1991;
26. -Meccanica stocastica non lineare, responsabile Prof. Mario Di Paola, R.S. 40%, 1991;
27. Dinamica aleatoria di strutture non lineari, responsabile Prof. Mario Di Paola, R.S. 60%, 1990;
28. -Analisi aleatoria di sistemi composti da sottostrutture, responsabile Prof. Giuseppe Muscolino, R.S. 60%, 1990;
29. -Analisi aleatoria di strutture non lineari, responsabile Prof. Mario Di Paola, R.S. 60%, 1989;
30. -Dinamica aleatoria di strutture geometricamente non lineari, responsabile Prof. Giuseppe Muscolino, R.S. 60%, 1989;
31. -Problemi strutturali con non linearità geometriche e costitutive, responsabile Prof. Giuseppe Muscolino, R.S. 40%, 1989;
32. -Vento: affidabilità e progettazione in Italia, responsabile Prof. Mario Di Paola, R.S. 40%, 1989;
33. -Momenti statistici di sistemi elastoplastici, responsabile Prof. Mario Di Paola, R.S. 60%, 1988;

COORDINATION OF INTERNATIONAL RESEARCH PROJECTS

- 1-CoRI 2017 azione C – assegnazione contributo per l'avvio e lo sviluppo di collaborazioni internazionali dell'Ateneo (2018-2020).
- 2- Multiple Support Excitation Of Bridges, with Prof. R. Heuer, supported by Vienna University of Technology (International Office and CMSD) – 2015.
- 2- Health Monitoring Of High Rised Buildings with Prof. R. Heuer, supported by Vienna University of Technology (International Office and CMSD) – 2014.
- 3- Advances In Earthquake Engineering And Structural Dynamics, with Prof. R. Heuer, supported by Vienna University of Technology (International Office and CMSD) – 2013.
- 4- International Research Project with Prof. P. Spanos Ryon Endowed Chair in Engineering at Rice University of Houston; 2012 AZIONE D.
- 5- FRACTIONAL VISCO-ELASTIC CONTINUA, with Prof. R. Heuer, supported by Vienna University of Technology (International Office and CMSD) – 2012.

- 6- Nonlinear Vibration Control Of Structures Under Deterministic And Stochastic Excitations, with Prof. R. Heuer, supported by Vienna University of Technology (International Office and CMSD) - 2011.
- 7-"AZIONE D"; International project with Prof. P. Spanos Ryon Endowed Chair in Engineering at Rice University of Houston 2007-2010
- 8- Hilbert Huang transformation for damage detection in structures: with Prof. P. Spanos Ryon Endowed Chair in Engineering at Rice University of Houston 2005.

PARTICIPATION IN INTERNATIONAL RESEARCH PROJECTS

- 1- Horizon 2020 Project "ReWaCEM, Ressource recovery from industrial waste water by cutting edge membrane technologies", 2016-2019, Coordinatore Nazionale: Prof. Giorgio Micale.
- 2- Horizon 2020 Project "RED Heat to Power, Conversion of Low Grade Heat to Power through closed loop Reverse Electro-Dialysis", 2015-2019, Coordinatore Nazionale: Prof. Giorgio Micale.
- 3-"Control of dynamically excited structures", Joint project with Technical University of Vienna, Institute fur Allgemeine Mechanik/E201,(Di Paola M., Pirrotta A., Heuer R.and Adam C.Ziegler F.) 2004.
- 4-"Passive control of earthquake excited shear buildings: experimental and computational studies",Joint project with Technical University of Vienna, Institute fur Allgemeine Mechanik/E201,(Di Paola M., Pirrotta A., Heuer R.and Adam C.Ziegler F.) 2002.

Ph.D. STUDENTS SUPERVISED

1. Francesco Lo Iacono (2005-2008)
Dissertation: *"Passive control strategies for seismically excited structures. Theoretical and experimental analysis", 2008 - University of Palermo.*
2. Francesco Marino (2006-2009)
Dissertation: *"Physical-based approach to the mechanics of non-local theory", 2009 - University of Palermo.*
3. Alberto Di Matteo (2013-2015)
Dissertation: *"Structural vibration control through Tuned Liquid Column Dampers: theoretical and experimental analysis", 2014 - University of Palermo AWARDED THESIS by GADES (AIMETA).*
4. Co-tutor of Mirko Maurici (2014-2017)
Dissertation: *"A Reduced order model for describing mistuned bladed disk dynamics based on beam theory", 2008 - University of Genoa.*
5. Salvatore Di Lorenzo (2014-2017)
Dissertation: *"On the moving loads problem in discontinuous homogeneous beams and layered beams with interlayer slip", University of Palermo.*
6. Giuseppe Battaglia (2016-2019)
Dissertation: *"Novel tools for the mechanical analysis of thin plates and relevance on membrane-based technologies ", University of Palermo.*
7. Marie Curie PhD Iann Peter Dunn (2017-2021)
Dissertation *"A Novel Solution Method for the Dynamic Response of Rail and Road Bridges under Moving Loads", University of Palermo, Italy.*
8. Chiara Masnata (2017-2021)

Dissertation "Combined use of innovative passive control devices and conventional base isolation strategies", (Doctor Europaeus) University of Palermo, Italy.

9. Salvatore Russotto (2018-2022)- University of Palermo.

Dissertation: Un metodo innovativo di analisi modale operativa per l'identificazione strutturale, University of Palermo, Italy.

10. Dario Fiandaca (2020-2023) " Un nuovo sistema integrato per l'identificazione dinamica ed il monitoraggio delle infrastrutture viarie in modo indiretto" -University of Palermo.

11. Lizhi Niu (2021-2024), " Transient Analysis Of Stochastic Dynamic System Based On Complex Fractional Moments" Dual Degree with Northwestern Polytechnical University (NPU) of Xi'an (China) and University of Palermo.

Ph.D. STUDENTS SUPERVISED (CURRENTLY)

-Salvatore Di Trapani (2023-2025) University of Palermo.

-Salvatore Orlando (2023-2025) University of Palermo.

- Adam Di Nardo (2024-2026) National PhD University of Palermo and Rome.

CONFERENCES ORGANIZED

-Primo Workshop Innovative Dynamics Experiments Association (IDEA), 12-13 June 2025, Politecnico di Milano, Milano, Italy.

-CC-S11: Computational and Stochastic Approaches for Structural Performance and Reliability: CIVIL-COMP 2025; The Eighteenth International Conference on Civil, Structural and Environmental Engineering Computing 27-29 August 2025 Cagliari, Sardinia, Italy.

-MS48- Computational Methods for Stochastic Engineering Dynamics Engineering Mechanics Institute Conference (EMI 2025) May 27th - 30st, 2025 Anaheim, CA, USA.

-Cross-Share Insights Workshop (CSIW 25), "Innovative Metamaterial Components and Absorbers for Vibration Mitigation (METAVIBRA)" , Italia, Palermo (PA), 28/04/2025 - 29/04/2025.

-MS06 "Structural Vibration Control", EMI2024IC , Vienna

-MS 21: Advancements in Stochastic Dynamics for Design and Assessment of Resilient and Sustainable Engineering Structures ICVRAM&ISUMA2024 Shanghai.

- International conference: Engineering Mechanics Institute 2023 International Conference 2023,(EMI 2023 IC) 27-30 August, Palermo,Italy.

-MS 26 Title: Advances in methods for global reliability of complex structures ICASP 2023

Session Chairs: Jie Li - Tongji University, Shanghai, China Jianbing Chen - Tongji University, Tongji

University, China Ioannis Kouglioutzoglou - Columbia University, New York, USA Antonina Pirrotta -

Palermo University, Palermo, Italy Michael Beer - Leibniz University of Hannover, Hannover, Germany

-MS07 - NOVEL STOCHASTIC DYNAMICS METHODOLOGIES & SIGNAL PROCESSING TECHNIQUES FOR CIVIL ENGINEERING APPLICATIONS, for AIMETA Conference, 4-9 September 2022, Palermo.

"MS-06: Stochastic Engineering Dynamics: Recent Advances and Future Challenges, organized by I. Kouglioutzoglou, A. Pirrotta, R. Iwankiewicz, A.Naess, for ICOSAR2021-2022, 13th International Conference on Structural Safety & Reliability 13-17 September 2022, Tongji University, Shanghai, China.

"MS-310: Computational Methods for Stochastic Engineering Dynamics, organized by I. Kouglioutzoglou, M. Grigoriu, A. Pirrotta, for EMI 2022 Engineering Mechanics Institute Conference, May 31st- June 3rd, 2022, Baltimore, USA.

Mini Symposium, "Numerical methods for stochastic mechanics and dynamical systems", International Conference on Nonlinear Solid Mechanics (CONSOM 2022), 13-16 June 2022, Alghero, Italy.

"MS-309: Recent Advances in Stochastic Dynamics and Signal Processing Techniques, organized by Apostolos Psaros, Ioannis Kougiumtzoglou, Antonina Pirrotta, Athanasios Pantelous, for EMI 2020-21 Engineering Mechanics Institute Conference, May 26-28, 2021, Columbia University, USA.

"MS-83: Computational Methods for Stochastic Engineering Dynamics, organized by I. Kougiumtzoglou, M. Grigoriu, A. Pirrotta, A., Pantelous., for EMI 2019 Engineering Mechanics Institute Conference, June 18th - June 21st, 2019 California Institute of Technology (Caltech) campus, CA, USA.

Mini Symposium, "Stochastic Mechanics and Probability in Engineering", XXIV Congresso- Associazione Italiana di Meccanica Teorica e Applicata (AIMETA 2019), 15-19 September 2019, Roma, Italy.

Mini Symposium, "Numerical methods for stochastic mechanics and dynamical systems", International Conference on Nonlinear Solid Mechanics (CONSOM 2019), 16-19 June 2019, Roma, Italy

"MS-83: Computational Methods for Stochastic Engineering Dynamics, organized by I. Kougiumtzoglou, M. Grigoriu, A. Pirrotta, A., Pantelous., for EMI 2019 Engineering Mechanics Institute Conference, June 18th - June 21st, 2019 California Institute of Technology (Caltech) campus, CA, USA.

International Summer School: Monitoring the historic buildings , Palermo 10-14 September 2018 for H2CU Honors Center of Italian Universities.

Mini Symposium on "Methods for Structural Problems with Particular Attention for Meshfree Methods" MS047 organized by A. Pirrotta, for the 9th ICCM 2018 in Computational Mechanics Conference, August 06-10, 2018 Rome, Italy.

Mini Symposium on "Computational Stochastic Structural Dynamics" MS1001 organized by A. Pirrotta, M. Di Paola, C. Proppe, for the 13th World Congress in Computational Mechanics (WCCM2018) conference, July 22-27, 2018 at the Marriott Marquis in New York City, NY, USA.

CSM8: 8th Conference on Computational Stochastic Mechanics, Paros, Grecia, 10-13 Giugno 2018.

"MS-18: Numerical Methods for Stochastic Engineering Dynamics", organized by I. Kougiumtzoglou, A. Naess, A. Pirrotta, A., Pantelous., for EMI 2018 Engineering Mechanics Institute Conference, May 29th - June 2nd, 2018, MIT campus, Boston, MA, USA.

WMDP Workshop on Recent Advances in Mechanics (structural/solid) Dynamical Systems (deterministic/stochastic) Probability Theory (mathematical/applied) MDP 2018, Palermo, 5-6 March.

Mini Symposium, MS 05 Recent Advances in Stochastic Structural Dynamics, X International Conference on Structural Dynamics EUROdyn 2017, 10-13 September 2017, Rome, Italy.

Mini Symposium, MS11 Approcci di calcolo stocastico e della probabilità nella meccanica, XXIII Congresso- Associazione Italiana di Meccanica Teorica e Applicata AIMETA 2017, 4-7 September 2017, Salerno, Italy.

Mini Symposium, Stochastic engineering dynamics: recent advances & future challenges, 12th International Conference on Structural Safety & Reliability ICOSSAR 2017, 6-10 August 2017, Vienna, Austria.

Mini Symposium, MS 122 Numerical Methods for Engineering Stochastic Dynamical Systems, EMI 2017, 4-7 June, 2017 SanDiego, USA.

Mini Symposium, MS 05 Recent Advances in Stochastic Structural Dynamics, X International Conference on Structural Dynamics EURODYN 2017, 10-13 September 2017, Rome, Italy.

International conference: Stochastic Mechanics 2016. Capri, 12-15 Giugno 2016.

Mini Symposium, PMC-MS-03: Uncertainty Modeling & Propagation Techniques In Stochastic Dynamics, EMI/PMC 2016 May, Nashville.

Mini Symposium, Uncertainty Modeling & Propagation Techniques In Engineering Mechanics 3rd International Conference on Materials and Reliability, November 23-25, 2015, Jeju, Korea.

Mini Symposium, MS B2: Novel Stochastic Dynamics Methodologies and Signal Processing Techniques for Civil Engineering Applications , Engineering Mechanics Institute Conference 2015 (EMI 2015), 16-19 June 2015, Stanford, United States.

Seventh International Conference on Computational Stochastic Mechanics. Santorini, 15-18 Giugno 2014 (Grecia).

The Vienna Congress on Recent Advances in Earthquake Engineering and Structural Dynamics (VEESD2013) will take place in Vienna, Austria on August 28-30, 2013.

International conference: Stochastic Mechanics 2012 Meccanica Stocastica. Ustica, 7-10 Giugno 2012.

Sixth International Conference on Computational Stochastic Mechanics. Rodi, 13-16 June 2010 (Grecia).

GMA 2010 IV Riunione del Gruppo Materiali dell'AIMETA, 25 – 26 February 2010, Palermo.

MERCEA'08 2008 Seismic Engineering International Conference commemorating the 1908 Messina and Reggio Calabria Earthquake 8-11 July 2008 Reggio Calabria and Messina.

MECCANICA STOCASTICA '08 Convegno Nazionale del Gruppo AIMETA di Meccanica Aleatoria ed Affidabilità Strutturale Acacia Resort hotel Cefalù 11-12 2008.

10° Convegno nazionale di ingegneria del vento IN-VENTO-2008 Acacia Resort hotel Cefalù, 8-11 Giugno 2008.

Corsi di Formazione per L'Esperto in consolidamento statico del patrimonio edilizio e monumentale Palermo 2006 Progetto EDILTECH: Prog. N. 1999/IT.16.1PO.011/3.13/7.2.4/343.

International Symposium on Recent Advances in Mechanics (structural/solid) Dynamical Systems (deterministic/stochastic) Probability Theory (mathematical/applied) MDP 2007, Palermo, 3-6 June 2007.

Fifth International Conference on Computational Stochastic Mechanics. Rodi, 21-23 June 2006.

10 Workshop di Dinamica delle strutture analisi e sperimentazione, (C.I.Di.S.) Messina 21-22 -02-05.

Fourth International Conference on Computational Stochastic Mechanics. Corfu, 9-12 June 2002.

XVI Congresso Nazionale AIDAA, Palermo 24-28 settembre 2001.

First CSMA-GIMC Joint Workshop on Modern Issues in Modelling and Computation of Damage Failure, Palermo 6-9 June 2001.

Euromech 413 Colloquium on: Stochastic Dynamics of Nonlinear Systems, Palermo 12-14 June 2000.

Meccanica Stocastica 98, Convegno Nazionale del Gruppo AIMETA di Meccanica Stocastica, Lampedusa 1-3 giugno, 1998.

8° Convegno Nazionale L'Ingegneria Sismica in Italia Taormina, Settembre 97.

Convegno Nazionale del gruppo AIMETA di meccanica stocastica, Taormina 6-8 luglio 1993.

PAPERS IN ISI JOURNALS

- [1] Russotto, S., Pirrotta, A., Mellin transform for the probabilistic characterization of random variables and stochastic processes, *Probabilistic Engineering Mechanics*, 2025, 80, 103766.
- [2] M. Roozbahan, C. Masnata, G. Turan, A. Pirrotta; Efficiency evaluation of optimal TLCD and TMD for the seismic response reduction of buildings considering soil-structure interaction effect. *Meccanica* (2025). 10.1007/s11012-025-01981-9.
- [3] Niu, L., Di Paola, M., Pirrotta, A., Xu, W., Maximum entropy principle handled by using complex fractional moments, *Meccanica* (2025), DOI: 10.1007/s11012-025-01949-9.
- [4] Russotto S., Di Paola M., Pirrotta A., 2024, Self-similarity and probability density function of the transient response of fractional compound motion, *Engineering Structures*, DOI: 10.1016/j.engstruct.2024.118842.
- [5] Masnata C., Pirrotta A., 2024 Optimal control of base-isolated systems with sliding TLCD under stochastic process, *Engineering Structures*, DOI: 10.1016/j.engstruct.2024.118754.
- [6] Masnata C., Di Nardo L., A., Pirrotta A., 2024 Theoretical and experimental investigation on an improved rack and pinion inerter, *Nonlinear Dynamics*, DOI: 10.1007/s11071-024-10532-y
- [7] Niu, L., Xu, W., Di Paola, M., Pirrotta, A., 2024 Generalized complex fractional moment for the probabilistic characteristic of random vectors, *Engineering Structures*, DOI: 10.1016/j.engstruct.2024.118685.
- [8] Niu, L., Di Paola, M., Pirrotta, A., Xu, W., 2024, Laplace and Mellin transform for reconstructing the probability distribution by a limited amount of information, *Probabilistic Engineering Mechanics*, DOI: 10.1016/j.probenengmech.2024.10370
- [9] Di Matteo, A., Pirrotta A., 2024, Efficient path integral approach via analytical asymptotic expansion for nonlinear systems under Gaussian white noise, *Nonlinear Dynamics*; Doi: 10.1007/s11071-024-09822-2
- [10] Pirrotta, A., Proppe, C., 2024, Innovative Formulation for the Bending of Plates with Reentrant Angles, *Journal of Engineering Mechanics*; Doi: 10.1061/JENMDT.EMENG-7712

- [11] Chillemi, M., Furtmüller, T., Adam, C., Pirrotta, A., 2024, Fluid inerter-based vibration control of multi-modal structures subjected to vertical vibration, *Engineering Structures*; Doi: <https://doi.org/10.1016/j.engstruct.2024.117938>
- [12] Chillemi, M., Furtmüller, T., Adam, C., Pirrotta, A., 2024, Experimental and numerical investigation of a fluid inerter for structural control, *Journal of Sound and Vibration*; Doi: 10.1016/j.jsv.2023.118222
- [13] Masnata, C., Adam, C., Pirrotta, A.;2024, Optimal design of short-period structures equipped with sliding tuned liquid column damper and numerical and experimental control performance evaluation, *Acta Mechanica*, DOI:10.1007/s00707-023-03832-8
- [14] Masnata, C., Pirrotta, A.;2024, Optimal design of inerter-based absorbers with amplified inertance: from the improved tuned liquid column damper inerter (ITLCDI) to the improved tuned mass damper inerter (ITMDI) and improved tuned inerter damper (ITID); *Meccanica*, Doi: 10.1007/s11012-024-01834-x
- [15] Laflamme, Simon; Ubertini, Filippo; Di Matteo, Alberto;Pirrotta, Antonina; Perry, Marcus;Fu, Yuguang;Li, Jian;Wang, Hao;Hoang, Tu;Glisic, Branko;Bond, Leonard J;Pereira, Mauricio; 2023 , Roadmap on measurement technologies for next generation structural health monitoring systems, *Measurement Science and Technology*, DOI: 10.1088/1361-6501/acd135.
- [16] Masnata, C., Di Matteo, A., Adam, C., Pirrotta, A., 2023, Nontraditional configuration of tuned liquid column damper inerter for base-isolated structures, *Mechanics Research Communications*, DOI: 10.1016/j.mechrescom.2023.104101.
- [17] Masnata, C., Di Matteo, A., Adam, C., Pirrotta, A., 2023, Efficient estimation of tuned liquid column damper inerter (TLCDI) parameters for seismic control of base-isolated structures, *Computer-Aided Civil and Infrastructure Engineering*, DOI: 10.1111/mice.12929.
- [18] Pirrotta A, Russotto S, 2023, A new OMA method to perform structural dynamic identification: numerical and experimental investigation, *Acta Mechanica*, DOI: 10.1007/s00707-023-03558-7.
- [19] Chillemi M., Furtmüller T., Adam C., Pirrotta A., 2023, Nonlinear mechanical model of a fluid inerter, 2023, *Mechanical Systems and Signal Processing*, 188, 109986. DOI: 10.1016/j.ymssp.2022.109986
- [20] Di Paola M., Pirrotta A., 2022, Fokker-Planck equation of the fractional Brownian motion, *International Journal of Non-Linear Mechanics*, 147, 104224 DOI: 10.1016/j.ijnonlinmec.2022.104224
- [21] Fiandaca, D.,Di Matteo, A., Patella, B.,Moukri, N., Inguanta, R.,Llort, D.,Mulone, A., Mulone, A., Alsamahi, S.,Pirrotta, A., 2022, An Integrated Approach for Structural Health Monitoring and Damage Detection of Bridges: An Experimental Assessment, *Applied Sciences (Switzerland)*12,13018, DOI:10.3390/app122413018
- [22] Russotto S., Di Matteo A., A. Pirrotta, 2022, An Innovative Structural Dynamic Identification Procedure Combining Time Domain OMA Technique and GA, *Buildings*, 12, (7), 963, doi: 10.3390/buildings12070963
- [23] Di Matteo A., Fiandaca D., Pirrotta A., 2022, Smartphone-based bridge monitoring through vehicle-bridge interaction: analysis and experimental assessment, *Journal of Civil Structural Health Monitoring*, doi: 10.1007/s13349-022-00593-1
- [24] Di Paola, M., Russotto, S., Pirrotta, A. (2022). Self-similarity and response of fractional differential equations under white noise input. *Prob. Eng. Mech.*, 70 doi:10.1016/j.pro bengmech.2022.103327
- [25] Di Matteo A., C. Masnata, C. Adam, A. Pirrotta, Optimal Design of Tuned Liquid Column Damper Inerter for vibration control, *Mechanical Systems and Signal Processing*, 167 (2022).
- [26] Pinnola, F. P., Barretta, R., Marotti de Sciarra, F., Pirrotta A., Analytical Solutions of Viscoelastic Nonlocal Timoshenko Beams, *Mathematics*,3, 2022.

- [27] A. Di Matteo, M. Pavone, A. Pirrotta 2021, Exact and approximate analytical solutions for nonlocal nanoplates of arbitrary shapes in bending using the line element-less method, *Meccanica*, <https://doi.org/10.1007/s11012-021-01368-6>.
- [28] O. Zaheer, G. Ingarao, A. Pirrotta, L. Fratini, 2021, Geometrical deviation of end-of-life parts as a consequence of reshaping by single point incremental forming, *The International Journal of Advanced Manufacturing Technology*, <https://doi.org/10.1007/s00170-021-07102-6>.
- [29] Di Matteo A., Masnata C., Russotto S., Bilello C., Pirrotta A.; 2021 A novel identification procedure from ambient vibration data, 2021, *Meccanica*, 56, 797-812.
- [30] Battaglia, G., Gurreri, L., Ciofalo, M., Cipollina A., Bogle I.D.L., Pirrotta, A., Micale, G., 2021, A 2-D model of electrodialysis stacks including the effects of membrane deformation, *Desalination*, 500, 114835.
- [31] Masnata, C., Di Matteo, A., Adam, C., Pirrotta, A., 2021, Assessment of the tuned mass damper inerter for seismic response control of base-isolated structures, *Structural Control and Health Monitoring*, 28(2), e2665.
- [32] A. Pirrotta, I. A. Kougiumtzoglou, A. Di Matteo, V. C. Fragkoulis ; A. A. Pantelous, and C. Adam, 2021, Deterministic and Random Vibration of Linear Systems with Singular Parameter Matrices and Fractional Derivative Terms, *Journal of Engineering Mechanics*, DOI: 10.1061/(ASCE) EM.1943-7889.0001937.
- [33] Giuseppe Battaglia, Alberto Di Matteo,; Giorgio Micale, Antonina Pirrotta, 2021, Analysis of Rectangular Orthotropic Membranes for Mechanical Properties Identification through Load-Displacement Data, *Journal of Engineering Mechanics*, DOI: 10.1061/(ASCE)EM.1943-7889.0001921.
- [34] Kaynardag, K., Battaglia, G., Ebrahimkhanlou, A., Pirrotta, A., Salamone, S., 2021, Identification of Bending Modes of Vibration in Rails by a Laser Doppler Vibrometer on a Moving Platform, *Experimental Techniques*, 45(1), pp. 13–24.
- [35] Pirrotta A., Proppe C., 2020, Extension of the line element-less method to dynamic Problems, *Meccanica*, DOI: 10.1007/s11012-019-01120-1.
- [36] Masnata C., Di Matteo A., Adam C., Pirrotta A.; Smart structures through nontraditional design of Tuned Mass Damper Inerter for higher control of base isolated systems, 2020, *Mechanics Research Communication*, 105, 103513.
- [37] Di Matteo A., Pirrotta A., Gebel E., Spanos P.D., 2020, Analysis of block random rocking on nonlinear flexible foundation, *Probabilistic Engineering Mechanics*, 59, 103017.
- [38] Liaskos K. B., A. A. Pantelous, Kougiumtzoglou I. A., Meimaris A. T., Pirrotta A., 2020, Implicit analytic solutions for a nonlinear fractional partial differential beam equation, *Communications in Nonlinear Science and Numerical Simulation*, 85, 105219.
- [39] Lyu M.Z., Chen J.B., Pirrotta A., 2020, A novel method based on augmented Markov vector process for the time-variant extreme value distribution of stochastic dynamical systems enforced by Poisson white noise, *Communications in Nonlinear Science and Numerical Simulation*, 80, 104974.
- [40] Di Matteo, A., Dunn, I.P., Failla, G., Pirrotta, A., 2020, A novel solution to find the dynamic response of an euler-bernoulli beam fitted with intraspan TMDs under Poisson type loading, *Infrastructures*, 5(5), 40
- [41] Battaglia G., Gurreri L., Cipollina A., Pirrotta A., Velizarov S., Ciofalo M., Micale G., 2019, Fluid-structure interaction and flow redistribution in membrane-bounded channels, *Energies*, 12(22), 4259.
- [42] Di Matteo A., Masnata C., Pirrotta A.; Hybrid Passive Control Strategies for Reducing the Displacements at the Base of Seismic Isolated Structures, 2019, *Frontiers in Built Environment*, 5, 132.

- [43] Di Matteo A., Masnata C., Pirrotta A.; Simplified analytical solution for the optimal design of Tuned Mass Damper Inerter for base isolated structures, 2019, *Mechanical Systems and Signal Processing*, 134, 106337.
- [44] Battaglia G., Gurreri L., Airòfarulla G., Cipollina A., Pirrotta A., Micale G., Ciofalo M., 2019, Membrane deformation and its effects on flow and mass transfer in the electromembrane processes, *International Journal of Molecular Sciences*, 20(8), 1840.
- [45] Failla G., Di Paola M., Pirrotta A., Burlon A., Dunn, I., 2019, Random vibration mitigation of beams via tuned mass dampers with spring inertia effects, *Meccanica*, , DOI: 10.1007/s11012-019-00983-8.
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- [50] Furtmüller T., Di Matteo A., Adam C., Pirrotta A., 2019, "Base-isolated structure equipped with tuned liquid column damper: an experimental study", *Mechanical Systems and Signal Processing*, 116, 816-831.
- [51] Battaglia G., Di Matteo A., Micale G., Pirrotta A., 2018, "Arbitrarily shaped plates analysis via Line Element-Less Method (LEM)", *Thin-Walled Structures*, 133, 235-248.
- [52] Battaglia G., Di Matteo A., Micale G., Pirrotta A., 2018, "Vibration-based identification of mechanical properties of orthotropic arbitrarily shaped plates: Numerical and experimental assessment", *Composites Part B: Engineering*, 150, 212-225.
- [53] Di Lorenzo S., Adam C., Burlon A., Failla G., Pirrotta A., 2018, "Flexural vibrations of discontinuous layered elastically bonded beams", *Composites Part B: Engineering*, 135, 175-188.
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- [61] Kougiumtzoglou I., Fragkoulis V., Pantelous A., Pirrotta A., 2017, Random vibration of linear and nonlinear structural systems with singular matrices: A frequency domain approach, *Journal of Sound and Vibration*, 404, 84-101.
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PATENTS

Anti-vibration knob (Italian Patent Application No. 102021000004691 filed on 01.03.2021 and obtained 16.03.2023).

CONSULTING ACTIVITIES AND CONVENTIONS

- Consultancy for the San Matteo Church and the University of Palermo studies for guidance and specific technical advice aimed at carrying out the seismic safety verification of the "Historical Church in Palermo, Sicily, (2023).
- Consultancy for the Sicilian regional government - regional council of energy and utilities, regional department of water and waste - and the inter-university centre of structural, theoretical and experimental dynamics (cidi.s.) of University of Palermo studies for guidance and specific technical advice aimed at carrying out the seismic safety verification of the "Historical building in Barcellona, Sicily, (2022).
- Expert Nomination for consulting Committee for the Sicilian and Reggio Calabria regional government for important structures, (2019).
- Consultancy for the Sicilian regional government - regional council of energy and utilities, regional department of water and waste - and the inter-university centre of structural, theoretical and experimental dynamics (cidi.s.) of University of Palermo studies for guidance and specific technical advice aimed at carrying out the seismic safety verification of the "poma" and "rosamarina" dams, ancillary works and shores (2015).
- Third Prize in the Design Competition held by the Conferenza Episcopale Italiana Servizio Nazionale for the construction of religious buildings CEI: Pilot Project 2011; Diocese: Ferrara – Comacchio; Parish: S. Giacomo Apostolo; Municipality: Ferrara; Designer Prof. A. Sciascia; Structural Consultant Prof. A. Pirrotta.
- In charge of the research agreement between the department (DICAM) and the regional centre of planning and restoration: scientific research aimed at studying seismic risk prevention of the silver statue of the Madonna of the Immaculate Conception, at the Basilica of St. Francis of Assisi in Palermo, "agreement of scientific collaboration" (2009).
- Agreement between the department in charge of the management of Palermo's historical centre and the inter-university centre of theoretical and experimental structural dynamics (c.i.di.s.) of the University of Palermo: to verify the endurance and the stability of the structures of Teatro Massimo, relating to areas open to the public. In charge of the dynamic tests: prof. A Pirrotta (2007). PO ERDF Project – Sicilian Region 2007/2013 - intervention line 4.1.1.1 "SLIM" - person in charge: Prof. Mario Di Paola. Person in charge for Dynamic Testing: Prof. A. Pirrotta.
- In charge of the research agreement between the Libera Università Maria SS. Assunta (L.U.M.S.A.) and the inter-university centre of theoretical and experimental structural dynamics (c.i.di.s.). Working for the Vatican Passetto (near the construction of a library complex in Rome) to design the control system for and to monitor the structure (2012).
- In charge of the research agreement between the department and the company Strago S.p.A based in Rome. Implementation of dynamic tests on a masonry vault concerning the validity of SMAMID Systems in practice, on a masonry structure (2011).

She began working as an engineering consultant freelance from 1988 to 1992. Notable Projects:

1990 - Structural designer: project for the recovery and new destination of the former convent, at that time a prison and court, of San Domenico in Cefalù, Sicilian Region Department of Cultural Heritage, Environment and Education, under the direction of Prof. Arch. P. Culotta.

1989 - Structural consultancy on the consolidation and static restoration of the Osteria Magno di Cefalù together with Prof. Ing. Mario Di Paola under the direction of Arch. S. Braidà.
This project was published in Incontri e Iniziative: Memorie del Centro di Cultura di Cefalù n. VIII, 1-2 1991 (1994) Numero speciale--. L'Osterio Magno di Cefalù dal Progetto al restauro 49-52.

1988 Designer of the Casa Finocchiaro structures at Villa Ciambra, Monreale under the direction of Prof. Arch. G. Leone.

This project was published in "CASABELLA" n. 603 pag.20-21. All. other titles pag.3-5

1988 - Drafting plans for the new headquarters of the Faculty of Teaching at the Parco D'Orleans in Palermo. Participating in the overall project and its structural design aspects under the direction of Prof. Arch. G. Leone- All. other titles pag.1-2

October 2025

A handwritten signature in black ink, appearing to read 'Antonio Di Paola', with a stylized flourish at the end.