

# Stefania Imperatore

Engineer

Ph.D. in Structural Engineering

Assistant Professor at Niccolò Cusano University

CEAR-07/A (ex ICAR/09)

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## 1. General and Personal Data



Name	Stefania Imperatore
Nationality	Italian
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ORCID	0000-0002-4030-3052
Scopus ID	35810426100
Professional Order	Order of Engineers of Caserta

## 2. Current Academic Position

Period	08/05/2024 - Present
Position	University Researcher (fixed-term)
Institution Name	UNICUSANO - Niccolò Cusano University
Institution Address:	Via Don Carlo Gnocchi, 3 - 00166 ROME

## 3. Current Bibliometric Indicators

Articles	19 (since 2010; median for full professor: 13)
Citations	930 (since 2010; median for full professor: 204)
H-Index	15 (median for full professor: 9)

## 4. Brief Profile

	<p>Stefania Imperatore (born in Caserta, 1979), an engineer, graduated in 2005 from the Faculty of Engineering at the University of Cassino and Southern Lazio with a thesis titled "<i>Design Criteria for Seismic Retrofitting of RC Frames Designed for Gravity Loads Only with FRP.</i>" She earned a PhD in Structural Engineering from the Department of Civil Engineering (now DICII) at the University of Rome Tor Vergata, completing in 2009 a research project titled "<i>Influence of Corrosion on the Structural Behavior of RC and PC Elements Subject to Degradation.</i>" From 2009 to 2012, she held a research fellowship, and since October 2012, she has collaborated with TEAMPROGETTI studio in Reggio Emilia on post-earthquake interventions, particularly for ecclesiastical buildings. Since 2014, she has been a fixed-term university researcher in SSD ICAR/09 - SC 08/B3 at the Niccolò Cusano University. In July 2020, she achieved National Scientific Qualification as Associate Professor in SC 08/B3-ICAR/09. In December 2021, she was awarded the fib CACRCS prize as an expert researcher on degraded reinforced concrete structures due to corrosion.</p>
Research Activities	<p>Since 2006, she has focused on the following main research areas:</p> <ul style="list-style-type: none"><li>• <b>Structural behavior of RC and PC elements subjected to reinforcement corrosion.</b> This theoretical and experimental research aims to evaluate the mechanical properties of degraded materials, understand the phenomenology of steel-concrete interaction, develop mechanical models of cracking and bond, and define the residual capacity of corroded elements under static conditions. Since 2019, she has led two international research collaborations on the experimental evaluation of static behavior in corroded RC elements (CONSTIN and OPTION research projects). These activities are part of an Erasmus+ bilateral agreement, promoted by Prof. Kioumars (Department of Civil Engineering and Energy Technology, Faculty of Technology, Art and Design, OsloMET - Oslo Metropolitan University), aiming to create an international research</li></ul>

network on the durability of existing structures.

- **Seismic behavior of rocking masonry elements.** The research focuses on developing models capable of identifying the dynamic behavior of macroelements in masonry structures during earthquakes to assess their seismic capacity.
- **Seismic behavior of large-hall structures.** Churches are particularly vulnerable to seismic actions due to their architectural features (large open spaces, lack of rigid diaphragms, and thrusting elements like arches and vaults). This research seeks to identify the main characteristics of a church's dynamic behavior and determine optimal methods for evaluating seismic capacity and vulnerability.
- **Structural diagnostics using non-contact techniques (in collaboration with CNR-ISPC).** Structural issues in road infrastructures (bridges and viaducts) manifest as widespread cracking due to excessive stress from traffic conditions, extraordinary actions (collisions, fires, earthquakes), or degradation (corrosion, freeze-thaw cycles). The cracking pattern indicates an infrastructure's structural capacity, and correctly interpreting it allows for identifying and addressing critical issues. Currently, crack pattern assessment relies on empirical techniques that often involve manual measurement, which is labor-intensive and costly. This research aims to develop an innovative methodology using high-definition photographic images to quantify current damage and correlate it to the structure's degradation level.

As an external consultant, she has conducted theoretical and experimental research on enhancing the structural performance of RC and masonry components using innovative materials, as well as defining the damage state of cultural heritage using non-contact techniques. Since the 2009 L'Aquila earthquake, she has participated in the Reluis Consortium's support activities for the Civil Protection Department and the Ministry of Cultural Heritage during seismic emergencies in Italy. She is actively involved in drafting the *Inventory of Existing Structural and Building Typologies (CARTIS)* promoted by Reluis. She contributed to the drafting of the "Construction Details of Reinforced Concrete Structures" volume (Associazione Aicap, coordinated by Prof. Luca Sampaolesi). Since 2019, she has been a member of ACI Italy Chapter (Italian section of the American Concrete Institute) and CTE (College of Technical Industrialization). She has served as Guest Editor for several Special Issues in international journals on topics related to vulnerability and degradation effects in RC and PC structures. Her research includes about 80 publications at national and international levels, with 50 indexed in the SCOPUS database. At CACRCS2021, supported by fib and CTE, she was awarded as an expert researcher for her work "*The Corrosion Influence on the Bond Performance of Different Reinforcement Typologies*" (authors: S. Imperatore, A. Benenato, M. Kioumars, B. Ferracuti). Since November 2022, she has been part of the working group drafting a CNR technical document on evaluating the behavior of corroded RC structures.

Teaching Activities	<p>Since 2013, she has been teaching "<b>Structural Engineering</b>" (12 ECTS) and "<b>Structural Strengthening of Masonry Structures</b>" (9 ECTS), mandatory courses in the master's degree program in Civil Engineering at Niccolò Cusano University, delivered both online and in-person. From 2016 to 2021, she collaborated on "Bridge Laboratory" with Prof. Zila Rinaldi at the University of Rome Tor Vergata, where she also held advanced teaching activities annually. Between 2010 and 2012, she collaborated with Prof. Camillo Nuti's <i>Structural Design 3M</i> course at Roma Tre University. From 2007 to 2010, she assisted with exercises for "Structural Engineering I" led by Prof. Zila Rinaldi at Tor Vergata and was a substitute lecturer for "Structural Engineering Laboratory I and II." She co-supervised over 70 bachelor and master's theses and, since 2013, has been the primary advisor for more than 30 master's theses on topics such as RC durability, masonry seismic vulnerability, and structural retrofitting of existing buildings.</p>
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## 5. Participation in Scientific Conferences in Italy or Abroad

### A. Participation as Speaker at National Conferences and Workshops

- 10-14/06/2007 **XII ANIDIS Conference on Seismic Engineering in Italy.** Pisa, June 10-14, 2007. Presentation of the paper: "Imperatore S, Rinaldi Z (2007). ADAPTIVE ANALYSIS FOR THE EVALUATION OF THE SEISMIC BEHAVIOR OF TWO-DIMENSIONAL AND THREE-DIMENSIONAL FRAME STRUCTURES IN RC." Published in the conference proceedings (ISBN: 9788884924582), Paper 166, p. 138.
- 13-14/11/2008 **Workshop on Handling Exceptions in Structural Engineering.** Rome, November 13-14, 2008. Presentation of the paper: "Como M, Imperatore S (2008). ON THE SEISMIC RESISTANCE OF ARC/GRAVITY DAMS DAMAGED BY SHRINKAGE."
- 28/06/2009 - 02/07/2009 **XIII ANIDIS Conference on Seismic Engineering in Italy.** Bologna, June 28 - July 2, 2009, Presentation of the paper: "Como M, Imperatore S (2009). EFFECTS OF STATIC DEGRADATION ON THE SEISMIC RESISTANCE OF ARC/GRAVITY DAMS MADE OF CONCRETE" Published in the conference proceedings (ISBN: 9788890429200).
- 19-21/05/2011 **AICAP Days 2011 - The Development Prospects of Reinforced Concrete Works in the Third Millennium.** Padua, May 19-21, 2011. Presentation of the paper: "Imperatore S, Lavorato D, Nuti C, Santini S, Sguerri L (2011). EXPERIMENTAL STUDY ON REINFORCED CONCRETE BEAMS STRENGTHENED FOR SHEAR WITH FRP" Published in the conference proceedings (pp. 537-544).
- 13-17/09/2015 **XVI ANIDIS Conference on Seismic Engineering in Italy.** L'Aquila, September 13-17, 2015. Presentation of the paper: "Coccia S, Imperatore S, Rinaldi Z (2015). INFLUENCE OF CORROSION ON THE ROTATIONAL CAPACITY OF PLASTIC HINGES IN RC ELEMENTS." Published in the conference proceedings (ISBN 978-88-940985-6-3).
- 27-28/10/2016 **Italian Concrete Days - AICAP Days 2016 CTE Congress.** Rome, October 27-28, 2016 Speaker for the paper: "Coccia S, Imperatore S, Rinaldi Z (2016). ROTATIONAL CAPACITY OF RC ELEMENTS DAMAGED BY CORROSION."
- 17-21/09/2017 **XVII ANIDIS Conference on Seismic Engineering in Italy.** Pistoia, September 17-21, 2017. Presentation of the paper: "Imperatore S, Zucconi M, Ferracuti B (2017). EFFECTS OF LOCALIZED CORROSION ON THE SEISMIC BEHAVIOR OF EXISTING RC STRUCTURES." Published in the conference proceedings (Paper 114, ISBN: 9788867418541).
- 14-16/04/2021 **Italian Concrete Days 2020.** Online, April 14-16, 2021. Presentation of the paper: "Benenato A, Ferracuti B, Kioumarsis M, IMPERATORE S (2021). EXPERIMENTAL INVESTIGATION ON THE BOND-SLIP BEHAVIOR OF CORRODED STRANDS."

### B. Participation as Speaker at International Conferences and Workshops

- 11-14/06/2008 **Life-Cycle Civil Engineering - 1st International Symposium on Life-Cycle Civil Engineering, IALCCE '08** Varenna, Lake Como, Italy, 11-14 June 2008 Presentation of the paper: "Como M, Imperatore S (2008). FUNCTIONALITY AND STRENGTH OF ARCH CONCRETE DAMS CRACKED BY SHRINKAGE." Published in the conference proceedings (ISBN: 0415468574), pp. 733-738.

- 13-15/06/2012 **6th International Conference on FRP Composites in Civil Engineering, CICE 2012.** Rome, Italy, 13-15 June 2012. Presentation of the paper: “Imperatore S, Lavorato D, Nuti C, Santini S, Sguerri L (2012). NUMERICAL MODELING OF EXISTING RC BEAMS STRENGTHENED IN SHEAR WITH FRP U-SHEETS.” Published in the conference proceedings (paper #178 – CD Rom).
- 22-28/09/2015 **International Conference of Numerical Analysis and Applied Mathematics 2015, ICNAAM 2015.** Rhodes, Greece, 22–28 September 2015. Presentation of the paper: “Imperatore S (2015). INFLUENCE OF THE BOND-SLIP RELATIONSHIP ON THE FLEXURAL CAPACITY OF R.C. JOINTS DAMAGED BY CORROSION.” Published in the conference proceedings vol. 1738, 270021, ISBN: 978-073541392-4, ISSN: 0094-243X, DOI: 10.1063/1.4952060.
- 26-30/06/2016 **Brick and Block Masonry: Trends, Innovations and Challenges - 16th International Brick and Block Masonry Conference, IBMAC 2016.** Padova, Italy, 26-30 June 2016. Presentation of the paper: “Coccia S, Di Carlo F, Imperatore S (2016). STRENGTH REDUCTION FACTOR FOR OUT-OF-PLANE FAILURE MECHANISMS OF MASONRY WALLS.” Published in the conference proceedings, pp. 137-144, ISBN: 978-113802999-6.
- 28-30/06/2017 **International Conference on Mechanics of Masonry Structures Strengthened with Composites Materials, MuRiCo5 2017.** Bologna, Italy, 28-30 June 2017. Presentation of the paper: “Coccia S, Di Carlo F, Imperatore S (2017). SEISMIC BEHAVIOUR OF ROCKING ELEMENTS REINFORCED WITH COMPOSITE MATERIALS.” Published in the conference proceedings, pp. 604-611, ISBN: 978-303571164-6.
- 09-11/07/2018 **10th International Masonry Conference, IMC 2018.** Milano, Italy, 09-11 July 2018. Presentation of the paper: “Coccia S, Di Carlo F, Imperatore S (2018). SEISMIC RETROFITTING OF MASONRY ROCKING ELEMENTS WITH COMPOSITE REBARS.” Published in the conference proceedings, pp. 1017-1028, ISSN: 2523532X.
- 24-26/06/2019 **COMPdyn 2019 - 7th ECCOMAS Thematic Conference on Computational Methods in Structural Dynamics and Earthquake Engineering.** Crete, Greece, 24-26 June 2019. Presentation of the paper: “Colonna S, Imperatore S, Ferracuti B (2019). FRAGILITY CURVES OF MASONRY CHURCHES FAÇADES.” Published in the conference proceedings, pp. 718-731, ISSN: 26233347, ISBN: 978-618828446-3, DOI: 10.7712/120119.6951.19424.
- 19-20/09/2019 **Workshop “The New Boundaries of Structural Concrete” 2019.** Milan, Italy, 19-20 September 2019. Presentation of the paper: “Benenato A, Imperatore S, Ferracuti B (2019). MECHANICAL BEHAVIOUR OF STEEL REINFORCEMENT DAMAGED BY CORROSION: A REVIEW.” Published in the conference proceedings, pp. 325-334, ISBN: 978-88-98720-22-4.
- 23-28/09/2019 **ICNAAM 2019 - 17th International Conference of Numerical Analysis and Applied Mathematics.** Rhodes, Greece, 23-28 September 2019. Presentation of the paper: “Benenato A, Ferracuti B, Imperatore S, Kioumarsis M (2019). BOND STRENGTH OF RC ELEMENTS WITH CONSIDERATION OF CORROSION: AN EXPERIMENTAL SURVEY.” Published in the conference proceedings, vol. 2293, ISBN: 978-073544025-8, DOI: 10.1063/5.0026732.
- 30/11/2021 - 03/12/2021 **fib CACRCS DAYS 2021 - Capacity Assessment of Corroded Reinforced Concrete Structures from Research to Daily Engineering Evaluation.** Online, 30 November - 3 December 2021. Presentation of the paper: “Imperatore S, Benenato A, Kioumarsis M, Ferracuti B (2020). THE CORROSION INFLUENCE ON THE BOND PERFORMANCE OF DIFFERENT REINFORCEMENT TYPOLOGY.” Published in the conference proceedings, pp. 61-64, ISSN: 2617-4820, ISBN: 978-2-940643-14-1.
- 12/06/2023 - 14/06/2023 **COMPdyn 2023 - 9th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering.** Athens, Greece, 12-14 June 2023. Presentation of the paper: “Imperatore S, Lignola GP, Ferracuti B. SEISMIC VULNERABILITY ASSESSMENT OF AN ITALIAN ANCIENT CHURCH ACCORDING TO CONVENTIONAL APPROACHES.” Published in the conference proceedings.
- 13/09/2023 - 15/09/2023 **fib CACRCS DAYS 2023 - Capacity Assessment of Corroded Reinforced Concrete Structures: from Research to Daily Engineering Evaluation.** Parma, Italy, 13-15 September 2023 Presentations of the papers: “Imperatore S, Ferracuti B. MECHANICAL BEHAVIOUR OF NATURALLY CORRODED STEEL REINFORCEMENT: A STATE OF ART”; “Ferracuti B, Imperatore S, Lignola GP. CORROSION EFFECT ON FLEXURAL BEHAVIOUR OF RC MEMBERS.” Published in the

conference proceedings.

30/06/2024 - 05/07/2024 **18th World Conference on Earthquake Engineering, WCEE 2024.** Milan, Italy, 30 June - 5 July 2024 Presentations of the papers: "Imperatore S, Lignola GP, Ferracuti B. SEISMIC VULNERABILITY OF MASONRY CHURCH FAÇADES"; "Casanova Municchia A, Martellini C, Patanè F, Pagliaroli T, Imperatore S. AUTOMATIC DAMAGE DETECTION IN ARCHITECTURAL HERITAGE STRUCTURES." Papers will be published in the conference proceedings.

19/09/2024 - 20/09/2024 **The New Boundaries of Structural Concrete 2024, NBSC 2024.** Rome, Italy, 19-20 September 2024. Presentation of the paper: "Imperatore S, Martellini C, Monteleone C, Pagliaroli T, Patanè F, Casanova Municchia A. AUTOMATIC CRACK PATTERN DETECTION AND ASSESSMENT OF CORRODED REINFORCED CONCRETE STRUCTURES." Papers will be published in the conference proceedings.

#### C. Organization of Minisymposia within International Conferences

23-28/09/2019 Minisymposium 40: "New Trends in Numerical Computation for Solid and Structural Mechanics" nell'ambito di ICNAAM 2019, 17th International conference of numerical analysis and applied mathematics. 23 - 28 September 2019, Rhodes, Greece.

#### D. Member of the Organizing/Scientific Committee within International Conferences

13/09/2023 - 15/09/2023 **fib CACRCS DAYS 2023 Capacity Assessment of Corroded Reinforced Concrete Structures: from Research to Daily Engineering Evaluation.** 13-15 September 2023, Parma, Italy. Member of the Scientific Committee

30/06/2025 - 03/07/2025 **fib CACRCS DAYS 2025 Capacity Assessment of Corroded Reinforced Concrete Structures: from Research to Daily Engineering Evaluation.** 30 June-3 July 2025, Lecco, Italy. Member of the Scientific Committee

## 6. Participation in Editorial Boards of Journals and Book Series

### A. Reviewer for International Scientific Journals Indexed in ISI WoS and/or Scopus

		ISSN
ELSEVIER	Engineering Structures	0141-0296
	Construction and Building Materials	0950-0618
	Waste Management	0956-053X
	Case Studies in Construction Materials	2214-5095
	Sensors and Actuators: A. Physical	09244247
	Structures	2352-0124
	Materials	1996-1944
	Sensors	1424-8220
MDPI	Applied Sciences	2076-3417
	Buildings	2075-5309
	Metals	2075-5309
	Infrastructures	2412-3811
ASCE	Sustainability	2071-1050
	Journal of Composites Science	2504-477X
	Safety	2313-576X
	Journal of Materials in Civil Engineering	1226-7988
SPRINGER	KSCE Journal of Civil Engineering	0899-1561
	Bulletin of Earthquake Engineering	1570-761X
FRONTIERS	Frontiers in Built Environment sections: "Bridge Engineering"	2297-3362
HINDAWI	Advances in Civil Engineering	1687-8086

### B. Editorial Activities for International Scientific Journals Indexed in ISI WoS and/or Scopus

— Since 2017, Member of the **SCIENTIFIC COMMITTEE** for *SCIREA Journal of Civil Engineering and Building Construction*

nvited by Prof. Charis Apostolopoulos, Member of the **SCIENTIFIC COMMITTEE** for the Special Issue “The Effect of Coastal Environment on Reinforced Concrete Buildings” organized by the international journal *Advances in Civil Engineering* (<https://www.hindawi.com/journals/ace/si/750795/cfp/>)

- **Guest Editor** of the Special Issue “Structural Assessment of Reinforced Concrete Elements Damaged by Corrosion: Experimental, Numerical and Analytical Studies” in *Materials* (ISSN 1996-1944). 5-Year Impact Factor: 3.424
- **Guest Editor** of the Special Issue “Seismic Vulnerability Assessment of Civil Engineering Structures” in *Sustainability* (ISSN 2071-1050). Impact Factor: 3.9 (2022); 5-Year Impact Factor: 4.0 (2022)
- **Topical Advisory Panel Member** of *Corrosion and Materials Degradation* (ISSN 2624-5558). CiteScoreTracker 2024: 5.0

#### C. Editorial Activities for International Conferences Indexed in ISI WoS and/or Scopus

**Reviewer** of scientific papers presented at Minisymposium 40: “New Trends in Numerical Computation for Solid and Structural Mechanics” within the international conference ICNAAM 2019, 17th International Conference of Numerical Analysis and Applied Mathematics (23 - 28 September 2019, Rhodes, Greece), which will be published in a scientific journal published by AIP Publishing LLC (1305 Walt Whitman Road, Suite 300 Melville, NY 11747, USA)

**Reviewer** of scientific papers presented at *fib CACRCS DAYS 2023: Capacity Assessment of Corroded Reinforced Concrete Structures: from Research to Daily Engineering Evaluation*, 13-15 September 2023, Parma, Italy, in the role of member of the scientific committee.

## 7. Research Products

### A. Journal Articles

IMPERATORE, S., Benenato, A., Spagnuolo, S., Ferracuti, B., & Kioumars, M. (2024). Corrosion effects on the flexural performance of prestressed reinforced concrete beams. *Construction and Building Materials*, 411, 134581.

Benenato, A., Ferracuti, B., IMPERATORE, S., & Lignola, G. P. (2022). Corrosion level estimation by means of the surface crack width. *Construction and Building Materials*, 342, 128010.

IMPERATORE, S. (2022). Modelling Strategies for Reinforced Concrete Elements under Corrosion Degradation. *Materials*, 15(13), 4601.

IMPERATORE, S. (2022). Mechanical properties decay of corroded reinforcement in concrete – An overview. *Corrosion and Materials Degradation*, 3(2), 210-220.

Ferracuti B, IMPERATORE S, Zucconi M, Colonna S (2022). Damage to Churches after the 2016 Central Italy Seismic Sequence. *Geosciences*, 12(3), 122.

Kioumars, M, Benenato A, Ferracuti B, IMPERATORE S (2021). Residual flexural capacity of corroded prestressed reinforced concrete beams. *Metals*, 11(3), 442.

Coccia S, Di Carlo F, IMPERATORE S (2020). Masonry Walls Retrofitted with Vertical FRP Rebars. *Buildings*, 10(4), 72.

IMPERATORE S, Rinaldi Z, Spagnuolo S (2019). Experimental investigations on the effects of the steel rebar corrosion at structural level. *Structural Concrete*, 20(6), 2230-2241.

IMPERATORE S, Rinaldi, Z (2019). Experimental behavior and analytical modeling of corroded steel rebars under compression. *Construction and Building Materials*, 226, 126-138.

IMPERATORE S, Rinaldi Z, Spagnuolo S (2019). Influence of corrosion on the experimental behaviour of RC ties. *Engineering Structures*, 198, 109458.

Imperatore S, Rinaldi Z (2019). Cracking in Reinforced Concrete Structures Damaged by Artificial Corrosion: An Overview. *The Open Construction & Building Technology Journal*, 13(1).

Bossio A, IMPERATORE S, Kioumars, M (2019). Ultimate flexural capacity of reinforced concrete elements damaged by corrosion. *Buildings*, 9(7), 160.

IMPERATORE S, Rinaldi Z, Drago C (2017). Degradation relationships for the mechanical properties of corroded steel rebars. *Construction and Building Materials*, 148, 219-230.

Coccia S, Di Carlo F, IMPERATORE S (2017). Force reduction factor for out-of-plane simple mechanisms of masonry structures. *Bulletin of earthquake engineering*, 15(3), 1241-1259.

IMPERATORE S, Leonardi A, Rinaldi Z (2016). Strength decay of RC sections for chloride attack.

International Journal of Structural Integrity, 7(2), 194-212.

Coccia S, IMPERATORE S, Rinaldi Z (2016). Influence of corrosion on the bond strength of steel rebars in concrete. *Materials and structures*, 49(1-2), 537-551.

Caratelli A, IMPERATORE S, Meda A, Rinaldi Z (2016). Punching shear behavior of lightweight fiber reinforced concrete slabs. *Composites Part B: Engineering*, 99, 257-265.

IMPERATORE S, Leonardi A, Rinaldi Z (2012). Mechanical behaviour of corroded rebars in reinforced concrete elements. In *Mechanics, Models and Methods in Civil Engineering* (pp. 207-220). Springer, Berlin, Heidelberg.

Rinaldi Z, IMPERATORE S, Valente C (2010). Experimental evaluation of the flexural behavior of corroded P/C beams. *Construction and Building Materials*, 24(11), 2267-2278.

Rinaldi Z IMPERATORE S, Valente C (2009). Experimental Evaluation of the Structural Behaviour of Corroded P/C Beams. In: *Studies and Researches Annual Review of Structural Concrete*. BRESCIA: Starrylink Editrice Brescia, ISBN: 978-88-96-22528-8

*B. Articles in conferences indexed in ISI WoS and/or Scopus*

IMPERATORE S, Martellini C, Monteleone C, Pagliaroli T, Patanè F, Casanova Municchia A. Automatic crack pattern detection and assessment of corroded reinforced concrete structures". Lavoro presentato al **NSBC2024** ancora non indicizzato in SCOPUS

Casanova Municchia A, Martellini C, Patanè F, Pagliaroli T, IMPERATORE S. Automatic damage detection in architectural heritage structures. Lavoro presentato al **WCEE2024** ancora non indicizzato in SCOPUS

IMPERATORE S, Lignola GP, Ferracuti B. Seismic behavior of reinforced concrete columns damaged by corrosion. Lavoro presentato al **WCEE2024** ancora non indicizzato in SCOPUS

IMPERATORE S, Lignola GP, Ferracuti B. Seismic vulnerability of masonry church facades. Lavoro presentato al **WCEE2024** ancora non indicizzato in SCOPUS

IMPERATORE S, Ferracuti B. Mechanical behaviour of naturally corroded steel reinforcement: a state of art. Lavoro presentato al **fib CACRCS DAYS 2023** ancora non indicizzato in SCOPUS

Ferracuti B, IMPERATORE S, Lignola GP. Corrosion effect on flexural behaviour of RC members. Lavoro presentato al **fib CACRCS DAYS 2023** ancora non indicizzato in SCOPUS

IMPERATORE S, Benenato A, Kioumarsi M, Ferracuti B (2023 September). Experimental Investigation on the Bond-Slip Behavior of Corroded Strands. *Lecture Notes in Civil Engineering Volume 351, Pages 324 - 338* 2023 Italian Concrete Conference, ICC 2021 Virtual, Online 14 April 2021 through 17 April 2021 Code 302659

IMPERATORE S, Lignola GP, Ferracuti B. (2023 June). Seismic vulnerability assessment of an Italian ancient church according to conventional approaches. *COMPdyn 2023 9th International Conference on Computational Methods in Structural Dynamics and Earthquake Engineering*. 12-14 June 2023, Athens, Greece.

IMPERATORE S, Benenato A, Kioumarsi M, Ferracuti B (2021, December). The corrosion influence on the bond performance of different reinforcement typology. *fib Symposium Pages 61 - 64*. 2021 Workshop on Capacity Assessment of Corroded Reinforced Concrete Structures, CACRCS DAYS 2021 Virtual, Online 30 November 2021 through 3 December 2021. ISSN: 2617-4820. ISBN: 978-2-940643-14-1.

Benenato A, Ferracuti B, IMPERATORE S, Lignola GP (2020, December). Statistical analysis of predictive models for crack width induced by natural corrosion in beams. In: *Proceedings of fib CACRCS DAYS 2020-Capacity Assessment of Corroded Reinforced Concrete Structures from Research to Daily Engineering Evaluation* (pp. 49-52). Fédération Internationale du Béton-International Federation for Structural Concrete. ISSN: 2617-4820. ISBN: 978-2-940643-14-1.

Benenato A, Ferracuti B, IMPERATORE S, Kioumarsi M, Spagnuolo S (2020, December). Behaviour of prestressed concrete beams damaged by corrosion. In: *Proceedings of fib CACRCS DAYS 2020-Capacity Assessment of Corroded Reinforced Concrete Structures* (pp. 221-228). Fédération Internationale du Béton-International Federation for Structural Concrete. ISBN: 978-2-940643-10-3.

Benenato A, Ferracuti B, IMPERATORE S, Kioumarsi M (2020, December). Experimental tests on bond performance between corroded plain steel bars and concrete. In: *Proceedings of fib CACRCS DAYS 2020-Capacity Assessment of Corroded Reinforced Concrete Structures* (pp. 139-146). Fédération Internationale du Béton-International Federation for Structural Concrete. ISBN: 978-2-940643-10-3.

Benenato A, Ferracuti B, IMPERATORE S, Lignola G P (2020, December). The surface crack width: an index to estimate the corrosion level of reinforcement. In: *Proceedings of fib CACRCS DAYS 2020-Capacity*



Assessment of Corroded Reinforced Concrete Structures (pp. 107-114). Fédération Internationale du Béton-International Federation for Structural Concrete. ISBN: 978-2-940643-10-3.

Benenato A, IMPERATORE S, Lignola G P, Ferracuti B (2021, June). Probabilistic seismic fragility for rocking masonry façades using cloud analysis. In: 2021 Compdyn Proceedings. ISSN: 26233347

Benenato A, Ferracuti B, IMPERATORE S, Lignola G P (2020, September). Evaluation of the most efficient IM for the vulnerability assessment of masonry façades. In: AIP Conference Proceedings. vol. 2293, ISBN: 978-073544025-8 DOI: 10.1063/5.0026838.

Benenato A, Ferracuti B, IMPERATORE S, Kioumarsis M (2020, September). Bond strength of RC elements with consideration of corrosion: An experimental survey. In: AIP Conference Proceedings. vol. 2293, ISBN: 978-073544025-8, DOI: 10.1063/5.0026732.

Nerilli F, IMPERATORE S, Zucconi M (2020, September). Preface of the "Symposium on new trends in numerical computation for solids and structural mechanics". In: AIP Conference Proceedings. vol. 2293. ISBN: 978-073544025-8. DOI: 10.1063/5.0026941.

IMPERATORE S, Kioumarsis M (2019, October). Lateral displacement capacity of reinforced concrete elements damaged by corrosion. In IOP Conference Series: Materials Science and Engineering. Vol. 652, No. 1. ISSN 17578981. DOI: 10.1088/1757-899X/652/1/012032.

Kioumarsis M, Baghban M H, IMPERATORE S. (2019, October). Effect of time dependent corrosion rate on residual capacity of corroded RC beam. In IOP Conference Series: Materials Science and Engineering. Vol. 652, No. 1. ISSN: 17578981. DOI: 10.1088/1757-899X/652/1/012031.

IMPERATORE S., Kioumarsis M (2019, September). Seismic behavior of irregular RC-Frames damaged by corrosion. In Advances in Engineering Materials, Structures and Systems: Innovations, Mechanics and Applications - Proceedings of the 7th International Conference on Structural Engineering, Mechanics and Computation, 2019. CRC Press. ISBN: 978-113838696-9. DOI: 10.1201/9780429426506-379.

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#### *C. Other articles presented at Conferences and Workshops*

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Romano F, Zucconi M, IMPERATORE S, Ferracuti B (2017, September). Advancements in Seismic Vulnerability Assessment Methodologies for RC Buildings at Territorial Scale. In: Atti del XVII Convegno ANIDIS. "L'Ingegneria Sismica in Italia". Pistoia, 17-21 settembre 2017. ISBN: 978-886741-8541. ISSN: 2532-120X.

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Coccia S, IMPERATORE S, Di Carlo F (2015, September). Fattore di struttura per elementi in muratura sollecitati fuori dal piano. In: L'Ingegneria sismica in Italia XVI convegno ANIDIS. L'Aquila, 13-17 Settembre, 2015. ISBN 978-88-940985-6-3.

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Carnevale L, IMPERATORE S, Lavorato D, Nuti C, Leoni G, Tropeano G (2012, September). Assessment of seismic behavior of RC bridges under asynchronous motion and comparison with simplified approaches. In: Proceedings of 15th World Conference on Earthquake Engineering 2012. Lisbon, 24-28 September 2012.:

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IMPERATORE S, Lavorato D, Nuti C, Santini S, Sguerri L (2011, May). Indagine sperimentale su travi in c.a. rinforzate a taglio con FRP. In: Atti delle "Giornate AICAP 2011" Le prospettive di sviluppo delle opere in calcestruzzo strutturale nel terzo millennio. Padova 19-21 maggio 2011.

IMPERATORE S, Rinaldi Z (2010, October). Life cycle of bridge grilladges subjected to corrosion. In: Proceedings of RILEM PRO70: 2nd International Symposium on Service Life Design for Infrastructures. Delft, The Netherlands, 4-6 October 2010. ISBN: 9782351580967.

IMPERATORE S, Rinaldi Z, Valente C, Zuccarino G (2010, November). Influenza della corrosione sulle caratteristiche meccaniche dell'acciaio. In: Atti del XVIII Congresso CTE. Brescia, 11-13 novembre 2010. ISBN: 978-88-903647-6-1.

Caratelli A, Grimaldi A, Ianniruberto U, IMPERATORE S, Rinaldi Z (2009, June). Analisi sperimentale di archi in muratura rinforzati con FRP all'intradosso. In: Atti del XIII Convegno ANIDIS "L' ingegneria Sismica in Italia". Bologna, Palazzo "Re Enzo" dal 28 giugno al 2 luglio 2009. ISBN: 9788890429200.

Como M, IMPERATORE S (2009, June). Effetti del degrado statico sulla resistenza sismica delle dighe in calcestruzzo ad arco/gravità. In: Atti del XIII Convegno ANIDIS "L' ingegneria Sismica in Italia". Bologna, Palazzo "Re Enzo" dal 28 giugno al 2 luglio 2009. ISBN: 9788890429200.

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## 8. Official Teaching Positions in the CEAR-07/A (ex ICAR/09) SSD

- Since the 2015-2016 academic year Official appointment of the Chair of "Structural Engineering" (master's degree in civil engineering) at the University Nicolò Cusano-Telematica Roma. In accordance with laws 230/2005 and 240/2010, this appointment is renewed annually.
- Since the 2015-2016 academic year Official appointment of the Chair of "Structural Strengthening of Masonry Structures" (master's degree in civil engineering) at the University Nicolò Cusano-Telematica Roma. In accordance with laws 230/2005 and 240/2010, this appointment is renewed annually.
- 20/12/2016 Conducting 3 hours of teaching as part of the training course titled "Maintenance Interventions According to the Guidelines of the ANAS Technical Papers" on the following topics: 1) Restoration of safety conditions for bridge edge curbs and barriers - Surface restoration of deteriorated concrete, 2) Local interventions on supports (Prot. CDG-0132659-P of 07/12/2016).
- AY 2014-2015 Contract teaching position at the Nicolò Cusano University for the following subjects:  
— "Structural Strengthening of Masonry Structures" (master's degree in civil engineering)  
— "Structural Engineering" (master's degree in civil engineering)
- AY 2012-2014 Contract teaching position at the Nicolò Cusano University for the following subjects:  
— "Earthquake Engineering" (master's degree in civil engineering)  
— "Structural Engineering" (master's degree in civil engineering)
- AY 2007-2008 Contract teaching position at the Faculty of Engineering, University of Rome "Tor Vergata" for the course "Construction Techniques Laboratory I and II".

## 9. Institutional Activities

Since 2014, involved in the Quality Assurance process at the University Nicolò Cusano, in accordance with the AVA 2.0 Guidelines of ANVUR and member of the Council of the Master's Degree in Civil Engineering:

From 2014 to 2015, member of the Teacher/Student Joint Commission

From 2015 to 2016, and again since 2021, member of the Program Review Group for the Master's Degree in Civil Engineering

Since 2018, member of the Research Commission

Since 2023, member of the Department Council of Engineering

Since 2023, member of the Laboratory Commission

## 10. Activities in Accredited PhD Programs

### A. Teaching Assignments

Academic Year	2018
Course Duration and Credits	20 hours (6 credits)
PhD Program	PhD in Industrial and Civil Engineering at the Niccolò Cusano University Director Prof. G. Bella
Course Title	<b>Modeling the structural performance of existing reinforced concrete structures</b>
Academic Year	2018
Course Duration and Credits	10 hours (3 credits)
PhD Program	Civil Engineering and Energy Technology presso la Faculty of Technology, Art and Design di OsloMET – Oslo Metropolitan University
Course Title	<b>Structural assessment of corroded reinforced concrete structures</b>

### B. PhD Thesis Supervision

Cycle	XXXIX Cycle
PhD Program	PhD in Industrial and Civil Engineering at the Niccolò Cusano University, Director Prof. G. Bella
Research Topic	Corrosion Effects on Reinforced Concrete Structures

### C. Cotutoraggio di tesi di dottorato

Cycle	XXXI Cycle
PhD Program	PhD in Industrial and Civil Engineering at the Niccolò Cusano University, Director Prof. G. Bella
Thesis Title	Seismic response of historic masonry churches from the damage observation to the numerical simulation of the façade rocking motion.
Cycle	XXXIV Cycle
PhD Program	PhD in Industrial and Civil Engineering at the Niccolò Cusano University, Director Prof. G. Bella
Thesis Title	Structural assessment of reinforced concrete elements damaged by corrosion

### C. Participation in the PhD Board

Since 19/04/2019, member of the PhD Board of the PhD in Industrial and Civil Engineering - Civil Engineering Curriculum at the Niccolò Cusano University

Since 04/06/2024, member of the PhD Board of the PhD in Territory, Innovation, and Sustainability at the Niccolò Cusano University

I, the undersigned, aware that false statements are punishable under Articles 483, 495, and 496 of the Criminal Code and special laws on the matter,

**DECLARE (Articles 46 and 47 of Presidential Decree no. 445/2000)**

That the activities carried out, the titles and publications contained in this Professional Curriculum attest to the competencies, qualifications, professional, scientific, and educational experiences possessed. The undersigned declares availability to produce original documents and provide any clarification or supplementary documentation regarding the titles, certificates, publications, and scientific and professional experiences indicated in the Curriculum.

The undersigned authorizes the processing of personal data and information solely for the purposes of the competitive and/or selection procedure for which the Curriculum is submitted or sent, in accordance with and for the purposes of Legislative Decree no. 196/2003 and subsequent amendments.

Romae, November 19 novembre 2024

Eng. Stefania Imperatore

